

NESSOL LI 200

Datums 1.6.2015 lepriekšējais datums 7.11.2014

1. VIELAS/MAISĪJUMA UN UZŅĒMĒJSABIEDRĪBAS/UZŅĒMUMA APZINĀŠANA

1.1 Produkta identifikators

1.1.1 Produkta nosaukums

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1.1.2 Produkta kods

(ID 10523), 135148, 750300, 750400, 896100

REACH reģistrācijas numurs

01-2119458049-33-0006

Vielas nosaukums Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)

1.2 Vielas vai maisījuma attiecīgi apzinātie lietojuma veidi un tādi, ko neiesaka izmantot

1.2.1 leteicamā lietošana

Vielas ražošana (ledarbības scenārijs Nr. 1)

Vielas sadale (Nr. 2)

Vielu un maisījumu veidošana un iesaiņošana (pārpakošana) (Nr. 3)

Pielietojumi pārklājumos (Nr. 4, 5, 6) Pielietojumi tīrīšanas līdzekļos (Nr. 7, 8, 9)

Pielietojumi naftas un gāzes ieguves nozarē urbšanas un ražošanas operācijās (Nr. 10)

Ellošanas materiāli (Nr. 11, 12, 13, 14, 15)

Metālapstrādes šķidrumi/velmēšanas eļļas (Nr. 16, 17)

Izmanto agroķīmijā (Nr. 18, 19) Izmanto kā degvielu (Nr. 20, 21, 22) Funkcionālie šķidrumi (Nr. 23, 24, 25)

Ceļu būves un celtniecības pielietojumi (Nr. 26)

Laboratoriju pielietojumi (Nr. 27, 28) Gumijas ražošana un apstrāde (Nr. 29)

Polimēru apstrāde (Nr. 30, 31)

Ūdens apstrādei paredzētās ķimikālijas (Nr. 32, 33)

See the PROC/SU/ERC codes of the identified uses in the exposure scenarios.

1.3 Informācija par drošības datu lapas piegādātāju

1.3.1 Piegādātājs

Neste Oyj

Adrese Keilaranta 21
Pasta indekss un pasta nodaļa FIN-00095 NESTE

FINLAND

Pasta kastīte P.O.B. 95

Pasta indekss un pasta nodaļa FIN-00095 NESTE

FINLAND

 Tālrunis
 +358-10 45811

 Telefakss
 +358-10 45 84442

 Pusinger ID
 4852222 0

Business ID 1852302-9

Email SDS@neste.com (chemical safety)

1.4 Tālruņa numurs, kur zvanīt ārkārtas situācijās

1.4.1

+358-9-471 977, +358-9-4711, Saindēšanās informācijas centrs/HUS

Lapa 1/10



DROŠĪBAS DATU LAPA

Lapa 2/10

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2. BĪSTAMĪBAS APZINĀŠANA

2.1 Vielas vai maisījuma klasificēšana

1272/2008 (CLP)

Flam. Liq. 3, H226 Asp. Tox. 1, H304

STOT SE 3, H336 STOT RE 1, H372

Aguatic Chronic 2, H411

EUH066

67/548/EEC - 1999/45/EC

Xn, N; R10-65-66-67-51/53-48/20

2.2 Etiketes elementi

PAPILDU MARĶĒJUMS UZ MAZUMTIRDZNIECĪBAS IEPAKOJUMA: Sargāt no bērniem. MAZUMTIRDZNIECĪBAS IEPAKOJUMS APRĪKOTS AR NOSTIPRINĀJUMU, KAS IR BĒRNIEM DROŠS UN LABI REDZAMIEM BRĪDINĀJUMIEM PAR BĪSTAMĪBU.

1272/2008 (CLP)

GHS09 - GHS08 - GHS07 - GHS02 Signālvārds **Bīstami**

Bīstamības paziņojumi

H226 Uzliesmojošs šķidrums un tvaiki.

H304 Var izraisīt nāvi, ja norij vai iekļūst elpceļos.

H336 Var izraisīt miegainību vai reiboņus.

H372 Izraisa orgānu bojājumus ilgstošas vai atkārtotas iedarbības rezultātā.

H411 Toksisks ūdens organismiem ar ilgstošām sekām.

EUH066 Atkārtota iedarbība var radīt sausu ādu vai izraisīt tās sprēgāšanu.

Paziņojumi par piesardzības pasākumiem

P210 Nelietot vietās, kur ir sastopams karstums/ dzirksteles/ atklāta uguns /[] / karstas

virsmas. Nesmēķēt.

P273 Izvairīties no izplatīšanas apkārtējā vidē.

P280 Izmantot aizsargcimdus/ aizsargdrēbes/ acu aizsargus/ sejas aizsargus.

P301+P310 NORĪŠANAS GADĪJUMĀ: Nekavējoties sazināties ar SAINDĒŠANĀS CENTRU vai

arstu.

P304+P340 IEELPOŠANAS GADĪJUMĀ: izvest cietušo svaigā gaisā un turēt miera stāvoklī, lai būtu

ērti elpot.

P403+P233 Glabāt labi vēdināmās telpās. Tvertni turēt cieši noslēgtu.

2.3 Citi apdraudējumi

Tvaiki ir smagāki par gaisu un var veidot eksplozīvu maisījumu ar gaisu. Lēni iztvaiko. Tvaiki var izraisīt acu, elpošanas sistēmas un ādas kairinājumu. Augsnes un ūdens piesārņojuma risks.

3. SASTĀVS/INFORMĀCIJA PAR SASTĀVDAĻĀM

3.1 Vielas

CAS / EK Nr. Vielas ķīmiskais nosaukums Koncentrācija Klasifikācija

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Oglūdenraži, C9-C12, n-alkāni,

izoalkāni, cikliski, aromātiski (2-25%)

100 %

CLP: Flam.Liq. 3, H226; Asp.Tox 1, H304; STOT SE 3, H336; STOT RE 1, H372; Aq. Chronic 2, H411;

EUH066

DSD-DPD: R10, Xn, R48/20-65-67-

66. N. R51/53

3.3 Cita informācija

Satur: Benzols < 0.1 apjoms-%, n-heksāns < 1 %, aromātiskie ogļūdeņražu 14...20 apjoms-%.

Identitāte ārpus ES (CAS numurs un vielas nosaukums): 64742-82-1, Ligroīns (nafta), hidrodesulfurizēts, smagais. Iepriekšējais EK numurs: 265-185-4. Reģistrācijas numurs, skat. 1.1.2 punktu.

4. PIRMĀS PALĪDZĪBAS PASĀKUMI

4.1 Pirmās palīdzības pasākumu apraksts

4.1.2

Ja ir ieelpoti tvaiki, izvediet cietušo no riska zonas, turiet siltumā un mierā. Dodiet skābekli vai veiciet mākslīgo elpināšanu, ja nepieciešams. Pēc būtiskas pakļaušanas iedarbībai konsultējieties ar mediķi.

4.1.3 Nokļūšana uz ādas

Noģērbiet netīrās drēbes, ieteicamāk pēc aizsargdušas (šķidruma izgarojumi var radīt aizdegšanās risku). Nomazgājiet ādu ar lielu daudzumu ūdens un ziepēm. Ja ādas kairinājums nepāriet, konsultējieties ar ārstu.

4.1.4

Nekavējoties noskalojiet ar lielu ūdens daudzumu, arī zem acu plakstiniem. Turpiniet skalošanu vairākas minūtes, tikmēr grozot acis uz augšu, leju un sāniem. Konsultējieties ar ārstu (oftalmologu, radzenes bojājuma risks).

4.1.5 Norīšana

NEIZRAISIET VEMŠANU. Konsultējieties ar ārstu (risks iekļūt plaušās, īpaši, ja rodas nelabums vai kairinājums).

4.2 Svarīgākie simptomi un ietekme - akūta un aizkavēta

Izraisa galvassāpes, miegainību vai citu ietekmi uz centrālo nervu sistēmu. Iekļūšana plaušās var izraisīt nāvējošu ķīmisko pneimonītu. Atkārtota iedarbība var radīt sausu ādu vai izraisīt tās sprēgāšanu.

4.3 Norāde par nepieciešamo neatliekamo medicīnisko palīdzību un īpašu aprūpi lekļūšana plaušās var izraisīt nāvējošu ķīmisko pneimonītu.

5. UGUNSDZĒSĪBAS PASĀKUMI

5.1 Ugunsdzēsības līdzekļi

5.1.1 Piemēroti ugunsdzēsības līdzekli

Ūdens šalts, putas, sauss pulveris, oglekļa dioksīds.

5.1.2 Ugunsdzēšanas līdzekļi, kurus aizliegts lietot, ņemot vērā drošības apsvērumus Ūdens sprausla.

5.2 Īpaša vielas vai maisījuma izraisīta bīstamība

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Uzliesmojošs. Tvaiku eksplozijas risks, ja tie ir smagāki par gaisu, uzkrājas ieplakās vai noslēgtās vietās. Eksplozijas risks pieaug spiediena dēļ, ja produkta konteineri vai cisternas pakļauj uguns iedarbībai. Stipra karsēšana vai uguns var radīt oglekļa monoksīdu un citus produktus, kas rodas nepilnīgas sadegšanas rezultātā.

5.3 leteikumi ugunsdzēsējiem

Atvēsiniet ar ūdens šalti produkta cilindrus un cisternas uguns tuvumā no pietiekami droša attāluma. Novērst virszemes ūdens vai gruntsūdeņu sistēmas piesārņošanu ar ugunsdzēšanas ūdeni.

5.4 Specifiskās metodes

Piesardzība ugunsdzēšanai : Noslēgti elpošanas orgāni un aizsargapģērbs.

6. PASĀKUMI NEJAUŠAS NOPLŪDES GADĪJUMOS

6.1 Individuālās drošības pasākumi, aizsardzības līdzekļi un procedūras ārkārtas situācijām Izvairieties no tvaiku ieelpošanas un to saskares ar ādu. Nēsājiet visām darbībām atbilstošu aizsargaprīkojumu. Evakuējiet cilvēkus, kas no izplūšanas vietas atrodas vēja virzienā. Novērsiet aizdegšanās un eksplozijas risku, glabājot aizdegšanās avotu ārpus laukuma un novēršot tvaika uzkrāšanos ieplakās un noslēgtās vietās. Nodrošiniet efektīvu ventilāciju. Lielas izplūdes, var piesardzīgi noklāt ar putam, ja tādas ir pieejamas, lai ierobežotu tvaiku mākoņa veidošanos.

6.2 Vides drošības pasākumi

Mēģiniet ierobežot izplūdi un novērst produkta izplatīšanos apkārtējā vidē. Savāciet šķidrumu, pirms tas iekļūst drenāžā, zemē un ūdenī. Izšļakstīšanās gadījumā nekavējoties sazinieties ar vietējiem varas orgāniem. Augsnes un ūdens piesārņojuma risks.

6.3 lerobežošanas un savākšanas paņēmieni un materiāli

Nekavējoties sāciet šķidruma un piesārņotās augsnes savākšanu. Lielas noplūdes utilizācijai savākt mehāniski (aizvākt pumpējot). Mazu daudzumu var savākt, izmantojot absorbējošu materiālu. Pievērsiet uzmanību uguns, eksplozijas un veselības draudiem, ko izraisa produkts. Ja ir notikusi noplūde ūdenī, savāciet produktu, to nosmeļot vai izmantojot citus piemērotus mehāniskus līdzekļus. Par kliedētāju izmantošanu jākonsultējas ar ekspertu un, ja nepieciešams, jāapstiprina vietējām varasiestādēm

6.4 Atsauce uz citām iedaļām

No produkta atkritumiem jāatbrīvojas, saskaņā ar vietējo likumdošanu (13. punkts). Personālajai aizsardzībai skat. 8. punktu.

7. LIETOŠANA UN GLABĀŠANA

7.1 Piesardzība drošai lietošanai

Apstrādājiet produktu noslēgtās sistēmās vai nodrošiniet pietiekamu ventilāciju. Izvairieties no tvaiku ieelpošanas un to saskares ar ādu. Ja nepieciešams, izmantojiet aizsargaprīkojumu. Nedzert, neēst un nesmēķēt, darbojoties ar vielu. Nomazgāt rokas pirms pārtraukumiem un darba dienas beigās. Izšļakstīšanās un noplūde: Saslaucīt, lai novērstu slīdēšanas briesmas. Tvertnes darbības laikā, IEVĒROJIET ĪPAŠUS NORĀDĪJUMUS (skābekļa un ogļūdeņražu izspiešanas risks).

Materiāls ir statisks akumulators. Turiet tālu no aizdegšanās avotiem. Veiciet piesardzības pasākumus (piemēram, sazemēšanu) pret statisko izlādēšanos.

7.2 Drošas glabāšanas apstākļi, tostarp visu veidu nesaderība

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Ugunsnedrošu šķidrumu glabāšanai piemērotā cisternā vai noliktavā. Glabāt konteinerus cieši noslēgtus vēsā, labi vēdināmā vietā. Veiciet piesardzības pasākumus, lai aizkavētu produkta noliešanu drenāžā, zemē vai ūdenī. Glabājiet mazumtirdzniecības partijas cieši noslēgtās, marķētās tvertnēs, kas ir ogļūdeņražu necaurlaidīgas. Glabāt prom no ēdiena un dzēriena.

Piemēroti materiāli un pārklājumi (ķīmiskā saderība):

Teflons, polipropilēns, polietilēns, nerūsošais tērauds, oglekļa tērauds. Poliesteris.

Nepiemēroti materiāli un apvalki:

Butilkaučuks, dabīgais kaučuks, etilēna-propilēn-diēna monomērs (EPDM), polistirēns.

7.3 Konkrēts(-i) galalietošanas veids(-i)

Nekas nav zināms.

8. IEDARBĪBAS PĀRVALDĪBA/INDIVIDUĀLĀ AIZSARDZĪBA

8.1 Pārvaldības parametri

8.1.1 Sliekšņa robežvērtības

Ligroīna šķīdinātājs, 2 grupa 200 mg/m³ (8 h)

HTP 2014/FIN

8.1.2 Cita informācija par robežvērtībām

Var pielietot arī benzīna ogļūdeņražu atsevišķās robežvērtības. Saskares kontroles uzraudzības metode: SFS-EN 689. SFS-3861

8.1.4 **DNEL**

Darba nēmēji:

ieelpojot 570 mg/m³ (Short-term exposure, systemic effects);

330 mg/m³ (Long-term exposure, systemic effects).

Dermal: 44 mg/kg bw/d (Long-term exposure, systemic effects)

Patērētāji:

ieelpojot 570 mg/m³ (Short-term exposure, systemic effects);

71 mg/m³ (Long-term exposure, systemic effects).

Oral: 26 mg/kg bw/d (Long-term exposure, systemic effects)

8.1.5 PNEC

Informācija nav pieejama.

8.2 ledarbības pārvaldība

8.2.1 Atbilstoša tehniskā pārvaldība

Apstrādājiet produktu noslēgtās sistēmās vai nodrošiniet pietiekamu ventilāciju. Ja nepieciešams, izmantojiet aizsargaprīkojumu. Rīkoties atbilstoši labai rūpnieciskās higiēnas un drošības praksei.

8.2.2 Individuālie aizsardzības pasākumi

8.2.2.1 Elpošanas aizsardzība

Pusmaska (organisko tvaiku filtrs, A2 tips). Filtra ierīci nepārtraukti var izmantot maksimums 2 stundas. Filtra ierīci nevar izmantot apstākļos, kad skābekļa līmenis ir zems (< 19 apj.-%). Lielā koncentrācijā jālieto elpošanas aparāts (atsevišķs vai aparāts ar svaiga gaisa padeves šļūteni). Bieži jāmaina filtrs. Respiratori saskaņā ar standartiem EN 140 un EN 141.

8.2.2.2 Roku aizsardzība



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Aizsargcimdi (piemēram, no nitrilgumijas). Pārrāvuma laiks >240, aizsardzības klase 5.. Aizsargcimdi jāmaina regulāri. Aizsargcimdi saskaņā ar standartiem EN 420 un EN 374.

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8.2.2.3 Acu/sejas aizsardzība

Cieši pieguļošas drošības aizsargbrilles

8.2.2.4 Ādas aizsardzība

9.1.20

Oksidēšanas īpašības

Aizsargtērps (antistatisks), šļakstu-drošs no ķīmiskās iedarbības aizsargājošs apģērbs, kad nepieciešams.

8.2.3 Vides riska pārvaldība

Jebkura iespējama noplūde ir ņemta vērā, konstruējot savākšanas baseinus un kanalizācijas sistēmas, kā arī nosedzot uzpildes un iztukšošanas stacijas.

9. FIZIKĀLĀS UN KĪMISKĀS ĪPAŠĪBAS

9. FIZI	KĀLĀS UN ĶĪMISKĀS ĪPAŠĪBAS	
9.1 9.1.1	Informācija par pamata fizikālajām un ķīmis Izskats Dzidrs šķidrums ar mazu viskozitāti.	kajām īpašībām
9.1.2	Smarža	Tipiska ogļūdeņraža smarža.
9.1.3	Smaržas slieksnis	dati nav pieejami
9.1.4	pH	dati nav pieejami
9.1.5	Smaržas slieksnis	Kušanas punkts/ Krišanas punkts (Melting/pour point) < - 15 $^{\circ}$ C.
9.1.6	Viršanas punkts un viršanas temperatūras diapazons	150200 °C (EN ISO 3405)
9.1.7	Uzliesmošanas temperatūra	Minimums 39 °C (DIN 51755)
9.1.8	Iztvaikošanas ātrums	dati nav pieejami
9.1.9	Uzliesmojamība (cietām vielām, gāzēm)	dati nav pieejami
9.1.10	Sprādzienbīstamās īpašības	
9.1.10.1	Apakšējā sprādzienbīstamības robeža	0.6 apjoms-% (novērtējums)
9.1.10.2	Augšējā sprādzienbīstamības robeža	7.0 apjoms-% (novērtējums)
9.1.11	Tvaika spiediens	Aptuv. 0.23 kPa @ 20 °C.
9.1.12	Tvaika blīvums	Tvaika blīvums > 3 (gaiss = 1).
9.1.13	Relatīvais blīvums	0.720-0.825 (15 °C; ūdens = 1) (ISO 12185).
9.1.14	Šķīdība	
9.1.14.1	Šķīdība ūdenī	Viegli šķīstošs
9.1.14.2	Šķīdība taukos (šķīdinātājs - norādītā eļļa)	dati nav pieejami
9.1.15	Sadalījuma koeficients: n-oktanols/ūdens	Ligroīna ogļūdeņraži log Kow = 27.
9.1.16	Pašaizdegšanās temperatūra	Aptuv. 250 °C (novērtējums) .
9.1.17	Noārdīšanās temperatūra	dati nav pieejami
9.1.18	Viskozitāte	Kinemātiskā viskozitāte < 2 mm²/s (40 °C; ūdens = 0.6 mm²/s, EN ISO 3104). Viskozitāte, dinamiskā < 50 mPa.s (20 °C).
9.1.19	Sprādzienbīstamība	Nav sprādzienbīstams

Neoksidējas.



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9.2 Cita informācija

Molekulmasa apm. 147.

Virsmas spraigums 24-27 mN/m @ 25 °C (Wilhelmy plate).

10. STABILITĀTE UN REAĢĒTSPĒJA

10.1 Reaģētspēja

Nav zināma bīstama reakcija normālos lietošanas apstākļos.

10.2 Kīmiskā stabilitāte

Stabils normālos apstākļos.

10.3 Bīstamu reakciju iespējamība

Nekas nav zināms.

10.4 Apstākļi, no kuriem jāvairās

Sargāt no uguns, dzirkstelēm un karstām virsmām.

10.5 Nesaderīgi materiāli

Spēcīgi oksidētāji

10.6 Bīstami noārdīšanās produkti

Nesadalās, ja lieto, kā norādīts.

11. TOKSIKOLOĢISKĀ INFORMĀCIJA

11.1 Informācija par toksikoloģisko ietekmi

11.1.1 Akūta toksicitāte

ļoti zems toksiskums:

LD50/norijot/žurka >15 000 mg/kg (OECD 401)

LD50/dermāli/trusis >3400 mg/kg (OECD 402)

LC50/ieelpojot/4h/žurka = >13.1 mg/L (OECD 403)

11.1.2 Kairināmība un kodīgums

Nav klasificēts. (OECD 404, 405). Atkārtota iedarbība var radīt sausu ādu vai izraisīt tās sprēgāšanu.

11.1.3 Sensibilizācija

Nav ādas jutīguma. (OECD 406; HRIPT = Human Repeated Insult Patch Test).

11.1.4 Subakūtā, subhroniskā un prolongētā toksicitāte

Neklasificējas kā cilvēku kancerogēns. (OECD 453).

Nav toksisks reproduktīvajai sistēmai (OECD 413, 415)

Augļa bojājums nav klasificējams (OECD 414).

Genotoksisko izmēģinājumu (in vitro un in vivo) rezultāti ir bijuši negatīvi. (OECD 471, 473, 474, 475, 479).

11.1.5 Toksiskas ietekmes uz īpašu mērķorgānu vienreizēja iedarbība

Pakļaušana iedarbībai izraisa reiboni, nelabumu, galvas sāpes un arī narkotisku efektu.

11.1.6 Toksiskas ietekmes uz īpašu mērķorgānu atkārtota iedarbība

Izraisa orgānu bojājumus, ilgstoši vai atkārtoti iedarbojoties, ja ieelpots.

11.1.7 Bīstamība ieelpojot

Var izraisīt nāvi, ja norij vai iekļūst elpceļos. Iekļūšana plaušās var izraisīt nāvējošu ķīmisko pneimonītu.

11.1.8 Cita informācija par akūto toksicitāti

Toksikoloģiskie dati pamatojas uz izmēģinājumiem ar attiecīgajiem produktiem vai sastāvdaļām



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12. EKOLOĢISKĀ INFORMĀCIJA

12.1 Toksicitāte

12.1.1 Ūdens toksicitāte

Toksisks ūdens organismiem ar ilgstošām sekām.

Akūtā toksicitāte ūdenī:

zivs: LL50/96h = 10-30 mg/L; NOELR/96h = 0.3 mg/L (OECD 203)

vēžveidīgais : EL50/48h = 10-22 mg/L (OECD 202)

aļģe: EC50/96h = 0.58-1.2 mg/L; NOEC/96h = 0.16 mg/L; EL50/72h = 4.6-10 mg/L; NOELR/72h = 0.22-1.0

mg/L (OECD 201)

Hroniskā toksicitāte ūdenī:

zivs: NOELR/28d = 0.13 mg/L (QSAR)

 $v\bar{e}\check{z}veid\bar{i}gais: NOEC/21d = 0.10-0.37 \ mg/L; \ LOEC/21d = 0.20-0.83 \ mg/L; \ EC10/21d = 0.11-0.25 \ mg/L \ (OECD) \ and \ (OECD) \ begin{picture}(100,00) \put(0,0){\line(1,0){100}} \put(0,0)$

211)

12.2 Noturība un spēja noārdīties

12.2.1 Bioloģiskā noārdīšanās

Viegli sadalās (OECD 301F).

12.2.2 Kīmiskā noārdīšanās

Nehidrolizējas ūdenī. Gaistošie ogļūdeņraži sadalās atmosfēras ķīmiskajos procesos.

12.3 Bioakumulācijas potenciāls

Nav pieejami dati par šo produktu.

12.4 Mobilitāte augsnē

Produkts viegli iztvaiko no augsnes virsmas un virsūdeņiem. Produkts var iesūkties augsnē, līdz sasniedz pazemes ūdeņu virsmu. Sadalīšanās notiek ļoti lēni anaerobos apstākļos. Daudzmolekulu ogļūdeņraži var adsorbēties organiskos materiālos augsnē vai nosēdumos. Izgarošana ir ātrākais un galvenais izdalīšanās process ūdens un augsnes virsmā.

12.5 PBT un vPvB ekspertīzes rezultāti

Šo vielu neuzskata par noturīgu, bioakumulējošos, ne toksisku (PBT). Šo vielu neuzskata par ļoti noturīgu, ne ļoti bioakumulējošos (vPvB).

12.6 Citas nelabvēlīgas ietekmes

Nekas nav zināms. Piedāvātā informācija pamatojas uz datiem par sastāvdaļām un līdzīgu produktu ekotoksikoloģiju.

13. APSVĒRUMI, KAS SAISTĪTI AR APSAIMNIEKOŠANU

13.1 Atkritumu apstrādes metodes

Produkta atkritumi ir bīstami atkritumi. Tos jāapstrādā saskaņā ar valsts noteikumiem un vietējo iestāžu ieteikumiem. Apstrādājot atkritumus, ņemiet vērā kaitīgumu un veiciet nepieciešamos drošības pasākumus, parūpējieties par marķējumu un informāciju.

13.2 Atlikumu / neizmantoto produktu atkritumi

Tukšas tvertnes var saturēt degošus produkta atlikumus. Tukšie konteineri jānogādā vietējai pārstrādei vai atkritumu utilizācijai.

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14. INFORMĀCIJA PAR TRANSPORTĒŠANU

14.1 ANO numurs 1300

14.2 ANO sūtīšanas nosaukums UN 1300 , TURPENTINE SUBSTITUTE (white spirit) 3, III

14.3 Transportēšanas bīstamības klase(-es)14.4 Iepakojuma grupa

14.5 Vides apdraudējumi
MARINE POLLUTANT

14.6 Īpaši piesardzības pasākumi lietotājiem

EmS: F-E, S-E

14.7 Transportēšana bez taras atbilstoši MARPOL 73/78 II pielikumam un IBC kodeksam
Bulk: (MARPOL 73/78, Annex II): Noxious liquid, F, (6) n.o.s. (LI 200 contains white spirit, low (15 - 20 %)
aromatic). Pollution Category Y, Ship Type 2. According to MARPOL: "Nonsolidifying substance".

15. INFORMĀCIJA PAR REGULĒJUMU

15.1 Drošības, veselības jomas un vides noteikumi/normatīvie akti, kas īpaši attiecas uz vielām un maisījumiem

Šī drošības datu lapa atbilst Regulās (EK) No. 1907/2006 prasībām. Atjaunots saskaņā ar Regulu (ES) Nr. 453/2010, ar kuru tiek veiktas izmaiņas Regulai (EK) Nr. 1907/2006 (REACH).

15.2 Ķīmiskās drošības novērtējums

Šai vielai ir veikts ķīmiskās drošības novērtējums.

16. CITA INFORMĀCIJA

16.1 Papildinājumi, svītrojumi, grozījumi

Punkts 1.: Uzņēmējsabiedrības / uzņēmuma apzināšana

16.2 Drošības datu lapā izmantoto saīsinājumu un akronīmu atšifrējums vai paskaidrojums

CLP = Eiropas Parlamenta un Padomes Regula (EK) Nr. 1272/2008

DSD = Padomes Direktīva 67/548/EEK

DPD = Eiropas Parlamenta un Padomes Direktīva 1999/45/EK

DNEL = Derived No-Effect Level

PNEC = Predicted No-Effect Concentration

SU = Sector of Use

PROC = Process Category

PC = Product Category

ERC = Environmental Release Category

16.3 Būtiskākās bibliogrāfiskās atsauces un datu avoti

Noteikumi, datu bāzes, literatūra, pētījumi. Ķīmiskās drošības ziņojums 2014.

16.5 Attiecīgo R frāžu, bīstamības paziņojumu, drošības frāžu un/vai piesardzības paziņojumu saraksts

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R10	Uzliesmojošs.
R48/20	Kaitīgs - ieelpojot iespējams nopietns kaitējums veselībai pēc ilgstošas iedarbības.
R51/53	Toksisks ūdens organismiem, var radīt ilglaicīgu negatīvu ietekmi ūdens vidē.
R65	Kaitīgs - norijot var izraisīt plaušu bojājumu.
R66	Atkārtota iedarbība var radīt sausu ādu vai izraisīt tās sprēgāšanu.
R67	Tvaiki var radīt miegainību un reiboni.
H226	Uzliesmojošs šķidrums un tvaiki.
H304	Var izraisīt nāvi, ja norij vai iekļūst elpceļos.
H336	Var izraisīt miegainību vai reiboņus.
H372	Izraisa orgānu bojājumus ilgstošas vai atkārtotas iedarbības rezultātā.
H411	Toksisks ūdens organismiem ar ilgstošām sekām.



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SECTION 1	EXPOSURE SCENAR	IO TITLE
Title	Manufacture of Substance - Industrial	
Use Descriptor	Sector(s) of Use	SU 3: Industrial uses
		SU 8: Manufacture of bulk, large scale chemicals (including petroleum products)
		SU 9: Manufacture of fine chemicals
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure.
		PROC 2 : Use in closed, continuous process with occasional controlled exposure.
		PROC 3: Use in closed batch process (synthesis or formulation).
		PROC 4 : Use in batch and other process (synthesis) where opportunity for exposure arises.
		PROC 8a : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
		PROC 8b : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
		PROC 15: Use as laboratory reagent
	Environmental Release	ERC 1: Manufacture of substances
	Categories	ERC 4 : Industrial use of processing aids in processes and products, not becoming part of articles
	Specific Environmental Release Category	ESVOC 1.1.v1
Processes, Tasks and Activities Covered	Manufacture of the substance or use as a process chemical or extraction agent within closed or contained systems. Includes incidental exposures during recycling/recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).	
SECTION 2	OPERATIONAL CON	DITIONS AND RISK MANAGEMENT MEASURES
Section 2.1	Control of worker expo	sure
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].
characteristics	Concentration of substance in product	Up to 100% (unless stated).
	Amount used	No limit.
	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently). [G2].
	Other operational	Assumes use at not > 20oC above ambient [G15].
	conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene is implemented. [G1].
Contributing	Specific Risk Management Measures and Operational Conditions	
Scenarios	(only required controls to demonstrate safe use listed)	
	General exposures (closed systems) [CS15] PROC 1, 2, 3	No other specific measures identified. [EI20]
	General exposures (open systems) [CS16] PROC 4	No other specific measures identified. [El20]

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	Process sampling [CS2] PROC 8b	No other specific measures identified. [El20]
	Laboratory activities [CS36] PROC 15	No other specific measures identified. [El20]
	Bulk transfers [CS14] (open systems) [CS108] PROC 8b	No other specific measures identified. [EI20]
	Bulk transfers [CS14] (closed systems) [CS107] PROC 8b	No other specific measures identified. [El20]
	Equipment cleaning and maintenance [CS39] PROC 8a	No other specific measures identified. [El20]
	Material storage [CS67] PROC 1, 2	No other specific measures identified. [El20]
Section 2.2	Control of environment	al exposure
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].
	Amounts used	Fraction of EU tonnage used in region: 0.1
		Regional use tonnage (tonnes/year): 1.7E+4
		Fraction of regional tonnage used locally: 1
		Annual site tonnage (tonnes/year): 1.7E+4
		Maximum daily site tonnage (kg/day): 5.6E+4
	Frequency and duration of	Continuous release. [FD2].
	use	Emission days (days/year): 300
	Environmental factors not	Local freshwater dilution fraction: 10
	influenced by risk management	Local marine dilution fraction: 100
	Other operational conditions affecting environmental exposure	Release fraction to air from process (initial release prior to RMM): 1.0E-2
		Release fraction to wastewater from process (initial release prior to RMM): 3.0E-5
		Release fraction to soil from process (initial release prior to RMM): 0.0001
	Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used [TCS1].
	Technical onsite conditions and measures	Risk from environmental exposure is driven by Freshwater Sediment [TCR1b].
	to reduce or limit discharges, air emissions	Treat air emission to provide a typical removal efficiency of 90%.
	and releases to soil	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency \geq 0.0 $\%$
		If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0.0~\%$



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	Organizational measures to prevent / limit release from site	Prevent discharge of undissolved substance to or recover fro wastewater [OMS1].	m
		Do not apply industrial sludge to natural soils [OMS2].	
		Sludge should be incinerated, contained or reclaimed [OMS3].
	Conditions and measures	Not applicable as there is no release to wastewater [STP1].	
	related to municipal sewage treatment plant	Estimated substance removal from wastewater via domestic treatment 93.7 $\%$.	sewage
		Total efficiency of removal from wastewater after onsite and c (domestic treatment plant) RMMs 93.7 %.	offsite
		Maximum allowable site tonnage (MSafe) based on domestic treatment release 3.2E+6 kg per day.	sewage
		Assumed domestic sewage treatment plant flow 10 000 m ³ pc	er day.
	Conditions and measures related to external treatment of waste for disposal	During manufacturing no waste of the substance is generated	វ [ETW4].
	Conditions and measures related to external recovery of waste	During manufacturing no waste of the substance is generated	i [ERW2].
SECTION 3	EXPOSURE ESTIMATION		
Section 3.1	Health		
	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. [G21].		
Section 3.2	Environment		
	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2].		
SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO		RIO
Section 4.1	Health		
	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22].		t
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23].		
Section 4.2	Environment		
	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].		
	•		



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SECTION 1	EXPOSURE SCENAR	EXPOSURE SCENARIO TITLE	
Title	2. Distribution of Subst	ance – Industrial	
Use Descriptor	Sector(s) of Use	SU 3: Industrial uses	
		SU 8 : Manufacture of bulk, large scale chemicals (including petroleum products)	
		SU 9: Manufacture of fine chemicals	
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure.	
		PROC 2 : Use in closed, continuous process with occasional controlled exposure.	
		PROC 3 : Use in closed batch process (synthesis or formulation).	
		PROC 4 : Use in batch and other process (synthesis) where opportunity for exposure arises.	
		PROC 8a : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.	
		PROC 8b : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.	
		PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	
		PROC 15: Use as laboratory reagent	
	Environmental Release Categories	ERC 1: Manufacture of substances	
		ERC 2: Formulation of preparations	
		ERC 3: Formulation in materials	
		ERC 4 : Industrial use of processing aids in processes and products, not becoming part of articles	
		ERC 5: Industrial use resulting in inclusion into or onto a matrix	
		ERC 6a : Industrial use resulting in manufacture of another substance (use of intermediates)	
		ERC 6b: Industrial use of reactive processing aids	
		ERC 6c: Industrial use of monomers for manufacture of thermoplastics	
		ERC 6d : Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers	
		ERC 7: Industrial use of sub-stances in closed systems	
	Specific Environmental Release Category	ESVOC 1.1b.v1	
Processes, Tasks and Activities Covered	Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading, maintenance and associated laboratory activities.		
SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Section 2.1	Control of worker expo	sure	
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].	
characteristics	Concentration of substance in product	Up to 100% (unless stated).	
	Amount used	No limit.	



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	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated). [G2].
	Other operational	Assumes use at not > 20oC above ambient [G15].
	conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene is implemented. [G1].
Contributing	Specific Risk Managem	ent Measures and Operational Conditions
Scenarios	(only required controls to	demonstrate safe use listed)
	General exposures (closed systems) [CS15] PROC 1, 2, 3	No other specific measures identified. [EI20]
	General exposures (open systems) [CS16] PROC 4	No other specific measures identified. [EI20]
	Process sampling [CS2] PROC3	No other specific measures identified. [EI20]
	Laboratory activities [CS36] PROC 15	No other specific measures identified. [El20]
	Bulk transfers [CS14] (open systems) [CS108] PROC 8b	No other specific measures identified. [El20]
	Bulk transfers [CS14] (closed systems) [CS107] PROC 8b	No other specific measures identified. [El20]
	Drum and small package filling [CS6] PROC9	No other specific measures identified. [El20]
	Equipment cleaning and maintenance [CS39] PROC 8a	No other specific measures identified. [EI20]
	Material storage [CS67] PROC 1, 2	No other specific measures identified. [El20]
Section 2.2	Control of environment	al exposure
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].
	Amounts used	Fraction of EU tonnage used in region: 0.1
		Regional use tonnage (tonnes/year): 1.7E+4
		Fraction of regional tonnage used locally: 1
		Annual site tonnage (tonnes/year): 3.4E+0
		Maximum daily site tonnage (kg/day): 1.7E+2
	Frequency and duration of	Continuous release. [FD2].
	use	Emission days (days/year): 20
	Environmental factors not influenced by risk	Local freshwater dilution fraction: 10
	management	Local marine dilution fraction: 100
	Other operational	Release fraction to air from process (initial release prior to RMM: 1.0E-3
	conditions affecting environmental exposure	Release fraction to wastewater from process (initial release prior to RMM): 1.0E-6
		Release fraction to soil from process (initial release prior to RMM): 0.00001



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ID 10523 Technical conditions and Common practices vary across sites thus conservative process release estimates used [TCS1]. measures at process level (source) to prevent release Technical onsite Risk from environmental exposure is driven by Freshwater [TCR1a]. conditions and measures No wastewater treatment required [TCR6]. to reduce or limit discharges, air emissions Treat air emission to provide a typical removal efficiency of 90%. and releases to soil Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency ≥ 0.0 % If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of ≥ 0.0 % Organizational measures Prevent discharge of undissolved substance to or recover from to prevent / limit release wastewater [OMS1]. from site Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3]. Conditions and measures Not applicable as there is no release to wastewater [STP1]. related to municipal Estimated substance removal from wastewater via domestic sewage sewage treatment plant treatment 93.7 %. Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 %. Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 1.7E+5 kg per day. Assumed domestic sewage treatment plant flow 2 000 m³ per day. Conditions and measures External treatment and disposal of waste should comply with applicable related to external local and/or national regulations [ETW3]. treatment of waste for disposal Conditions and measures External recovery and recycling of waste should comply with applicable related to external local and/or national regulations [ERW1]. recovery of waste **SECTION 3 EXPOSURE ESTIMATION** Section 3.1 Health The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. [G21]. Section 3.2 **Environment** The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2]. **SECTION 4** GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO Section 4.1 Health Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22]. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23]. Section 4.2 **Environment** Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1].



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Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either
alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite
technologies, either alone or in combination [DSU3]. Further details on scaling and control techno-
logies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].

SECTION 1	EXPOSURE SCENAR	IO TITLE
Title	3. Formulation & (Re)packing of Substances and Mixtures – Industrial	
Use Descriptor	Sector(s) of Use	SU 3: Industrial uses
		SU 10 : Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure.
		PROC 2 : Use in closed, continuous process with occasional controlled exposure.
		PROC 3 : Use in closed batch process (synthesis or formulation).
		PROC 4 : Use in batch and other process (synthesis) where opportunity for exposure arises.
		PROC 5: Mixing or blending in batch processes for formulation of preparations* and articles (multistage and/or significant contact)
		PROC 8a : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
		PROC 8b : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
		PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
		PROC 14 : Production of preparations or articles by tabletting, compression, extrusion, pelletisation
		PROC 15: Use as laboratory reagent
	Environmental Release Categories	ERC 2: Formulation of prepara-tions
	Specific Environmental Release Category	ESVOC 2.2.v1
Processes, Tasks and Activities Covered	Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletization, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.	
SECTION 2	OPERATIONAL CON	DITIONS AND RISK MANAGEMENT MEASURES
Section 2.1	Control of worker exposure	
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].
characteristics	Concentration of substance in product	Up to 100% (unless stated).
	Amount used	No limit.
	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated). [G2].
	Other operational	Assumes use at not > 20oC above ambient [G15].
	conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene has been implemented [G1]



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Contributing	Specific Risk Managem	nent Measures and Operational Conditions	
Scenarios	(only required controls to demonstrate safe use listed)		
	General exposures (closed systems) [CS15] PROC 1, 2, 3	No other specific measures identified. [El20]	
	General exposures (open systems) [CS16] PROC 4	No other specific measures identified. [El20]	
	Batch processes at elevated temperatures [CS136]Operation is carried out at elevated temperature (> then 20°C above ambient temperature) [OC7] PROC3	No other specific measures identified. [EI20]	
	Process sampling [CS2] PROC3	No other specific measures identified. [El20]	
	Laboratory activities [CS36] PROC 15	No other specific measures identified. [El20]	
	Bulk transfers [CS14] PROC 8b	No other specific measures identified. [El20]	
	Mixing operations (open systems) [CS30] PROC5	No other specific measures identified. [El20]	
	Manual [CS34]Transfer from/pouring from containers [CS22] PROC8a	No other specific measures identified. [EI20]	
	Drum/batch transfers [CS8] PROC8b	No other specific measures identified. [El20]	
	Production or preparation or articles by tabletting, compression, extrusion or pelletisation [CS100] PROC14	No other specific measures identified. [El20]	
	Drum and small package filling [CS6] PROC9	No other specific measures identified. [EI20]	
	Equipment cleaning and maintenance [CS39] PROC 8a	No other specific measures identified. [El20]	
	Material storage [CS67] PROC 1, 2	No other specific measures identified. [El20]	
Section 2.2	Control of environmental exposure		
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].	
	Amounts used	Fraction of EU tonnage used in region: 0.1	
		Regional use tonnage (tonnes/year): 2.4E+3	
		Fraction of regional tonnage used locally: 1	
		Annual site tonnage (tonnes/year): 2.4E+3	
		Maximum daily site tonnage (kg/day): 7.8E+3	



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	The ECETOC TRA tool has [G21].	been used to estimate workplace exposures unless otherwise indicated.
Section 3.1	Health	
SECTION 3	EXPOSURE ESTIMAT	TION
	related to external recovery of waste	local and/or national regulations [ERW1].
	Conditions and measures	External recovery and recycling of waste should comply with applicable
	Conditions and measures related to external treatment of waste for	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].
		Assumed domestic sewage treatment plant flow 2 000 m ³ per day.
	related to municipal sewage treatment plant	Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 9.5E+5 kg per day.
		Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 %.
		Estimated substance removal from wastewater via domestic sewage treatment 93.7 %.
	Conditions and measures	Not applicable as there is no release to wastewater [STP1].
		Sludge should be incinerated, contained or reclaimed [OMS3].
	from site	Do not apply industrial sludge to natural soils [OMS2].
	Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recover from wastewater [OMS1].
		If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0.0~\%$
		Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency $\geq 0.0~\%$
	and releases to soil	Treat air emission to provide a typical removal efficiency of 0%.
	to reduce or limit discharges, air emissions	No wastewater treatment required [TCR6].
	Technical onsite conditions and measures	Risk from environmental exposure is driven by Freshwater Sediment [TCR1b].
	Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used [TCS1].
		Release fraction to soil from process (initial release prior to RMM): 0.0001
	environmental exposure	Release fraction to wastewater from process (initial release prior to RMM): 2.0E-5
	Other operational conditions affecting	Release fraction to air from process (after typical onsite RMMs, consistent with EU Solvent Emissions Directive requirements): 1.0E-2
	influenced by risk management	Local marine dilution fraction: 100
	Environmental factors not	Local freshwater dilution fraction: 10
		Emission days (days/year): 300
	Frequency and duration of	Continuous release. [FD2].
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Section 3.2	Environment	
	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2].	
SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1	Health	
	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22].	
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23].	
Section 4.2 Environment		
	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].	

SECTION 1	EXPOSURE SCENARIO TITLE	
Title	4. Uses in Coatings – Industrial	
Use Descriptor	Sector(s) of Use	SU 3: Industrial uses
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure.
		PROC 2 : Use in closed, continuous process with occasional controlled exposure.
		PROC 3: Use in closed batch process (synthesis or formulation).
		PROC 4 : Use in batch and other process (synthesis) where opportunity for exposure arises.
		PROC 5: Mixing or blending in batch processes for formulation of preparations* and articles (multistage and/or significant contact)
		PROC 7: Industrial spraying
		PROC 8a : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
		PROC 8b : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
		PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
		PROC 10: Roller application or brushing
		PROC 13: Treatment of articles by dipping and pouring
		PROC 14 : Production of preparations or articles by tabletting, compression, extrusion, pelletisation
		PROC 15: Use as laboratory reagent
	Environmental Release Categories	ERC 4 : Industrial use of processing aids in processes and products, not becoming part of articles
	Specific Environmental Release Category	ESVOC 4.3a.v1



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Processes, Tasks and Activities Covered	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.	
SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of worker expo	sure
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].
characteristics	Concentration of substance in product	Up to 100% (unless stated).
	Amount used	No limit.
	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated). [G2].
	Other operational	Assumes use at not > 20oC above ambient [G15].
	conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene has been implemented [G1]
Contributing	Specific Risk Managem	ent Measures and Operational Conditions
Scenarios	(only required controls to	demonstrate safe use listed)
	General exposures (closed systems) [CS15] PROC 1	No other specific measures identified. [EI20]
	General exposures (closed systems) [CS15] with sample collection [CS56] Use in contained systems [CS38] PROC2	No other specific measures identified. [EI20]
	Film formation - force drying, stoving and other technologies [CS99] Operation is carried out at elevated temperature (> then 20°C above ambient temperature) [OC7] PROC2	No other specific measures identified. [EI20]
	Mixing operations (closed systems) [CS29]General exposures (closed systems) [CS15] PROC3	No other specific measures identified. [EI20]
	Film formation - air drying [CS95] PROC4	No other specific measures identified. [EI20]
	Preparation of material for application [CS96] Mixing operations (open systems) [CS30] PROC5	No other specific measures identified. [EI20]
	Spraying (automatic/ robotic) [CS97] PROC7	Provide a good standard of controlled ventilation (10 to 15 air changes per hour). [E40]
	Manual [CS34]Spraying [CS10] PROC7	Provide a good standard of controlled ventilation (10 to 15 air changes per hour). [E40]
	Material transfers [CS3] PROC8a	No other specific measures identified. [EI20]



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	Material transfers [CS3] PROC8b	No other specific measures identified. [El20]	
	Roller, spreader, flow application [CS98] PROC10	No other specific measures identified. [El20]	
	Dipping, immersion and pouring [CS4] PROC13	No other specific measures identified. [El20]	
	Laboratory activities [CS36] PROC 15	No other specific measures identified. [El20]	
	Material transfers [CS3] Drum/batch transfers [CS8] Transfer from/ pouring from containers [CS22] PROC9	No other specific measures identified. [EI20]	
	Production or preparation or articles by tabletting, compression, extrusion or pelletisation [CS100] PROC14	No other specific measures identified. [El20]	
	Equipment cleaning and maintenance [CS39] PROC 8a	No other specific measures identified. [El20]	
	Material storage [CS67] PROC 1	No other specific measures identified. [El20]	
Section 2.2	Control of environment	al exposure	
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic [PrC4a].	C.
	Amounts used	Fraction of EU tonnage used in region: 0.1	
		Regional use tonnage (tonnes/year): 4.3E+3	
		Fraction of regional tonnage used locally: 1	
		Annual site tonnage (tonnes/year): 4.3E+3	
		Maximum daily site tonnage (kg/day): 4.3E+3	
	Frequency and duration of	Continuous release. [FD2].	
	use	Emission days (days/year): 100	
	Environmental factors not influenced by risk management	Local freshwater dilution fraction: 10	
		Local marine dilution fraction: 100	
	Other operational	Release fraction to air from process (initial release prior to RMM)): 0.98
	conditions affecting environmental exposure	Release fraction to wastewater from process (initial release prior RMM): 7.0E-5	· to
		Release fraction to soil from process (initial release prior to RMM	1): 0
	Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process restimates used [TCS1].	elease



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	Technical onsite conditions and measures to reduce or limit	Risk from environmental exposure is driven by Freshwa [TCR1b]. If discharging to domestic sewage treatment pwastewater treatment required [TCR10].	
	discharges, air emissions and releases to soil	Treat air emission to provide a typical removal efficiency	y of 90%.
		Treat onsite wastewater (prior to receiving water dischathe required removal efficiency ≥ 59.8 %	rge) to provide
		If discharging to domestic sewage treatment plant, provonsite wastewater removal efficiency of \geq 0.0 %	ide the required
	Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recovusatewater [OMS1].	er from
	from site	Do not apply industrial sludge to natural soils [OMS2].	
		Sludge should be incinerated, contained or reclaimed [O	DMS3].
	Conditions and measures	Not applicable as there is no release to wastewater [ST	P1].
	related to municipal sewage treatment plant	Estimated substance removal from wastewater via dom treatment 93.7 $\%.$	estic sewage
		Total efficiency of removal from wastewater after onsite (domestic treatment plant) RMMs 93.7 $\%$.	and offsite
		Maximum allowable site tonnage (MSafe) based on dor treatment release 2.7E+5 kg per day.	nestic sewage
		Assumed domestic sewage treatment plant flow 2 000 r	n³ per day.
	Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply local and/or national regulations [ETW3].	/ with applicable
	Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply local and/or national regulations [ERW1].	with applicable
SECTION 3	EXPOSURE ESTIMATION		
Section 3.1	Health		
	ECETOC TRA has been used to estimate workplace exposures unless otherwise indicated [G21].		
Section 3.2	Environment		
	The Hydrocarbon Block Mer Petrorisk model. [EE2].	thod has been used to calculate environmental exposure	with the
SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO		
Section 4.1	Health		
	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22].		ement
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23].		
Section 4.2	Environment		
	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].		
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SECTION 1	EXPOSURE SCENARIO TITLE		
Title	5. Uses in Coatings – Professional		
Use Descriptor	Sector(s) of Use	SU 22: Professional uses:	
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure.	
		PROC 2 : Use in closed, continuous process with occasional controlled exposure.	
		PROC 3 : Use in closed batch process (synthesis or formulation).	
		PROC 4 : Use in batch and other process (synthesis) where opportunity for exposure arises.	
		PROC 5 : Mixing or blending in batch processes for formulation of preparations* and articles (multistage and/or significant contact)	
		PROC 8a : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.	
		PROC 8b : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.	
		PROC 10: Roller application or brushing	
		PROC11: Non industrial spraying	
		PROC 13: Treatment of articles by dipping and pouring	
		PROC 15: Use as laboratory reagent	
		PROC 19: Hand-mixing with intimate contact and only PPE available	
	Environmental Release Categories	ERC 8a : Wide dispersive indoor use of processing aids in open systems	
		ERC 8d : Wide dispersive outdoor use of processing aids in open systems	
	Specific Environmental Release Category	ESVOC 8.3b.v1	
Processes, Tasks and Activities Covered	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods, and film formation) and equipment cleaning, maintenance and associated laboratory activities.		
SECTION 2	OPERATIONAL CON	DITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of worker expo	sure	
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].	
characteristics	Concentration of substance in product	Up to 100% (unless stated).	
	Amount used	No limit.	
	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated). [G2].	
	Other operational	Assumes use at not > 20oC above ambient [G15].	
	conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene has been implemented [G1]	



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Contributing			
Scenarios	(only required controls to demonstrate safe use listed)		
	General exposures (closed systems) [CS15] PROC 1	Handle substance within a closed system [E47]	
	Filling / preparation of equipment from drums or containers. [CS45] Use in contained systems [CS38] PROC2	Handle substance within a closed system [E47]	
	General exposures (closed systems) [CS15] Use in contained systems [CS38] PROC2	Handle substance within a closed system [E47]	
	Preparation of material for application [CS96] Use in contained batch processes [CS37] PROC3	No other specific measures identified. [EI20]	
	Film formation - air drying [CS95] Outdoor [OC9] PROC4	No other specific measures identified. [EI20]	
	Film formation - air drying [CS95] Indoor [OC8] PROC4	No other specific measures identified. [EI20]	
	Preparation of material for application [CS96] Indoor [OC8] PROC5	No other specific measures identified. [El20]	
	Preparation of material for application [CS96] Outdoor [OC9] PROC5	No other specific measures identified. [EI20]	
	Material transfers [CS3] Drum/batch transfers [CS8] PROC8a	No other specific measures identified. [El20]	
	Material transfers [CS3] Drum/batch transfers [CS8]Dedicated facility [CS81] PROC8b	No other specific measures identified. [El20]	
	Roller, spreader, flow application [CS98] Indoor [OC8] PROC10	No other specific measures identified. [EI20]	
	Roller, spreader, flow application [CS98] Outdoor [OC9] PROC10	No other specific measures identified. [El20]	
	Manual [CS34] Spraying [CS10] Indoor [OC8]	Provide a good standard of controlled ventilation (10 to 15 air changes per hour). [E40]	
	PROC11	Wear a respirator conforming to EN140 with Type A filter or better. [PPE22]	
	Manual [CS34] Spraying [CS10] Outdoor [OC9]	Ensure operation is undertaken outdoors [E69]Avoid carrying out activities involving exposure for more than 4 hours. [OC28]	
	PROC11	Ensure operation is undertaken outdoors [E69]Wear a respirator conforming to EN140 with Type A filter or better. [PPE22]	



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	Dipping, immersion and pouring [CS4] Indoor [OC8] PROC13	Avoid manual contact with wet work pieces [EI17]
	Dipping, immersion and pouring [CS4] Outdoor [OC9] PROC13	Avoid manual contact with wet work pieces [EI17]
	Laboratory activities [CS36] PROC15	No other specific measures identified. [EI20]
	Hand application – finger paints, pastels, adhesives [CS72] Indoor [OC8] PROC19	No other specific measures identified. [El20]
	Hand application – finger paints, pastels, adhesives [CS72] Outdoor [OC9] PROC19	No other specific measures identified. [El20]
Section 2.2	Control of environment	al exposure
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].
	Amounts used	Fraction of EU tonnage used in region: 0.1
		Regional use tonnage (tonnes/year): 1.7E+3
		Fraction of regional tonnage used locally: 1
		Annual site tonnage (tonnes/year): 8.4E-1
		Maximum daily site tonnage (kg/day): 2.3E+0
	Frequency and duration of use	Continuous release. [FD2].
	use	Emission days (days/year): 365
	Environmental factors not influenced by risk management	Local freshwater dilution fraction: 10
		Local marine dilution fraction: 100
	Other operational conditions affecting environmental exposure	Release fraction to air from process (initial release prior to RMM): 0.98
		Release fraction to wastewater from process (initial release prior to RMM): 0.01
		Release fraction to soil from process (initial release prior to RMM): 0.01
	Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used [TCS1].
	Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Risk from environmental exposure is driven by Agricultural Soil [TCR1f] No wastewater treatment required [TCR6].
		Treat air emission to provide a typical removal efficiency of N/A.
		Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency \geq 0.0 $\%$
		If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of \geq 0.0 $\%$
	Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recover from wastewater [OMS1].
	from site	Do not apply industrial sludge to natural soils [OMS2].
		Sludge should be incinerated, contained or reclaimed [OMS3].



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	Conditions and measures	Not applicable as there is no release to wastewater [STP1].
	related to municipal sewage treatment plant	Estimated substance removal from wastewater via domestic sewage treatment 93.7 $\%.$
		Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 $\%$.
		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 1.9E+3 kg per day.
		Assumed domestic sewage treatment plant flow 2 000 m³ per day.
	Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].
	Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1].
SECTION 3	EXPOSURE ESTIMATION	
Section 3.1	Health	
	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. [G21].	
Section 3.2	Environment	
	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2].	
SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1	Health	
	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22].	
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23].	
Section 4.2	Environment	
	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].	

SECTION 1	EXPOSURE SCENARIO TITLE	
Title	6. Uses in Coatings - Consumer	
Use Descriptor	Sector(s) of Use	SU 21: Consumer uses
	Products Categories	PC 1: Adhesives, sealants
		PC 4: Anti-Freeze and de-icing products
		PC 8: Biocidal products (e.g. Disinfectants, pest control)
		PC 9a: Coatings and paints, thinners, paint removers
		PC 9b: Fillers, putties, plasters, modelling clay



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PC 9c: Finger paints PC 15: Non-metal-surface treatment products PC 18: Ink and toners PC 23: Leather tanning, dye, finishing, impregnation and care products PC 24: Lubricants, greases, release products PC 31: Polishes and wax blends PC 34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids. **Environmental Release** ERC 8a: Wide dispersive indoor use of processing aids in open Categories systems. ERC 8d: Wide dispersive outdoor use of processing aids in open systems. Specific Environmental ESVOC 8.3c.v1 Release Category Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including Processes, product transfer and preparation, application by brush, spray by hand or similar methods) and Tasks and equipment cleaning. **Activities** Covered OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES **SECTION 2** Section 2.1 Control of consumer exposure Product Physical form of product Liquid, vapour pressure > 10 Pa STP [OC15] characteristics Vapour Pressure (Pa) 231 Concentration of Unless otherwise stated, cover concentrations up to 100 %. [ConsOC1]. substance in product Unless otherwise stated, covers use amounts up to 13 800 g Amounts used [ConsOC2]; covers skin contact area up to 858 cm² [ConsOC5] Unless otherwise stated, covers use frequency up to 365 days per year Frequency and duration of use/exposure [ConsOC3];Unless otherwise stated, covers use frequency up to 1 times per day [ConsOC4]; covers exposure up to 6 hours per event [ConsOC14] Other operational Unless otherwise stated assumes use at ambient temperatures conditions affecting [ConsOC15]; assumes use in a 20 m³ room [ConsOC11]; assumes use exposure with typical ventilation [ConsOC8]. **Product** Specific Risk Management Measures and Operating Conditions Category (only required controls to demonstrate safe use listed) PC1: Adhesives, Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up sealants - Glues, hobby use to 35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 9g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 4.00hr/event [ConsOC14]. No specific RMMs identified beyond those OCs stated. PC1: Adhesives. Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 1 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 110.00 sealants - Glues. DIY-use (carpet cm2 [ConsOC5]; for each use event, covers use amounts up to 6390g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use glue, tile glue, wood parquet glue) event, covers exposure up to 6.00hr/event [ConsOC14]. No specific RMMs identified beyond those OCs stated.



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PC1: Adhesives, sealants - Glue from spray

Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 6 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 85.05g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 4.00hr/event [ConsOC14].

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No specific RMMs identified beyond those OCs stated.

PC1: Adhesives, sealants -Sealants

Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 75g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 1.00hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC4_n: Anti-freeze and de-icing products - Washing car window

Unless otherwise stated, covers concentrations up to 1% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; for each use event, covers use amounts up to 0.5g [ConsOC2]; Covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3 ConsOC11]; for each use event, covers exposure up to 0.02hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC4_n: Anti-freeze and de-icing products - Pouring into radiator

Unless otherwise stated, covers concentrations up to 10% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 428.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 2000g [ConsOC2]; Covers use in a one car garage (34m3) under typcial ventilation [ConsOC10]; covers use in room size of 34m3 [ConsOC11]; for each use event, covers exposure up to 0.17hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC4_n: Anti-freeze and de-icing products - Lock de-icer

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 214.40 cm2 [ConsOC5]; for each use event, covers use amounts up to 4g [ConsOC2]; Covers use in a one car garage (34m3) under typcial ventilation [ConsOC10]; covers use in room size of 34m3 [ConsOC11]; for each use event, covers exposure up to 0.25hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC8_n: Biocidal products (excipient use only for solvent products) - Laundry and dish washing products Unless otherwise stated, covers concentrations up to 5% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 15g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 0.50hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC8_n: Biocidal products (excipient use only for solvent products) - Cleaners, liquids (all purpose cleaners; sanitary products; floor, glass, carpet and metal cleaners)

Unless otherwise stated, covers concentrations up to 5% [ConsOC1]; covers use up to 128 days/year[ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 27g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 0.33hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC8_n: Biocidal products (excipient use only for solvent products) -Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) Unless otherwise stated, covers concentrations up to 15% [ConsOC1]; covers use up to 128 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 428.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 35g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 0.17hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.



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PC9a: Coatings, paints, thinners, paint removers - Waterborne latex

wall paint

Unless otherwise stated, covers concentrations up to 1.5% [ConsOC1]; covers use up to 4 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 428.75 cm2 [ConsOC5]; for each use event, covers use amounts up to 2760g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 2.20hr/event [ConsOC14].

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No specific RMMs identified beyond those OCs stated.

PC9a: Coatings, paints, thinners, paint removers -Solvent rich, high solid, water borne paint Unless otherwise stated, covers concentrations up to 27.5% [ConsOC1]; covers use up to 6 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 428.75 cm2 [ConsOC5]; for each use event, covers use amounts up to 744g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 2.20hr/event [ConsOC14].

PC9a: Coatings, paints, thinners, paint removers -Aerosol spray can No specific RMMs identified beyond those OCs stated.

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 2 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; for each use event, covers use amounts up to 215g [ConsOC2]; Covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3 [ConsOC11]; for each use event, covers exposure up to 0.33hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC9a: Coatings, paints, thinners, paint removers -Removers (paint-, glue-, wall paper-, sealant-remover) Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 3 days/year[ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 491g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 2.00hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC9b: Fillers, putties, plasters, modeling clay - Fillers and putty

Unless otherwise stated, covers concentrations up to 2% [ConsOC1]; covers use up to 12 days/year [ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 85g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 4.00hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC9b: Fillers, putties, plasters, modeling clay -Plasters and floor equalizers Unless otherwise stated, covers concentrations up to 2% [ConsOC1]; covers use up to 12 days/year [ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 13800g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 2.00hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC9b: Fillers, putties, plasters, modeling clay - Modelling clay

Unless otherwise stated, covers concentrations up to 1% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 254.40 cm2 [ConsOC5]; for each use event, assumes swallowed amount of 1g [ConsOC13].

No specific RMMs identified beyond those OCs stated.

PC9c: Finger paints - Finger paints

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 254.40 cm2 [ConsOC5]; for each use event, assumes swallowed amount of 1.35g [ConsOC13].

Avoid using at a product concentration greater than 5% [ConsRMM1].

PC15_n: Nonmetal surface treatment products - Waterborne latex wall paint Unless otherwise stated, covers concentrations up to 1.5% [ConsOC1]; covers use up to 4 days/year[ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 428.75 cm2 [ConsOC5]; for each use event, covers use amounts up to 2760g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 2.20hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.



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PC15_n: Nonmetal surface treatment products - Solvent rich, high solid, water borne paint

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Unless otherwise stated, covers concentrations up to 27.5% [ConsOC1]; covers use up to 6 days/ year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 428.75 cm2 [ConsOC5]; for each use event, covers use amounts up to 744g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 2.20hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC15_n: Nonmetal surface treatment products - Aerosol spray can Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 2 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; for each use event, covers use amounts up to 215g [ConsOC2]; Covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3 [ConsOC11]; for each use event, covers exposure up to 0.33hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC15_n: Nonmetal surface treatment products - Removers (paint-, glue-, wall paper-, sealant-remover) Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 3 days/year [ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 491g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 2.00hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC18_n: Ink and toners - Inks and toners.

Unless otherwise stated, covers concentrations up to 10% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 71.40 cm2 [ConsOC5]; for each use event, covers use amounts up to 40g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 2.20hr/event[ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC23_n: Leather tanning, dye, finishing, impregnation and care products -Polishes, wax / cream (floor, furniture, shoes) Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 29 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 430.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 56g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 1.23hr/event[ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC23_n: Leather tanning, dye, finishing, impregnation and care products -Polishes, spray (furniture, shoes) Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 8 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 430.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 56g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.33hr/event[ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC24: Lubricants, greases, and release products - Liquids

Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 4 days/year[ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 468.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 2200g [ConsOC2]; Covers use in a one car garage (34m3) under typcial ventilation [ConsOC10]; covers use in room size of 34m3[ConsOC11]; for each use event, covers exposure up to 0.17hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC24: Lubricants, greases, and release products - Pastes

Unless otherwise stated, covers concentrations up to 20% [ConsOC1]; covers use up to 10 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 468.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 34g [ConsOC2]; for each use event, covers exposure up to 4.00hr/event[ConsOC14].

No specific RMMs identified beyond those OCs stated.



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PC24: Lubricants, greases, and release products - Sprays	Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 6 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 428.75 cm2 [ConsOC5]; for each use event, covers use amounts up to 73g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 0.17hr/event [ConsOC14].	
	No specific RMMs identified	beyond those OCs stated.
PC31: Polishes and wax blends - Polishes, wax / cream (floor, furniture, shoes)	Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 29 days/year[ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 430.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 142g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 1.23hr/event [ConsOC14].	
	No specific RMMs identified	beyond those OCs stated.
PC31: Polishes and wax blends - Polishes, spray (furniture, shoes)	Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 8 days/year ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 430.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 35g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 0.33hr/event [ConsOC14].	
	No specific RMMs identified	beyond those OCs stated.
PC34_n: Textile dyes, finishing and impregnating products	Unless otherwise stated, covers concentrations up to 10% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 115g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 1.00hr/event [ConsOC14].	
	No specific RMMs identified	beyond those OCs stated.
Section 2.2	Control of environmental exposure	
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].
	Amounts used	Fraction of EU tonnage used in region: 0.1
		Regional use tonnage (tonnes/year): 4.4E+3
		Fraction of regional tonnage used locally: 0.0005
		Annual site tonnage (tonnes/year): .2E+0
		Maximum daily site tonnage (kg/day): 6.0E+0
	Frequency and duration of	Continuous release. [FD2].
	use	Emission days (days/year): 365
	Environmental factors not	Local freshwater dilution fraction: 10
	influenced by risk management	Local marine dilution fraction: 100
	Other given operational	
1		Release fraction to air from process (initial release prior to RMM): 0.985
	conditions affecting environmental exposure	Release fraction to air from process (initial release prior to RMM): 0.985 Release fraction to wastewater from process (initial release prior to RMM): 0.01
	conditions affecting	Release fraction to wastewater from process (initial release prior to
	conditions affecting environmental exposure Conditions and measures	Release fraction to wastewater from process (initial release prior to RMM): 0.01 Release fraction to soil from process (initial release prior to RMM):
	conditions affecting environmental exposure	Release fraction to wastewater from process (initial release prior to RMM): 0.01 Release fraction to soil from process (initial release prior to RMM): 0.005
	conditions affecting environmental exposure Conditions and measures related to municipal	Release fraction to wastewater from process (initial release prior to RMM): 0.01 Release fraction to soil from process (initial release prior to RMM): 0.005 Not applicable as there is no release to wastewater [STP1]. Estimated substance removal from wastewater via domestic sewage

Assumed domestic sewage treatment plant flow (m³/day): 2000



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	Conditions and measures related to external treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]. treatment of waste for disposal	
	Conditions and measures related to external recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1].	
SECTION 3	EXPOSURE ESTIMATION	
Section 3.1	Health	
	The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated. G30.	
Section 3.2	Environment	
	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2].	
SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1	Health	
	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. G22.	
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23.	
Section 4.2	Environment	
	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].	

SECTION 1	EXPOSURE SCENARIO TITLE	
Title	7. Use in Cleaning Agents – Industrial	
Use Descriptor	Sector(s) of Use	SU 3: Industrial uses
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure.
		PROC 2 : Use in closed, continuous process with occasional controlled exposure.
		PROC 3: Use in closed batch process (synthesis or formulation).
		PROC 4 : Use in batch and other process (synthesis) where opportunity for exposure arises.
		PROC 7: Industrial spraying
		PROC 8a : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
		PROC 8b : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
		PROC 10: Roller application or brushing
		PROC 13: Treatment of articles by dipping and pouring
	Environmental Release Categories	ERC 4 : Industrial use of processing aids in processes and products, not becoming part of articles



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	Specific Environmental Release Category	ESVOC 4.4a.v1	
Processes, Tasks and Activities Covered	Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers. Exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.		
SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Section 2.1	Control of worker exposure		
Product characteristics	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].	
	Concentration of substance in product	Up to 100% (unless stated).	
	Amount used	No limit.	
	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated). [G2].	
	Other operational conditions affecting worker exposure	Assumes use at not > 20oC above ambient [G15].	
		Assumes a good basic standard of occupational hygiene has been implemented [G1]	
Contributing	Specific Risk Management Measures and Operational Conditions		
Scenarios	(only required controls to demonstrate safe use listed)		
	Bulk transfers [CS14] PROC8a	No other specific measures identified. [EI20]	
	Automated process with (semi) closed systems. [CS93]Use in contained systems[CS38] PROC2, 3	No other specific measures identified. [EI20]	
	Application of cleaning products in closed systems [CS101] PROC2	No other specific measures identified. [EI20]	
	Filling / preparation of equipment from drums or containers. [CS45] PROC8b	No other specific measures identified. [EI20]	
	Use in contained batch processes [CS37] PROC4	No other specific measures identified. [EI20]	
	Degreasing small objects in cleaning station [CS41] PROC13	No other specific measures identified. [EI20]	
	Cleaning with low- pressure washers [CS42] PROC10	No other specific measures identified. [EI20]	
	Cleaning with high pressure washers [CS44] PROC7	Provide a good standard of controlled ventilation (10 to 15 air changes per hour). [E40]	
		Wear a respirator conforming to EN140 with Type A filter or better. [PPE22]	
	Manual [CS34] Surfaces [CS48] Cleaning [CS47] PROC10	No other specific measures identified. [EI20]	



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	Material storage [CS67] PROC1	No other specific measures identified. [El20]
Section 2.2	Control of environment	al exposure
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].
	Amounts used	Fraction of EU tonnage used in region: 0.1
		Regional use tonnage (tonnes/year): 1.4E+3
		Fraction of regional tonnage used locally: 1
		Annual site tonnage (tonnes/year): 1.0E+2
		Maximum daily site tonnage (kg/day): 5.0E+3
	Frequency and duration of	Continuous release. [FD2].
	use	Emission days (days/year): 20
	Environmental factors not influenced by risk management	Local freshwater dilution fraction: 10
		Local marine dilution fraction: 100
	Other operational conditions affecting environmental exposure	Release fraction to air from process (initial release prior to RMM): 1.0
		Release fraction to wastewater from process (initial release prior to RMM): 3.0E-7
		Release fraction to soil from process (initial release prior to RMM): 0
	Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used [TCS1].
	Technical onsite conditions and measures	Risk from environmental exposure is driven byFreshwater [TCR1a] No wastewater treatment required [TCR6].
	to reduce or limit discharges, air emissions	Treat air emission to provide a typical removal efficiency of 70%.
	and releases to soil	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency $\geq 0.0~\%$
		If discharging to domestic sewage treatment plant, provide the require onsite wastewater removal efficiency of $\geq 0.0~\%$
	Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recover from wastewater [OMS1].
	from site	Do not apply industrial sludge to natural soils [OMS2].
		Sludge should be incinerated, contained or reclaimed [OMS3].
	Conditions and measures	Not applicable as there is no release to wastewater [STP1].
	related to municipal sewage treatment plant	Estimated substance removal from wastewater via domestic sewage treatment 93.7 $\%.$
		Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 %.
		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 4.6E+6 kg per day.
		Assumed domestic sewage treatment plant flow 2 000 m³ per day.
	Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].



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	Conditions and measures related to external recovery of waste should comply with applicable local and/or national regulations [ERW1].		
SECTION 3	EXPOSURE ESTIMATION		
Section 3.1	Health		
	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. [G21].		
Section 3.2	Environment		
	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2].		
SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO		
0 11 11	Health		
Section 4.1	Health		
Section 4.1	Health Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22].		
Section 4.1	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management		
Section 4.1 Section 4.2	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22]. Where other Risk Management Measures/Operational Conditions are adopted, then users should		

SECTION 1	EXPOSURE SCENARIO TITLE	
Title	8. Use in Cleaning Agents – Professional	
Use Descriptor	Sector(s) of Use	SU 22: Professional uses:
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure.
		PROC 2 : Use in closed, continuous process with occasional controlled exposure.
		PROC 3: Use in closed batch process (synthesis or formulation).
		PROC 4 : Use in batch and other process (synthesis) where opportunity for exposure arises.
		PROC 8a : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
		PROC 8b : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
		PROC 10: Roller application or brushing
		PROC11: Non industrial spraying
		PROC 13: Treatment of articles by dipping and pouring
	Environmental Release Categories	ERC 8a: Wide dispersive indoor use of processing aids in open systems
		ERC 8d: Wide dispersive outdoor use of processing aids in open systems



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	Specific Environmental Release Category	ESVOC 8.4b.v1
Processes, Tasks and Activities Covered	containers; and exposures of	nent of cleaning products including pouring/unloading from drums or during mixing/diluting in the preparatory phase and cleaning activities g, dipping, wiping automated and by hand).
SECTION 2	OPERATIONAL CON	DITIONS AND RISK MANAGEMENT MEASURES
Section 2.1	Control of worker expos	sure
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].
characteristics	Concentration of substance in product	Up to 100% (unless stated).
	Amount used	No limit.
	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated). [G2].
	Other operational	Assumes use at not > 20oC above ambient [G15].
	conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene has been implemented [G1]
Contributing	Specific Risk Managem	ent Measures and Operational Conditions
Scenarios	(only required controls to	demonstrate safe use listed)
	Filling / preparation of equipment from drums or containers. [CS45] PROC8b	No other specific measures identified. [EI20]
	Automated process with (semi) closed systems. [CS93] Use in contained systems [CS38] PROC2	No other specific measures identified. [El20]
	Automated process with (semi) closed systems. [CS93] Drum/batch transfers [CS8]Use in contained systems [CS38] PROC3	No other specific measures identified. [El20]
	Semi Automated process. (e.g.: Semiautomatic application of floor care and maintenance products) [CS76] PROC4	No other specific measures identified. [El20]
	Filling / preparation of equipment from drums or containers. [CS45] PROC8a	No other specific measures identified. [El20]
	Manual [CS34] Surfaces [CS48] Cleaning [CS47] Dipping, immersion and pouring [CS4] PROC13	No other specific measures identified. [El20]
	Cleaning with low- pressure washers [CS42] Rolling, Brushing [CS51] no spraying [CS60] PROC10	No other specific measures identified. [El20]



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Date: 7.11.2014 Previous date: 10.8.2012 ID 10523 Cleaning with high Provide a good standard of controlled ventilation (10 to 15 air changes pressure washers [CS44] per hour). [E40] Spraying [CS10]Indoor Wear a respirator conforming to EN140 with Type A filter or better. [OC8] PROC11 [PPE22] Cleaning with high Ensure operation is undertaken outdoors [E69]Limit the substance pressure washers [CS44] content in the product to 25 % [OC18] Spraying [CS10] Outdoor Wear a respirator conforming to EN140 with Type A filter or better. [OC9] PROC11 [PPE22] Manual [CS34] Surfaces No other specific measures identified. [EI20] [CS48] Cleaning [CS47] Spraying [CS10] PROC10 Ad hoc manual application No other specific measures identified. [EI20] via trigger sprays, dipping, etc. [CS27] Rolling, Brushing [CS51] PROC10 Application of cleaning No other specific measures identified. [El20] products in closed systems [CS101] Outdoor [OC9] PROC4 Cleaning of medical No other specific measures identified. [EI20] devices [CS74] PROC4 Material storage [CS67] No other specific measures identified. [EI20] PROC1 Section 2.2 Control of environmental exposure Product characteristics Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a] Amounts used Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 3.4E+2 Fraction of regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 1.7E-1 Maximum daily site tonnage (kg/day): 4.7E-1 Frequency and duration of Continuous release. [FD2]. Emission days (days/year): 365 Environmental factors not Local freshwater dilution fraction: 10 influenced by risk Local marine dilution fraction: 100 management Other operational Release fraction to air from process (initial release prior to RMM): 0.02 conditions affecting Release fraction to wastewater from process (initial release prior to environmental exposure RMM): 0.000001 Release fraction to soil from process (initial release prior to RMM): 0 Technical conditions and Common practices vary across sites thus conservative process release measures at process level estimates used [TCS1]. (source) to prevent release



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	Technical onsite conditions and measures	Risk from environmental exposure is driven by Freshwater [TCR1a] No wastewater treatment required [TCR6].
	to reduce or limit discharges, air emissions	Treat air emission to provide a typical removal efficiency of N/A.
	and releases to soil	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency \geq 0.0 $\%$
		If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0.0~\%$
	Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recover from wastewater [OMS1].
	from site	Do not apply industrial sludge to natural soils [OMS2].
		Sludge should be incinerated, contained or reclaimed [OMS3].
	Conditions and measures	Not applicable as there is no release to wastewater [STP1].
	related to municipal sewage treatment plant	Estimated substance removal from wastewater via domestic sewage treatment 93.7 $\%.$
		Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 %.
		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 4.7E+2 kg per day.
		Assumed domestic sewage treatment plant flow 2 000 m³ per day.
	Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].
	Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW3].
SECTION 3	EXPOSURE ESTIMAT	TION
Section 3.1	Health	
	The ECETOC TRA tool has [G21].	been used to estimate workplace exposures unless otherwise indicated.
Section 3.2	Environment	
	The Hydrocarbon Block Mer Petrorisk model. [EE2].	thod has been used to calculate environmental exposure with the
SECTION 4	GUIDANCE TO CHEC	K COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1	Health	
		t expected to exceed the DN(M)EL when the Risk Management ditions outlined in Section 2 are implemented. [G22].
		nent Measures/Operational Conditions are adopted, then users should ged to at least equivalent levels. [G23].
Section 4.2	Environment	
	scaling may be necessary to Required removal efficiency alone or in combination [DS technologies, either alone o	med operating conditions which may not be applicable to all sites; thus, or define appropriate site-specific risk management measures [DSU1]. It for wastewater can be achieved using onsite/offsite technologies, either U2]. Required removal efficiency for air can be achieved using onsite in combination [DSU3]. Further details on scaling and control in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html)



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SECTION 1	EXPOSURE SCENAR	IO TITLE
Title	9. Use in Cleaning Agents – Consumer	
Use Descriptor	Sector(s) of Use	SU 21: Consumer uses
	Products Categories	PC 3: Air care products
		PC 4: Anti-Freeze and de-icing products
		PC 8: Biocidal products (e.g. Disinfectants, pest control)
		PC 9a: Coatings and paints, thinners, paint removers
		PC 9b: Fillers, putties, plasters, modelling clay
		PC 9c: Finger paints
		PC 24: Lubricants, greases, release products
		PC 35: Washing and cleaning products (including solvent based products)
		PC 38: Welding and soldering products (with flux coatings or flux cores.), flux products
	Environmental Release Categories	ERC 8a: Wide dispersive indoor use of processing aids in open systems.
		ERC 8d : Wide dispersive outdoor use of processing aids in open systems.
	Specific Environmental Release Category	ESVOC 8.4c.v1
Processes, Tasks and Activities Covered	Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products.	
SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of consumer ex	posure
Product	Physical form of product	Liquid, vapour pressure > 10 Pa STP [OC15]
characteristics	Vapour Pressure (Pa)	231
	Concentration of substance in product	Unless otherwise stated, cover concentrations up to 100 %. [ConsOC1].
	Amounts used	Unless otherwise stated, covers use amounts up to 13 800 g [ConsOC2]; covers skin contact area up to 857.5 cm² [ConsOC5]
	Frequency and duration of use/exposure	Unless otherwise stated, covers use frequency up to 365 days per year [ConsOC3]; Unless otherwise stated, covers use frequency up to 4 times per day [ConsOC4]; covers exposure up to 8 hours per event [ConsOC14]
	Other operational conditions affecting exposure	Unless otherwise stated assumes use at ambient temperatures [ConsOC15]; assumes use in a 20 m³ room [ConsOC11]; assumes use with typical ventilation [ConsOC8].



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Product	Specific Risk Management Measures and Operating Conditions
Category	(only required controls to demonstrate safe use listed)
PC3: Air care products - Air care, instant action (aerosol sprays)	Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 4 times/day of use [ConsOC4]; for each use event, covers use amounts up to 0.1g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 0.25hr/event [ConsOC14];
	No specific RMMs identified beyond those OCs stated.
PC3: Air care products - Air care, instant action (aerosol sprays), -pesticidal-	Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 4 times/day of use [ConsOC4]; for each use event, covers use amounts up to 0.5g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 0.25hr/even t[ConsOC14];
excipient only	No specific RMMs identified beyond those OCs stated.
PC3: Air care products - Air care, continuous action (solid and liquid)	Unless otherwise stated, covers concentrations up to 10% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 35.70 cm2 [ConsOC5]; for each use event, covers use amounts up to 0.48g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 8.00hr/event [ConsOC14];
	No specific RMMs identified beyond those OCs stated.
PC3: Air care products - Air care, continuous action (solid and liquid) -pesticidal-	Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 35.70 cm2 [ConsOC5]; for each use event, covers use amounts up to 0.48g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 8.00hr/event[ConsOC14];
excipient only	No specific RMMs identified beyond those OCs stated.
PC4_n: Anti-freeze and de-icing products - Washing car window	Unless otherwise stated, covers concentrations up to 1% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; for each use event, covers use amounts up to 0.5g [ConsOC2]; Covers use in a one car garage (34m3) under typcial ventilation [ConsOC10]; covers use in room size of 34m3 [ConsOC11]; for each use event, covers exposure up to 0.02hr/event [ConsOC14];
	No specific RMMs identified beyond those OCs stated.
PC4_n: Anti-freeze and de-icing products - Pouring into radiator	Unless otherwise stated, covers concentrations up to 10% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 428.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 2000g [ConsOC2]; Covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3 [ConsOC11]; for each use event, covers exposure up to 0.17hr/event [ConsOC14];
	No specific RMMs identified beyond those OCs stated.
PC4_n: Anti-freeze and de-icing products - Lock de- icer	Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 214.40 cm2 [ConsOC5]; for each use event, covers use amounts up to 4g [ConsOC2]; Covers use in a one car garage (34m3) under typcial ventilation [ConsOC10]; covers use in room size of 34m3 [ConsOC11]; for each use event, covers exposure up to 0.25hr/event [ConsOC14].
	No specific RMMs identified beyond those OCs stated.
PC8_n: Biocidal products (excipient use only for solvent products) - Laundry and dish washing products	Unless otherwise stated, covers concentrations up to 5% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 15g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.50hr/event [ConsOC14];
products	No specific RMMs identified beyond those OCs stated.



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PC8_n: Biocidal products (excipient use only for solvent products) - Cleaners, liquids (all purpose cleaners; sanitary products; floor, glass, carpet and metal cleaners)

Unless otherwise stated, covers concentrations up to 5% [ConsOC1]; covers use up to 128 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 27g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 0.33hr/event [ConsOC14];

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No specific RMMs identified beyond those OCs stated.

PC8_n: Biocidal products (excipient use only for solvent products) -Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) Unless otherwise stated, covers concentrations up to 15% [ConsOC1]; covers use up to 128 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 428.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 35g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 0.17hr/event [ConsOC14];

No specific RMMs identified beyond those OCs stated.

PC9a: Coatings, paints, thinners, paint removers -Waterborne latex wall paint Unless otherwise stated, covers concentrations up to 1.5% [ConsOC1]; covers use up to 4 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 428.75 cm2 [ConsOC5]; for each use event, covers use amounts up to 2760g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 2.20hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC9a: Coatings, paints, thinners, paint removers -Solvent rich, high solid, water borne paint Unless otherwise stated, covers concentrations up to 27.5% [ConsOC1]; covers use up to 6 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 428.75 cm2 [ConsOC5]; for each use event, covers use amounts up to 744g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 2.20hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC9a: Coatings, paints, thinners, paint removers - Aerosol spray can

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 2 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; for each use event, covers use amounts up to 215g [ConsOC2]; Covers use in a one car garage (34m3) under typcial ventilation [ConsOC10]; covers use in room size of 34m3 [ConsOC11]; for each use event, covers exposure up to 0.33hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC9a: Coatings, paints, thinners, paint removers -Removers (paint-, glue-, wall paper-, sealant-remover) Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 3 days/year[ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 491g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 2.00hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC9b: Fillers, putties, plasters, modeling clay - Fillers and putty

Unless otherwise stated, covers concentrations up to 2% [ConsOC1]; covers use up to 12 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 85g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 4.00hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC9b: Fillers, putties, plasters, modeling clay -Plasters and floor equalizers Unless otherwise stated, covers concentrations up to 2% [ConsOC1]; covers use up to 12 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 13800g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 2.00hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.



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PC9b: Fillers, putties, plasters, modeling clay - Modelling clay

Unless otherwise stated, covers concentrations up to 1% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 254.40 cm2 [ConsOC5]; for each use event, assumes swallowed amount of 1g [ConsOC13].

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No specific RMMs identified beyond those OCs stated.

PC9c: Finger paints - Finger paints

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 254.40 cm2 [ConsOC5]; for each use event, assumes swallowed amount of 1.35g [ConsOC13].

Avoid using at a product concentration greater than 5% [ConsRMM1].

PC24: Lubricants, greases, and release products - Liquids

Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 4 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 468.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 2200g [ConsOC2]; Covers use in a one car garage (34m3) under typcial ventilation [ConsOC10]; covers use in room size of 34m3 [ConsOC11]; for each use event, covers exposure up to 0.17hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC24: Lubricants, greases, and release products - Pastes

Unless otherwise stated, covers concentrations up to 20% [ConsOC1]; covers use up to 10 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 468.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 34g [ConsOC2]; for each use event, covers exposure up to 4.00hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC24: Lubricants, greases, and release products - Sprays

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 6 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 428.75 cm2 [ConsOC5]; for each use event, covers use amounts up to 73g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 0.17hr/event [ConsOC14].

No specific RMMs identified beyond those OCs stated.

PC35: Washing and cleaning products (including solvent based products) - Laundry and dish washing products Unless otherwise stated, covers concentrations up to 5% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 15g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 0.50hr/event [ConsOC14];

No specific RMMs identified beyond those OCs stated.

PC35: Washing and cleaning products (including solvent based products) -Cleaners, liquids (all purpose cleaners; sanitary products; floor, glass, carpet and metal cleaners) Unless otherwise stated, covers concentrations up to 5% [ConsOC1]; covers use up to 128 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 27g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 0.33hr/event [ConsOC14];

No specific RMMs identified beyond those OCs stated.

PC35: Washing and cleaning products (including solvent based products) -Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) Unless otherwise stated, covers concentrations up to 15% [ConsOC1]; covers use up to 128 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 35g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];

No specific RMMs identified beyond those OCs stated.



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PC38_n: Welding and soldering products, flux products	Unless otherwise stated, covers concentrations up to 20% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; for each use event, covers use amounts up to 12g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 1.00hr/event [ConsOC14];	
	No specific RMMs identified	beyond those OCs stated.
Section 2.2	Control of environment	al exposure
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].
	Amounts used	Fraction of EU tonnage used in region: 0.1
		Regional use tonnage (tonnes/year): 5.0E+1
		Fraction of regional tonnage used locally: 0.0005
		Annual site tonnage (tonnes/year): .2.5E-2
		Maximum daily site tonnage (kg/day): 6.8E-2
	Frequency and duration of	Continuous release. [FD2].
	use	Emission days (days/year): 365
	Environmental factors not	Local freshwater dilution fraction: 10
	influenced by risk management	Local marine dilution fraction: 100
	Other given operational conditions affecting environmental exposure Conditions and measures related to municipal sewage treatment plant	Release fraction to air from process (initial release prior to RMM): 0.95
		Release fraction to wastewater from process (initial release prior to RMM): 0.025
		Release fraction to soil from process (initial release prior to RMM): 0.025
		Not applicable as there is no release to wastewater [STP1].
		Estimated substance removal from wastewater via domestic sewage treatment 93.7 $\%.$
		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release (kg/d) 6.3E+1.
		Assumed domestic sewage treatment plant flow (m³/day): 2000
	Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].
	Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1].
SECTION 3	EXPOSURE ESTIMAT	TION
Section 3.1	Health	
	The ECETOC TRA tool has G30.	been used to estimate consumer exposures unless otherwise indicated.
Section 3.2	Environment	
	The Hydrocarbon Block Me Petrorisk model. [EE2].	thod has been used to calculate environmental exposure with the



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SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1	Health	
	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. G22.	
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23.	
Section 4.2	Environment	
	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].	

SECTION 1	EXPOSURE SCENARIO TITLE	
Title	10. Use in Oil and Gas Field Drilling and Production Operations – Professional	
Use Descriptor	Sector(s) of Use	SU 22: Professional uses
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure.
		PROC 2 : Use in closed, continuous process with occasional controlled exposure.
		PROC 3 : Use in closed batch process (synthesis or formulation).
		PROC 4 : Use in batch and other process (synthesis) where opportunity for exposure arises.
		PROC 8a : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
		PROC 8b : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
	Environmental Release Categories	ERC 8d : Wide dispersive outdoor use of processing aids in open systems
	Specific Environmental Release Category	Not Applicable
Processes, Tasks and Activities Covered		ns (including drilling muds and well cleaning) including material transfers, d operations, shaker room activities and related maintenance.
SECTION 2	OPERATIONAL CON	DITIONS AND RISK MANAGEMENT MEASURES
Section 2.1	Control of worker exposure	
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].
characteristics	Concentration of substance in product	Up to 100% (unless stated).
	Amount used	No limit.
	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated). [G2].
	Other operational	Assumes use at not > 20oC above ambient [G15].
	conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene has been implemented [G1]



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Contributing	Specific Risk Managem	ent Measures and Operational Conditions
Scenarios	(only required controls to	demonstrate safe use listed)
	Bulk transfers [CS14] PROC8b	No other specific measures identified. [El20]
	Filling / preparation of equipment from drums or containers. [CS45] PROC8b	No other specific measures identified. [EI20]
	Drilling mud (re-) formulation [CS115] PROC3	No other specific measures identified. [EI20]
	Drill floor operations [CS116] PROC4	No other specific measures identified. [EI20]
	Operation of solids filtering equipment - vapour exposures [CS118] PROC4	No other specific measures identified. [EI20]
	Cleaning of solids filtering equipment [CS120] PROC8a	No other specific measures identified. [EI20]
	Treatment and disposal of filtered solids [CS121] PROC3	No other specific measures identified. [EI20]
	Process sampling [CS2] PROC3	No other specific measures identified. [EI20]
	General exposures (closed systems) [CS15] PROC1	No other specific measures identified. [EI20]
	Pouring from small containers [CS9] PROC8a	No other specific measures identified. [EI20]
	General exposures (open systems) [CS16] PROC4	No other specific measures identified. [EI20]
	Equipment cleaning and maintenance [CS39] PROC8a	No other specific measures identified. [EI20]
	Batch process [CS55] PROC2	No other specific measures identified. [El20]
Section 2.2	Control of environmental exposure	
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].
	Amounts used	Fraction of EU tonnage used in region [A1]: 1
		Regional use tonnage (tonnes/year) [A2]: 168
		Fraction of regional tonnage used locally [A3]: N/A
		Annual site tonnage (tonnes/year) [A4]: N/A
		Maximum daily site tonnage (kg/day) [A5]: N/A
	Frequency and duration of use	Emission days (days/year) [FD4]: N/A



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Environmental factors not Local freshwater dilution fraction [EF1]: N/A influenced by risk Local marine water dilution fraction [EF2]: N/A management Other given operational Release fraction to air from process (initial release prior to RMM): N/A conditions affecting Release fraction to wastewater from process (initial release prior to environmental exposure RMM): N/A Technical conditions and Discharge to aquatic environment is restricted (see Section 4.2) [TCS2]. measures at process level (source) to prevent release Technical onsite Treat air emission to provide a typical removal efficiency of N/A. conditions and measures Treat onsite wastewater (prior to receiving water discharge) to provide to reduce or limit the required removal efficiency N/A. discharges, air emissions and releases to soil If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of N/A. Organizational measures Prevent environmental discharge consistent with regulatory to prevent / limit release requirements [OMS4]. from site Conditions and measures Total efficiency of removal from wastewater after onsite and offsite related to municipal (domestic treatment plant) RMMs (%) N/A sewage treatment plant Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) N/A Assumed domestic sewage treatment plant flow (m3/d) N/A Conditions and measures External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]. related to external treatment of waste for disposal Conditions and measures External recovery and recycling of waste should comply with applicable related to external local and/or national regulations [ERW1]. recovery of waste **SECTION 3 EXPOSURE ESTIMATION** Section 3.1 Health The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. [G21]. Section 3.2 Environment Quantitative exposure and risk assessment not possible due to lack of emissions to aquatic environment [EE7]. Qualitative approach used to conclude safe use [EE8]. **SECTION 4** GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO Section 4.1 Health Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22]. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23]. Section 4.2 **Environment** Discharge to aquatic environment is restricted by law and industry prohibits release [DSU9].



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SECTION 1	EXPOSURE SCENAR	IO TITLE
Title	11. Lubricants – Industr	rial
Use Descriptor	Sector(s) of Use	SU 3: Industrial uses
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure.
		PROC 2 : Use in closed, continuous process with occasional controlled exposure.
		PROC 3: Use in closed batch process (synthesis or formulation).
		PROC 4 : Use in batch and other process (synthesis) where opportunity for exposure arises.
		PROC 7: Industrial spraying
		PROC 8a : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
		PROC 8b : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
		PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
		PROC 10: Roller application or brushing
		PROC 13: Treatment of articles by dipping and pouring
		PROC 17 : Lubrication at high energy conditions and in partly open process
		PROC 18: Greasing at high energy conditions
	Environmental Release Categories	ERC 4 : Industrial use of processing aids in processes and products, not becoming part of articles
		ERC 7: Industrial use of sub-stances in closed systems
	Specific Environmental Release Category	ESVOC 4.6a.v1
Processes, Tasks and Activities Covered	Covers the use of formulated lubricants in closed and open systems including transfers operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes.	
SECTION 2	OPERATIONAL CONI	DITIONS AND RISK MANAGEMENT MEASURES
Section 2.1	Control of worker expo	sure
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].
characteristics	Concentration of substance in product	Up to 100% (unless stated).
	Amount used	No limit.
	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated). [G2].
	Other operational	Assumes use at not > 20oC above ambient [G15].
	conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene has been implemented [G1]
	1	



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Contributing	Specific Risk Managem	ent Measures and Operational Conditions	
Scenarios	(only required controls to demonstrate safe use listed)		
	General exposures (closed systems) [CS15] PROC 1, 2, 3	No other specific measures identified. [El20]	
	General exposures (open systems) [CS16] PROC4	No other specific measures identified. [EI20]	
	Bulk transfers [CS14] PROC8b	No other specific measures identified. [EI20]	
	Filling / preparation of equipment from drums or containers. [CS45] PROC8a, 8b	No other specific measures identified. [EI20]	
	Initial factory fill of equipment [CS75] PROC9	No other specific measures identified. [EI20]	
	Operation and lubrication of high energy open equipment [CS17] PROC17, 18	No other specific measures identified. [EI20]	
	Manual applications e.g. brushing, rolling [CS13] PROC10	No other specific measures identified. [EI20]	
	Treatment by dipping and pouring [CS35] PROC13	Allow time for product to drain from workpiece [EI21]	
	Spraying [CS10] PROC7	Provide a good standard of controlled ventilation (10 to 15 air changes per hour). [E40]	
	Maintenance (of larger plant items) and machine set up [CS77] PROC8b	No other specific measures identified. [EI20]	
	Maintenance (of larger plant items) and machine set up [CS77] Operation is carried out at elevated temp. (> then 20°C above ambient temp.) [OC7] PROC8b	No other specific measures identified. [EI20]	
	Maintenance of small items [CS18] PROC8a	No other specific measures identified. [EI20]	
	Remanufacture of reject articles [CS19] PROC9	No other specific measures identified. [EI20]	
	Material storage [CS67] PROC1, 2	No other specific measures identified. [EI20]	
Section 2.2	Control of environmental exposure		
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].	
	Amounts used	Fraction of EU tonnage used in region: 0.1	
		Regional use tonnage (tonnes/year): 1.0E+1	
		Fraction of regional tonnage used locally: 1	



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		Annual site tonnage (tonnes/year): 1.0E+1
		Maximum daily site tonnage (kg/day): 5.0E+2
	Frequency and duration of	Continuous release. [FD2].
	use	Emission days (days/year): 20
	Environmental factors not	Local freshwater dilution fraction: 10
	influenced by risk management	Local marine dilution fraction: 100
	Other operational	Release fraction to air from process (initial release prior to RMM: 5.0E-3
	conditions affecting environmental exposure	Release fraction to wastewater from process (initial release prior to RMM): 3.0E-6
		Release fraction to soil from process (initial release prior to RMM): 0.001
	Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used [TCS1].
	Technical onsite conditions and measures	Risk from environmental exposure is driven by Freshwater [TCR1a] No wastewater treatment required [TCR6].
	to reduce or limit discharges, air emissions	Treat air emission to provide a typical removal efficiency of 70%.
	and releases to soil	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency \geq 0.0 $\%$
		If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0.0~\%$
	Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recover from wastewater [OMS1].
	from site	Do not apply industrial sludge to natural soils [OMS2].
		Sludge should be incinerated, contained or reclaimed [OMS3].
	Conditions and measures	Not applicable as there is no release to wastewater [STP1].
	related to municipal sewage treatment plant	Estimated substance removal from wastewater via domestic sewage treatment 93.7 %.
		Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 %.
		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 4.6E+5 kg per day.
		Assumed domestic sewage treatment plant flow 2 000 m³ per day.
	Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].
	Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1].
SECTION 3	EXPOSURE ESTIMAT	TION
Section 3.1	Health	
	The ECETOC TRA tool has [G21].	been used to estimate workplace exposures unless otherwise indicated.



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Section 3.2	Environment	
	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2].	
SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1	Health	
	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22].	
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23].	
Section 4.2	Environment	
	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].	

SECTION 1	EXPOSURE SCENARIO TITLE	
Title	12. Lubricants – Professional: Low Environmental Release	
Use Descriptor	Sector(s) of Use	SU 22: Professional uses:
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure.
		PROC 2 : Use in closed, continuous process with occasional controlled exposure.
		PROC 3: Use in closed batch process (synthesis or formulation).
		PROC 4 : Use in batch and other process (synthesis) where opportunity for exposure arises.
		PROC 8a : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
		PROC 8b : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
		PROC 9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
		PROC 10: Roller application or brushing
		PROC11: Non industrial spraying
		PROC 13: Treatment of articles by dipping and pouring
		PROC 17: Lubrication at high energy conditions and in partly open process
		PROC 18: Greasing at high energy conditions
		PROC 20 : Heat and pressure transfer fluids in dispersive, professional use but closed systems
	Environmental Release	ERC 9a: Wide dispersive indoor use of substances in closed systems
	Categories	ERC 9b: Wide dispersive outdoor use of substances in closed systems
	Specific Environmental Release Category	ESVOC 9.6b.v1



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Processes, Tasks and Activities Covered	Covers the use of formulated lubricants in closed or contained systems including transfers operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil.	
SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of worker expos	sure
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].
characteristics	Concentration of substance in product	Up to 100% (unless stated).
	Amount used	No limit.
	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated). [G2].
	Other operational	Assumes use at not > 20oC above ambient [G15].
	conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene has been implemented [G1]
Contributing	Specific Risk Managem	ent Measures and Operational Conditions
Scenarios	(only required controls to	demonstrate safe use listed)
	General exposures (closed systems) [CS15] PROC1, 2, 3	No other specific measures identified. [El20]
	Operation of equipment containing engine oils and similar [CS26] PROC20	No other specific measures identified. [EI20]
	General exposures (open systems) [CS16] PROC4	No other specific measures identified. [EI20]
	Bulk transfers [CS14] PROC8b	No other specific measures identified. [EI20]
	Filling / preparation of equipment from drums or containers. [CS45] Dedicated facility [CS81] PROC8b	No other specific measures identified. [EI20]
	Filling / preparation of equipment from drums or containers. [CS45] Non- dedicated facility [CS82] PROC8a	No other specific measures identified. [EI20]
	Operation and lubrication of high energy open equipment [CS17] Indoor [OC8] PROC17	No other specific measures identified. [EI20]
	Operation and lubrication of high energy open equipment [CS17] PROC18	No other specific measures identified. [EI20]
	Operation and lubrication of high energy open equipment [CS17] Outdoor [OC9] PROC17	No other specific measures identified. [EI20]



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	Maintenance (of larger plant items) and machine set up [CS77] PROC8b	No other specific measures identified. [El20]	
	Maintenance (of larger plant items) and machine set up [CS77] Operation is carried out at elevated temp. (> then 20°C above ambient temperature) [OC7] PROC8b	No other specific measures identified. [EI20]	
	Maintenance of small items [CS18] Operation is carried out at elevated temp. (> then 20°C above ambient temperature) [OC7] PROC8a	Drain or remove substance from equipment prior to break-maintenance [E81]	in or
	Engine lubricant service [CS78] PROC9	No other specific measures identified. [El20]	
	Manual applications e.g. brushing, rolling [CS13] PROC10	No other specific measures identified. [El20]	
	Spraying [CS10] PROC11	Provide a good standard of controlled ventilation (10 to 15 per hour). [E40]	air changes
	Treatment by dipping and pouring [CS35] PROC13	No other specific measures identified. [El20]	
	Material storage [CS67] PROC1, 2	No other specific measures identified. [El20]	
Section 2.2	Control of environment	al exposure	
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydro [PrC4a].	phobic.
	Amounts used	Fraction of EU tonnage used in region: 0.1	
		Regional use tonnage (tonnes/year): 3.5E+1	
		Fraction of regional tonnage used locally: 1	
		Annual site tonnage (tonnes/year): 1.8E-2	
		Maximum daily site tonnage (kg/day): 365	
	Frequency and duration of	Continuous release. [FD2].	
	use	Emission days (days/year): 365	
	Environmental factors not influenced by risk	Local freshwater dilution fraction: 10	
	management	Local marine dilution fraction: 100	
	Other operational	Release fraction to air from process (initial release prior to	RMM): 0.01
	conditions affecting environmental exposure	Release fraction to wastewater from process (initial release RMM): 0.01	e prior to
		Release fraction to soil from process (initial release prior to	RMM): 0.01
	Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative pro estimates used [TCS1].	cess release



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	Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by Freshwater [TCR1a] No wastewater treatment required [TCR6].
		Treat air emission to provide a typical removal efficiency of N/A.
	and releases to soil	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency \geq 0.0 $\%$
		If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0.0~\%$
	Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recover from wastewater [OMS1].
	from site	Do not apply industrial sludge to natural soils [OMS2].
		Sludge should be incinerated, contained or reclaimed [OMS3].
	Conditions and measures	Not applicable as there is no release to wastewater [STP1].
	related to municipal sewage treatment plant	Estimated substance removal from wastewater via domestic sewage treatment 93.7 $\%.$
		Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 %.
		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 4.6E+1 kg per day.
		Assumed domestic sewage treatment plant flow 2 000 m³ per day.
	Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].
	Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1].
SECTION 3	EXPOSURE ESTIMATION	
Section 3.1	Health	
	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. [G21].	
Section 3.2	Environment	
	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2].	
SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1	Health	
		t expected to exceed the DN(M)EL when the Risk Management litions outlined in Section 2 are implemented. [G22].
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23].	
Section 4.2	Environment	
	scaling may be necessary to Required removal efficiency	med operating conditions which may not be applicable to all sites; thus, o define appropriate site-specific risk management measures [DSU1]. for wastewater can be achieved using onsite/offsite technologies, either U2]. Required removal efficiency for air can be achieved using onsite r in combination [DSU3]. Further details on scaling and control



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SECTION 1 EXPOSURE SCENARIO TITLE Title 13. Lubricants – Professional: High Environmental Release SU 22: Professional uses **Use Descriptor** Sector(s) of Use **Process Categories** PROC 1: Use in closed process, no likelihood of exposure. PROC 2: Use in closed, continuous process with occasional controlled exposure. **PROC 3**: Use in closed batch process (synthesis or formulation). PROC 4: Use in batch and other process (synthesis) where opportunity for exposure arises. PROC 8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC 8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC 9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC 10: Roller application or brushing PROC11: Non industrial spraying PROC 13: Treatment of articles by dipping and pouring PROC 17: Lubrication at high energy conditions and in partly open process PROC 18: Greasing at high energy conditions PROC 20: Heat and pressure transfer fluids in dispersive, professional use but closed systems **Environmental Release** ERC 8a: Wide dispersive indoor use of processing aids in open Categories ERC 8d: Wide dispersive outdoor use of processing aids in open systems. Specific Environmental ESVOC 8.6b.v1 Release Category Processes. Covers the use of formulated lubricants in open systems including transfers operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of Tasks and waste oil. **Activities** Covered **SECTION 2** OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES Section 2.1 Control of worker exposure Physical form of product **Product** Liquid, vapour pressure < 0.5 kPa at STP [OC3]. characteristics Concentration of Up to 100% (unless stated). substance in product Amount used No limit. Frequency and duration of Covers daily exposures up to 8 hours (unless stated). [G2]. Other operational Assumes use at not > 20oC above ambient [G15]. conditions affecting Assumes a good basic standard of occupational hygiene has been worker exposure implemented [G1]



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Contributing	Specific Risk Managem	ent Measures and Operational Conditions	
Scenarios	(only required controls to demonstrate safe use listed)		
	General exposures (closed systems) [CS15] PROC1, 2, 3	No other specific measures identified. [El20]	
	Operation of equipment containing engine oils and similar [CS26] PROC20	No other specific measures identified. [El20]	
	General exposures (open systems) [CS16] PROC4	No other specific measures identified. [El20]	
	Bulk transfers [CS14] PROC8b	No other specific measures identified. [El20]	
	Filling / preparation of equipment from drums or containers. [CS45] Dedicated facility [CS81] PROC8b	No other specific measures identified. [EI20]	
	Filling / preparation of equipment from drums or containers. [CS45] Non- dedicated facility [CS82] PROC8a	No other specific measures identified. [EI20]	
	Operation and lubrication of high energy open equipment [CS17]Indoor [OC8] PROC17	No other specific measures identified. [El20]	
	Operation and lubrication of high energy open equipment [CS17] PROC18	No other specific measures identified. [EI20]	
	Operation and lubrication of high energy open equipment [CS17]Outdoor [OC9] PROC17	No other specific measures identified. [El20]	
	Maintenance (of larger plant items) and machine set up [CS77] PROC8b	No other specific measures identified. [El20]	
	Maintenance (of larger plant items) and machine set up [CS77] Operation is carried out at elevated temp. (> then 20°C above ambient temperature) [OC7] PROC8b	No other specific measures identified. [El20]	
	Maintenance of small items [CS18] Operation is carried out at elevated temp. (> then 20°C above ambient temperature) [OC7] PROC8a	Drain or remove substance from equipment prior to break-in or maintenance [E81]	
	Engine lubricant service [CS78] PROC9	No other specific measures identified. [EI20]	



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	Manual applications e.g. brushing, rolling [CS13] PROC10	No other specific measures identified. [EI20]
	Spraying [CS10] PROC11	Provide a good standard of controlled ventilation (10 to 15 air changes per hour). [E40]
	Treatment by dipping and pouring [CS35] PROC13	No other specific measures identified. [El20]
	Material storage [CS67] PROC1, 2	No other specific measures identified. [El20]
Section 2.2	Control of environment	al exposure
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].
	Amounts used	Fraction of EU tonnage used in region: 0.1
		Regional use tonnage (tonnes/year): 3.5E+1
		Fraction of regional tonnage used locally: 1
		Annual site tonnage (tonnes/year): 1.8E-2
		Maximum daily site tonnage (kg/day): 4.8E-2
	Frequency and duration of	Continuous release. [FD2].
	use	Emission days (days/year): 365
	Environmental factors not	Local freshwater dilution fraction: 10
	influenced by risk management	Local marine dilution fraction: 100
	Other operational conditions affecting environmental exposure	Release fraction to air from process (initial release prior to RMM): 1.5E-1
		Release fraction to wastewater from process (initial release prior to RMM): 0.05
		Release fraction to soil from process (initial release prior to RMM): 0.05
	Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used [TCS1].
	Technical onsite conditions and measures	Risk from environmental exposure is driven by Freshwater [TCR1a] No wastewater treatment required [TCR6].
	to reduce or limit discharges, air emissions	Treat air emission to provide a typical removal efficiency of N/A.
	and releases to soil	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency \geq 0.0 $\%$
		If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of \geq 0.0 $\%$
	Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recover from wastewater [OMS1].
	from site	Do not apply industrial sludge to natural soils [OMS2].
		Sludge should be incinerated, contained or reclaimed [OMS3].
	Conditions and measures	Not applicable as there is no release to wastewater [STP1].
	related to municipal sewage treatment plant	Estimated substance removal from wastewater via domestic sewage treatment 93.7 $\%.$
		Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 %.



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		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 4.3E+1 kg per day.
		Assumed domestic sewage treatment plant flow 2 000 m³ per day.
	Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].
	Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1].
SECTION 3	EXPOSURE ESTIMAT	TION
Section 3.1	Health	
	The ECETOC TRA tool has [G21].	been used to estimate workplace exposures unless otherwise indicated.
Section 3.2	Environment	
	The Hydrocarbon Block Met Petrorisk model. [EE2].	thod has been used to calculate environmental exposure with the
SECTION 4	GUIDANCE TO CHEC	K COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1	Health	
		t expected to exceed the DN(M)EL when the Risk Management ditions outlined in Section 2 are implemented. [G22].
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23].	
Section 4.2	Environment	
	scaling may be necessary to Required removal efficiency alone or in combination [DS technologies, either alone o	med operating conditions which may not be applicable to all sites; thus, of define appropriate site-specific risk management measures [DSU1]. If for wastewater can be achieved using onsite/offsite technologies, either U2]. Required removal efficiency for air can be achieved using onsite in combination [DSU3]. Further details on scaling and control in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html)

SECTION 1	EXPOSURE SCENARIO TITLE	
Title	14. Lubricants – Consumer: Low Environmental Release	
Use Descriptor	Sector(s) of Use	SU 21: Consumer uses
	Products Categories	PC1: Adhesives, sealants
		PC 24: Lubricants, greases, release products
		PC 31: Polishes and wax blends
	Environmental Release	ERC 9a: Wide dispersive indoor use of substances in closed systems
	Categories	ERC 9b: Wide dispersive outdoor use of substances in closed systems
	Specific Environmental Release Category	ESVOC 9.6d.v1
Processes, Tasks and Activities Covered	Covers the consumer use of formulated lubricants in closed or contained systems including transfer operations, application, operation of engines and similar articles, equipment maintenance and disposal of waste oil.	



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SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Section 2.1	Control of consumer exposure		
Product	Physical form of product	Liquid, vapour pressure > 10 Pa STP [OC15]	
characteristics	Vapour Pressure (Pa)	231	
	Concentration of substance in product	Unless otherwise stated, cover concentrations up to 100 %.	. [ConsOC1].
	Amounts used	Unless otherwise stated, covers use amounts up to 6390g [ConsOC2]; covers skin contact area up to 468cm2 [ConsOC	C5]
	Frequency and duration of use/exposure	Unless otherwise stated, covers use frequency up to 365 da [ConsOC3];Unless otherwise stated, covers use frequency times per day [ConsOC4];covers exposure up to 6 hours per [ConsOC14]	up to 1
	Other operational conditions affecting exposure	Unless otherwise stated assumes use at ambient temperate [ConsOC15]; assumes use in a 20 m3 room [ConsOC11]; a with typical ventilation [ConsOC8].	
Product	Specific Risk Managem	ent Measures and Operating Conditions	
Category	(only required controls to	demonstrate safe use listed)	
PC1: Adhesives, sealants - Glues, hobby use	Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 9g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 4.00hr/event [ConsOC14];		ntact area up covers use
	No specific RMMs identified beyond those OCs stated.		
PC1:Adhesives, sealants - Glues DIY-use (carpet glue, tile glue, wood parquet glue)	Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 1 days/year[ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 110.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 6390g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 6.00hr/event [ConsOC14];		tact area up C2]; covers
	No specific RMMs identified	beyond those OCs stated.	
PC1: Adhesives, sealants - Glue from spray	Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 6 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 85.05g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 4.00hr/event [ConsOC14];		
	No specific RMMs identified	beyond those OCs stated.	
PC1:Adhesives, sealants - Sealants	Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 75g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 1.00hr/event [ConsOC14];		ntact area up ; covers use
	No specific RMMs identified beyond those OCs stated.		
PC24: Lubricants, greases, and release products - Liquids	days/year [ConsOC3]; cover to 468.00 cm2 [ConsOC5]; f use in a one car garage (34)	vers concentrations up to 100% [ConsOC1]; covers use up to rs use up to 1 time/on day of use [ConsOC4]; covers skin corfor each use event, covers use amounts up to 2200g [ConsOm3) under typcial ventilation [ConsOC10]; covers use in room use event, covers exposure up to 0.17hr/event [ConsOC14];	ntact area up C2]; Covers n size of
	No specific RMMs identified	beyond those OCs stated.	



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PC24: Lubricants, greases, and release products - Pastes	Unless otherwise stated, covers concentrations up to 20% [ConsOC1]; covers use up to 10 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 468.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 34g [ConsOC2]; for each use event, covers exposure up to 4.00hr/event [ConsOC14];		
	No specific RMMs identified	beyond those OCs stated.	
PC24: Lubricants, greases, and release products - Sprays	Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 6 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 428.75 cm2 [ConsOC5]; for each use event, covers use amounts up to 73g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.17hr/event [ConsOC14];		
	No specific RMMs identified	beyond those OCs stated.	
PC31:Polishes and wax blends - Polishes, wax / cream (floor, furniture, shoes)	days/year[ConsOC3]; cover to 430.00 cm2 [ConsOC5]; to use under typical household	vers concentrations up to 50% [ConsOC1]; covers use up to suse up to 1 time/on day of use[ConsOC4]; covers skin corfor each use event, covers use amounts up to 142g [ConsOd ventilation [ConsOC8]; covers use in room size of 20m3[Consure up to 1.23hr/event[ConsOC14];	ntact area up C2]; covers
	No specific RMMs identified	beyond those OCs stated.	
PC31:Polishes and wax blends - Polishes, spray (furniture, shoes)	Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 8 days/year [ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 430.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 35g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 0.33hr/event [ConsOC14];		up to 430.00 use under
	No specific RMMs identified	beyond those OCs stated.	
	Control of environmental exposure		
Section 2.2	Control of environment	al exposure	
Section 2.2	Control of environment Product characteristics	cal exposure Substance is complex UVCB. [PrC3]. Predominantly hydro [PrC4a].	ophobic.
Section 2.2		Substance is complex UVCB. [PrC3]. Predominantly hydro	ophobic.
Section 2.2	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydro [PrC4a].	ophobic.
Section 2.2	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydro [PrC4a]. Fraction of EU tonnage used in region: 0.1	ophobic.
Section 2.2	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydro [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1	ophobic.
Section 2.2	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydro [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005	ophobic.
Section 2.2	Product characteristics Amounts used Frequency and duration of	Substance is complex UVCB. [PrC3]. Predominantly hydro [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005 Annual site tonnage (tonnes/year): 1.3E-2	ophobic.
Section 2.2	Product characteristics Amounts used	Substance is complex UVCB. [PrC3]. Predominantly hydro [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005 Annual site tonnage (tonnes/year): 1.3E-2 Maximum daily site tonnage (kg/day): 3.4E-2	ophobic.
Section 2.2	Product characteristics Amounts used Frequency and duration of use Environmental factors not	Substance is complex UVCB. [PrC3]. Predominantly hydro [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005 Annual site tonnage (tonnes/year): 1.3E-2 Maximum daily site tonnage (kg/day): 3.4E-2 Continuous release. [FD2].	ophobic.
Section 2.2	Product characteristics Amounts used Frequency and duration of use	Substance is complex UVCB. [PrC3]. Predominantly hydro [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005 Annual site tonnage (tonnes/year): 1.3E-2 Maximum daily site tonnage (kg/day): 3.4E-2 Continuous release. [FD2]. Emission days (days/year): 365	ophobic.
Section 2.2	Product characteristics Amounts used Frequency and duration of use Environmental factors not influenced by risk management Other given operational	Substance is complex UVCB. [PrC3]. Predominantly hydro [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005 Annual site tonnage (tonnes/year): 1.3E-2 Maximum daily site tonnage (kg/day): 3.4E-2 Continuous release. [FD2]. Emission days (days/year): 365 Local freshwater dilution fraction: 10	
Section 2.2	Product characteristics Amounts used Frequency and duration of use Environmental factors not influenced by risk management	Substance is complex UVCB. [PrC3]. Predominantly hydro [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005 Annual site tonnage (tonnes/year): 1.3E-2 Maximum daily site tonnage (kg/day): 3.4E-2 Continuous release. [FD2]. Emission days (days/year): 365 Local freshwater dilution fraction: 10 Local marine dilution fraction: 100	o RMM): 0.01
Section 2.2	Product characteristics Amounts used Frequency and duration of use Environmental factors not influenced by risk management Other given operational conditions affecting	Substance is complex UVCB. [PrC3]. Predominantly hydro [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005 Annual site tonnage (tonnes/year): 1.3E-2 Maximum daily site tonnage (kg/day): 3.4E-2 Continuous release. [FD2]. Emission days (days/year): 365 Local freshwater dilution fraction: 10 Local marine dilution fraction: 100 Release fraction to air from process (initial release prior to Release fraction to wastewater from process (initial release	o RMM): 0.01 se prior to
Section 2.2	Product characteristics Amounts used Frequency and duration of use Environmental factors not influenced by risk management Other given operational conditions affecting environmental exposure Conditions and measures	Substance is complex UVCB. [PrC3]. Predominantly hydro [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005 Annual site tonnage (tonnes/year): 1.3E-2 Maximum daily site tonnage (kg/day): 3.4E-2 Continuous release. [FD2]. Emission days (days/year): 365 Local freshwater dilution fraction: 10 Local marine dilution fraction: 100 Release fraction to air from process (initial release prior to Release fraction to wastewater from process (initial release RMM): 0.01	o RMM): 0.01 se prior to o RMM): 0.01
Section 2.2	Product characteristics Amounts used Frequency and duration of use Environmental factors not influenced by risk management Other given operational conditions affecting environmental exposure	Substance is complex UVCB. [PrC3]. Predominantly hydro [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005 Annual site tonnage (tonnes/year): 1.3E-2 Maximum daily site tonnage (kg/day): 3.4E-2 Continuous release. [FD2]. Emission days (days/year): 365 Local freshwater dilution fraction: 10 Local marine dilution fraction: 100 Release fraction to air from process (initial release prior to Release fraction to wastewater from process (initial release RMM): 0.01 Release fraction to soil from process (initial release prior to Release fraction to R	o RMM): 0.01 se prior to o RMM): 0.01
Section 2.2	Product characteristics Amounts used Frequency and duration of use Environmental factors not influenced by risk management Other given operational conditions affecting environmental exposure Conditions and measures related to municipal	Substance is complex UVCB. [PrC3]. Predominantly hydro [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005 Annual site tonnage (tonnes/year): 1.3E-2 Maximum daily site tonnage (kg/day): 3.4E-2 Continuous release. [FD2]. Emission days (days/year): 365 Local freshwater dilution fraction: 10 Local marine dilution fraction: 100 Release fraction to air from process (initial release prior to Release fraction to wastewater from process (initial release RMM): 0.01 Release fraction to soil from process (initial release prior to Not applicable as there is no release to wastewater via domes)	o RMM): 0.01 se prior to o RMM): 0.01 I]. stic sewage



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	Conditions and measures related to external treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]. treatment of waste for disposal	
	Conditions and measures related to external recovery of waste recovery of waste External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1].	
SECTION 3	EXPOSURE ESTIMATION	
Section 3.1	Health	
	The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated. G30.	
Section 3.2	Environment	
	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2].	
SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1	Health	
	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. G22.	
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23.	
Section 4.2	Environment	
	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].	

SECTION 1	EXPOSURE SCENARIO TITLE	
Title	15. Lubricants – Consumer: High Environmental Release	
Use Descriptor	Sector(s) of Use	SU 21: Consumer uses
	Products Categories	PC1: Adhesives, sealants
		PC 24: Lubricants, greases, release products
		PC 31: Polishes and wax blends
	Environmental Release Categories	ERC 8a : Wide dispersive indoor use of processing aids in open systems.
		ERC 8d : Wide dispersive outdoor use of processing aids in open systems.
	Specific Environmental Release Category	8.6e.v1
Processes, Tasks and Activities Covered	Covers the consumer use of formulated lubricants in open systems including transfer operations, application, operation of engines and similar articles, equipment maintenance and disposal of waste oil.	



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SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of consumer exposure	
Product	Physical form of product	Liquid, vapour pressure > 10 Pa STP [OC15]
characteristics	Vapour Pressure (Pa)	231
	Concentration of substance in product	Unless otherwise stated, cover concentrations up to 100 %. [ConsOC1].
	Amounts used	Unless otherwise stated, covers use amounts up to6390g [ConsOC2];covers skin contact area up to 468cm2 [ConsOC5]
	Frequency and duration of use/exposure	Unless otherwise stated, covers use frequency up to 365 days per year [ConsOC3];Unless otherwise stated, covers use frequency up to 1 times per day [ConsOC4];covers exposure up to 6 hours per event [ConsOC14]
	Other operational conditions affecting exposure	Unless otherwise stated assumes use at ambient temperatures [ConsOC15]; assumes use in a 20 m3 room [ConsOC11]; assumes use with typical ventilation [ConsOC8].
Product	Specific Risk Managem	ent Measures and Operating Conditions
Category	(only required controls to	demonstrate safe use listed)
PC1:Adhesives, sealants - Glues, hobby use	Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 9g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 4.00hr/event [ConsOC14];	
	No specific RMMs identified	beyond those OCs stated.
PC1:Adhesives, sealants - Glues DIY-use (carpet glue, tile glue, wood parquet glue)	Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 1 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 110.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 6390g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 6.00hr/event [ConsOC14];	
	No specific RMMs identified beyond those OCs stated.	
PC1:Adhesives, sealants - Glue from spray	Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 6 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 85.05g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 4.00hr/event [ConsOC14];	
	No specific RMMs identified beyond those OCs stated.	
PC1:Adhesives, sealants - Sealants	Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 75g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 1.00hr/event [ConsOC14];	
	No specific RMMs identified beyond those OCs stated.	
PC24: Lubricants, greases, and release products - Liquids	days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin conta se products - to 468.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 2200g [ConsOC5]	
	No specific RMMs identified	beyond those OCs stated.



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PC24: Lubricants, greases, and release products - Pastes	days/year [ConsOC3]; cover to 468.00 cm2 [ConsOC5]; to	vers concentrations up to 20% [ConsOC1]; covers use up to 10 rs use up to 1 time/on day of use [ConsOC4]; covers skin contact area use each use event, covers use amounts up to 34g [ConsOC2]; for each up to 4.00hr/event [ConsOC14];	
	No specific RMMs identified	beyond those OCs stated.	
PC24: Lubricants, greases, and release products - Sprays	Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 6 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 428.75 cm2 [ConsOC5]; for each use event, covers use amounts up to 73g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 0.17hr/event [ConsOC14];		75
	No specific RMMs identified	beyond those OCs stated.[
PC31:Polishes and wax blends - Polishes, wax / cream (floor, furniture, shoes)	Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 29 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 430.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 142g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 1.23hr/event [ConsOC14];		
	No specific RMMs identified	beyond those OCs stated.	
PC31:Polishes and wax blends - Polishes, spray (furniture, shoes)	Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 8 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 430.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 35g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 0.33hr/event[ConsOC14];		00
	No specific RMMs identified beyond those OCs stated.		
	140 Specific Painting Identified	Control of environmental exposure	
Section 2.2		•	
Section 2.2		•	
Section 2.2	Control of environment	sal exposure Substance is complex UVCB. [PrC3]. Predominantly hydrophobic.	
Section 2.2	Control of environment Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].	
Section 2.2	Control of environment Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1	
Section 2.2	Control of environment Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1	
Section 2.2	Control of environment Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005	
Section 2.2	Control of environment Product characteristics Amounts used Frequency and duration of	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005 Annual site tonnage (tonnes/year): 1.3E-2	
Section 2.2	Control of environment Product characteristics Amounts used	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005 Annual site tonnage (tonnes/year): 1.3E-2 Maximum daily site tonnage (kg/day): 3.4E-2	
Section 2.2	Control of environment Product characteristics Amounts used Frequency and duration of use Environmental factors not	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005 Annual site tonnage (tonnes/year): 1.3E-2 Maximum daily site tonnage (kg/day): 3.4E-2 Continuous release. [FD2].	
Section 2.2	Control of environment Product characteristics Amounts used Frequency and duration of use	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005 Annual site tonnage (tonnes/year): 1.3E-2 Maximum daily site tonnage (kg/day): 3.4E-2 Continuous release. [FD2]. Emission days (days/year): 365	
Section 2.2	Control of environment Product characteristics Amounts used Frequency and duration of use Environmental factors not influenced by risk management Other given operational	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005 Annual site tonnage (tonnes/year): 1.3E-2 Maximum daily site tonnage (kg/day): 3.4E-2 Continuous release. [FD2]. Emission days (days/year): 365 Local freshwater dilution fraction: 10	E-1
Section 2.2	Control of environment Product characteristics Amounts used Frequency and duration of use Environmental factors not influenced by risk management	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005 Annual site tonnage (tonnes/year): 1.3E-2 Maximum daily site tonnage (kg/day): 3.4E-2 Continuous release. [FD2]. Emission days (days/year): 365 Local freshwater dilution fraction: 10 Local marine dilution fraction: 100	E-1
Section 2.2	Control of environment Product characteristics Amounts used Frequency and duration of use Environmental factors not influenced by risk management Other given operational conditions affecting	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005 Annual site tonnage (tonnes/year): 1.3E-2 Maximum daily site tonnage (kg/day): 3.4E-2 Continuous release. [FD2]. Emission days (days/year): 365 Local freshwater dilution fraction: 10 Local marine dilution fraction: 100 Release fraction to air from process (initial release prior to RMM: 1.5E Release fraction to wastewater from process (initial release prior to	
Section 2.2	Control of environment Product characteristics Amounts used Frequency and duration of use Environmental factors not influenced by risk management Other given operational conditions affecting environmental exposure Conditions and measures	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005 Annual site tonnage (tonnes/year): 1.3E-2 Maximum daily site tonnage (kg/day): 3.4E-2 Continuous release. [FD2]. Emission days (days/year): 365 Local freshwater dilution fraction: 10 Local marine dilution fraction: 100 Release fraction to air from process (initial release prior to RMM: 1.5E Release fraction to wastewater from process (initial release prior to RMM): 0.05	
Section 2.2	Control of environment Product characteristics Amounts used Frequency and duration of use Environmental factors not influenced by risk management Other given operational conditions affecting environmental exposure	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005 Annual site tonnage (tonnes/year): 1.3E-2 Maximum daily site tonnage (kg/day): 3.4E-2 Continuous release. [FD2]. Emission days (days/year): 365 Local freshwater dilution fraction: 10 Local marine dilution fraction: 100 Release fraction to air from process (initial release prior to RMM: 1.5E Release fraction to soil from process (initial release prior to RMM): 0.05 Release fraction to soil from process (initial release prior to RMM): 0.05	
Section 2.2	Control of environment Product characteristics Amounts used Frequency and duration of use Environmental factors not influenced by risk management Other given operational conditions affecting environmental exposure Conditions and measures related to municipal	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.5E+1 Fraction of regional tonnage used locally: 0.0005 Annual site tonnage (tonnes/year): 1.3E-2 Maximum daily site tonnage (kg/day): 3.4E-2 Continuous release. [FD2]. Emission days (days/year): 365 Local freshwater dilution fraction: 10 Local marine dilution fraction: 100 Release fraction to air from process (initial release prior to RMM: 1.5E Release fraction to soil from process (initial release prior to RMM): 0.05 Release fraction to soil from process (initial release prior to RMM): 0.00 Not applicable as there is no release to wastewater [STP1]. Estimated substance removal from wastewater via domestic sewage	05



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	Conditions and measures related to external treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]. treatment of waste for disposal	
	Conditions and measures related to external recovery of waste should comply with applicable local and/or national regulations [ERW1].	
SECTION 3	EXPOSURE ESTIMATION	
Section 3.1	Health	
	The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated. G30.	
Section 3.2	Environment	
	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2].	
SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1	Health	
	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. G22.	
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23.	
Section 4.2	Environment	
	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].	

SECTION 1	EXPOSURE SCENARIO TITLE	
Title	16. Use in Metal Working Fluids/Rolling Oils – Industrial	
Use Descriptor	Sector(s) of Use	SU 3: Industrial uses
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure.
		PROC 2 : Use in closed, continuous process with occasional controlled exposure.
		PROC 3: Use in closed batch process (synthesis or formulation).
		PROC 4 : Use in batch and other process (synthesis) where opportunity for exposure arises.
		PROC 5 : Mixing or blending in batch processes for formulation of preparations* and articles (multistage and/or significant contact)
		PROC 7: Industrial spraying
		PROC 8a : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
		PROC 8b : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
		PROC 10: Roller application or brushing
		PROC 13: Treatment of articles by dipping and pouring



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ivities, cutting/machining a cluding brushing, dipping a s.	PROC 17: Lubrication at high energy conditions and in partly open process ERC 4: Industrial use of processing aids in processes and products, no becoming part of articles ESVOC 4.7a.v1 I MWFs/rolling oils including transfer operations, rolling and annealing activities, automated and manual application of corrosion protections and spraying), equipment maintenance, draining and disposal of waster
tegories ecific Environmental lease Category vers the use in formulated ivities, cutting/machining a cluding brushing, dipping a	becoming part of articles ESVOC 4.7a.v1 I MWFs/rolling oils including transfer operations, rolling and annealing activities, automated and manual application of corrosion protections
lease Category vers the use in formulated ivities, cutting/machining a cluding brushing, dipping a s.	I MWFs/rolling oils including transfer operations, rolling and annealing activities, automated and manual application of corrosion protections
ivities, cutting/machining a cluding brushing, dipping a s.	activities, automated and manual application of corrosion protections
PERATIONAL COND	
	ITIONS AND RISK MANAGEMENT MEASURES
entrol of worker expos	ure
ysical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].
ncentration of ostance in product	Up to 100% (unless stated).
nount used	No limit.
equency and duration of	Covers daily exposures up to 8 hours (unless stated). [G2].
ner operational	Assumes use at not > 20oC above ambient [G15].
rker exposure	Assumes a good basic standard of occupational hygiene has been implemented [G1]
ecific Risk Manageme	ent Measures and Operational Conditions
nly required controls to d	demonstrate safe use listed)
neral exposures osed systems) [CS15] OC1, 2, 3	No other specific measures identified. [EI20]
neral exposures (open stems) [CS16] PROC4	No other specific measures identified. [EI20]
lk transfers [CS14] CC8b	No other specific measures identified. [EI20]
ing / preparation of uipment from drums or ntainers. [CS45] PROC Bb, 9	No other specific measures identified. [EI20]
ocess sampling [CS2]	No other specific measures identified. [El20]
etal machining erations [CS79] EOC17	No other specific measures identified. [EI20]
eatment by dipping and uring [CS35] PROC13	No other specific measures identified. [EI20]
raying [CS10] PROC7	Provide a good standard of controlled ventilation (10 to 15 air changes per hour). [E40]
nual applications e.g. ishing, rolling [CS13] iOC10	No other specific measures identified. [EI20]
The property of the property o	ntrol of worker exposivical form of product incentration of instance in product ount used quency and duration of electron of the operational additions affecting received exposure ecific Risk Managemental exposures (open tems) [CS15] OC1, 2, 3 (open tems) [CS16] PROC4 (open tems) [CS16] PROC4 (open tems) [CS16] PROC4 (open tems) [CS45] PROC6 (open tems) [CS45] PROC7 (open tems) [CS45] PROC7 (open tems) [CS79] OC8b (open tems) [CS79] OC8b (open tems) [CS79] OC17 (open tems) [CS79] OC17 (open tems) [CS10] PROC7 (open tems) [CS13] (open tems) (open t



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	Automated metal rolling/ forming [CS80]Use in contained systems [CS38] Operation is carried out at elevated temp. (> then 20°C above ambient temp.) [OC7] PROC2	No other specific measures identified. [El20]
	Semi-automated metal rolling/ forming [CS83] Operation is carried out at elevated temp. (> then 20°C above ambient temp.) [OC7] PROC17	No other specific measures identified. [EI20]
	Semi-automated metal rolling/forming[CS83] PROC8b	No other specific measures identified. [El20]
	Equipment cleaning and maintenance [CS39] Dedicated facility [CS81] PROC8a	No other specific measures identified. [EI20]
	Equipment cleaning and maintenance [CS39] Non-dedicated facility [CS82] PROC1	No other specific measures identified. [EI20]
	Material storage [CS67] PROC1	No other specific measures identified. [EI20]
Section 2.2	Control of environment	al exposure
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].
	Amounts used	Fraction of EU tonnage used in region: 0.1
		Regional use tonnage (tonnes/year): 1.0E+2
		Fraction of regional tonnage used locally: 1
		Annual site tonnage (tonnes/year): 1.0E+2
		Maximum daily site tonnage (kg/day): 5.0E+3
	Frequency and duration of	Continuous release. [FD2].
	use	Emission days (days/year): 20
	Environmental factors not	Local freshwater dilution fraction: 10
	influenced by risk management	Local marine dilution fraction: 100
	Other given operational	Release fraction to air from process (initial release prior to RMM): 0.02
	conditions affecting environmental exposure	Release fraction to wastewater from process (initial release prior to RMM): 3.0E-6
		Release fraction to soil from process (initial release prior to RMM): 0
	Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used [TCS1].



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	Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Risk from environmental exposure is driven by Freshwater [TCR1a] No wastewater treatment required [TCR6].
		Treat air emission to provide a typical removal efficiency of 70%.
		Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency \geq 0.0 %
		If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0.0~\%$
	Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recover from wastewater [OMS1].
	from site	Do not apply industrial sludge to natural soils [OMS2].
		Sludge should be incinerated, contained or reclaimed [OMS3].
	Conditions and measures	Not applicable as there is no release to wastewater [STP1].
	related to municipal sewage treatment plant	Estimated substance removal from wastewater via domestic sewage treatment 93.7 $\%.$
		Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 %.
		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 2.9E+6 kg per day.
		Assumed domestic sewage treatment plant flow 2 000 m³ per day.
	Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].
	Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1].
SECTION 3	EXPOSURE ESTIMAT	TION
Section 3.1	Health	
	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. [G21].	
Section 3.2	Environment	
	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2].	
SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1	Health	
	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22].	
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23].	
Section 4.2	Environment	
	scaling may be necessary to Required removal efficiency alone or in combination [DS	med operating conditions which may not be applicable to all sites; thus, o define appropriate site-specific risk management measures [DSU1]. for wastewater can be achieved using onsite/offsite technologies, either U2]. Required removal efficiency for air can be achieved using onsite r in combination [DSU3]. Further details on scaling and control



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SECTION 1	EXPOSURE SCENARIO TITLE	
Title	17. Use in Metal working fluids / rolling oils – Professional: High Environmental release	
Use Descriptor	Sector(s) of Use	SU 22: Professional uses
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure.
		PROC 2 : Use in closed, continuous process with occasional controlled exposure.
		PROC 3: Use in closed batch process (synthesis or formulation).
		PROC 5: Mixing or blending in batch processes for formulation of preparations* and articles (multistage and/or significant contact)
		PROC 8a : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
		PROC 8b : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
		PROC 9 : Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
		PROC 10: Roller application or brushing
		PROC11: Non industrial spraying
		PROC 13: Treatment of articles by dipping and pouring
		PROC 17: Lubrication at high energy conditions and in partly open process
	Environmental Release Categories	ERC 8a : Wide dispersive indoor use of processing aids in open systems
		ERC 8d : Wide dispersive outdoor use of processing aids in open systems
	Specific Environmental Release Category	ESVOC 8.7c.v1
Processes, Tasks and Activities Covered	Covers the use in formulated MWFs including transfer operations, open and contained cutting/machining activities, automated and manual application of corrosion protections, draining and working on contaminated/ reject articles, and disposal of waste oils.	
SECTION 2	OPERATIONAL CON	DITIONS AND RISK MANAGEMENT MEASURES
Section 2.1	Control of worker exposure	
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].
characteristics	Concentration of substance in product	Up to 100% (unless stated).
	Amount used	No limit.
	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated). [G2].
	Other operational	Assumes use at not > 20oC above ambient [G15].
	conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene has been implemented [G1]



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Contributing	Specific Risk Management Measures and Operational Conditions		
Scenarios	(only required controls to demonstrate safe use listed)		
	General exposures (closed systems) [CS15] PROC1, 2, 3	Handle substance within a closed system [E47]	
	Bulk transfers [CS14] PROC8b	No other specific measures identified. [El20]	
	Filling / preparation of equipment from drums or containers. [CS45] Dedicated facility [CS81] PROC8b, 9	No other specific measures identified. [El20]	
	Filling / preparation of equipment from drums or containers. [CS45]Nondedicated facility [CS82] PROC8a	No other specific measures identified. [El20]	
	Process sampling [CS2] PROC8b	Use dedicated equipment [E85]	
	Metal machining operations [CS79] PROC17	No other specific measures identified. [El20]	
	Manual applications e.g. brushing, rolling [CS13] PROC10	No other specific measures identified. [El20]	
	Spraying [CS10] PROC11	Provide a good standard of controlled ventilation (10 to 15 air changes per hour). [E40]	
		Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE29]	
	Treatment by dipping and pouring [CS35] PROC13	Allow time for product to drain from workpiece [EI21]	
	Equipment cleaning and maintenance [CS39] Non-dedicated facility [CS82] PROC8a	No other specific measures identified. [El20]	
	Equipment cleaning and maintenance [CS39] Dedicated facility [CS81] PROC8b	No other specific measures identified. [El20]	
	Material storage [CS67] PROC1, 2	Store substance within a closed system [E84]	
	Filling / preparation of equipment from drums or containers. [CS45] PROC5	No other specific measures identified. [EI20]	
Section 2.2	Control of environment	al exposure	
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].	
	Amounts used	Fraction of EU tonnage used in region: 0.1	
		Regional use tonnage (tonnes/year): 1.9E+1	



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	The ECETOC TRA tool has [G21].	been used to estimate workplace exposures unless otherwise indicated.
Section 3.1	Health	
SECTION 3	EXPOSURE ESTIMAT	TION
	Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1].
	Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].
		Assumed domestic sewage treatment plant flow 2 000 m³ per day.
		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 2.4E+1 kg per day.
		Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 %.
	related to municipal sewage treatment plant	Estimated substance removal from wastewater via domestic sewage treatment 93.7 %.
	from site Conditions and measures	Not applicable as there is no release to wastewater [STP1].
		Sludge should be incinerated, contained or reclaimed [OMS3].
		Do not apply industrial sludge to natural soils [OMS2].
	Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recover from wastewater [OMS1].
		If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0.0~\%$
	and releases to soil	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency \geq 0.0 $\%$
	to reduce or limit discharges, air emissions	Treat air emission to provide a typical removal efficiency of N/A.
	Technical onsite conditions and measures	Risk from environmental exposure is driven by Freshwater [TCR1a] No wastewater treatment required [TCR6].
	Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used [TCS1].
		Release fraction to soil from process (initial release prior to RMM): 0.05
	conditions affecting environmental exposure	Release fraction to wastewater from process (initial release prior to RMM): 0.05
	Other operational	Release fraction to air from process (initial release prior to RMM: 1.5E-1
	influenced by risk management	Local marine dilution fraction: 100
	Environmental factors not	Local freshwater dilution fraction: 10
	use	Emission days (days/year): 365
	Frequency and duration of	Continuous release. [FD2].
		Maximum daily site tonnage (kg/day): 2.5E-2
		Annual site tonnage (tonnes/year): 9.3E-3
		Fraction of regional tonnage used locally: 1



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Section 3.2	Environment	
	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2].	
SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1	Health	
	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22].	
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23].	
Section 4.2	Environment	
	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].	

SECTION 1	EXPOSURE SCENARIO TITLE	
Title	18. Use in Agrochemicals – Professional	
Use Descriptor	Sector(s) of Use	SU 22: Professional uses
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure.
		PROC 2 : Use in closed, continuous process with occasional controlled exposure.
		PROC 4 : Use in batch and other process (synthesis) where opportunity for exposure arises
		PROC 8a : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
		PROC 8b : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
		PROC11: Non industrial spraying
		PROC 13: Treatment of articles by dipping and pouring
	Environmental Release Categories	ERC 8a : Wide dispersive indoor use of processing aids in open systems
		ERC 8d: Wide dispersive outdoor use of processing aids in open systems
	Specific Environmental Release Category	ESVOC 8.11a.v1
Processes, Tasks and Activities Covered	Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal.	



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SECTION 2 OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES Section 2.1 Control of worker exposure **Product** Physical form of product Liquid, vapour pressure < 0.5 kPa at STP [OC3]. characteristics Concentration of Up to 100% (unless stated). substance in product Amount used No limit. Frequency and duration of Covers daily exposures up to 8 hours (unless stated). [G2]. Other operational Assumes use at not > 20oC above ambient [G15]. conditions affecting Assumes a good basic standard of occupational hygiene has been worker exposure implemented [G1] Contributing Specific Risk Management Measures and Operational Conditions **Scenarios** (only required controls to demonstrate safe use listed) Transfer from/pouring No other specific measures identified. [EI20] from containers [CS22] PROC8b Mixing and blending No other specific measures identified. [EI20] [CS23] PROC4 Spraying/fogging by Ensure operation is undertaken outdoors [E69]Avoid carrying out manual application [CS24] activities involving exposure for more than 4 hours. [OC28] PROC11 Spraying/ fogging by Apply within a vented cab supplied with filtered air under positive machine application pressure and with a protection factor of >20 [E70] [CS25] PROC11 Ad hoc manual application No other specific measures identified. [EI20] via trigger sprays, dipping, etc. [CS27] PROC13 Clean-down and No other specific measures identified. [EI20] maintenance of equipment [CS26] PROC8a Disposal of wastes [CS28] No other specific measures identified. [EI20] PROC8a Material storage [CS67] Store substance within a closed system [E84] PROC1, 2 Section 2.2 Control of environmental exposure Product characteristics Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Amounts used Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 9.6E+0 Fraction of regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 1.9E-2 Maximum daily site tonnage (kg/day): 5.3E-2 Frequency and duration of Continuous release. [FD2]. Emission days (days/year): 365



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	Environmental factors not influenced by risk management	Local freshwater dilution fraction: 10
		Local marine dilution fraction: 100
	Other operational conditions affecting environmental exposure	Release fraction to air from process (initial release prior to RMM): 0.9
		Release fraction to wastewater from process (initial release prior to RMM): 0.01
		Release fraction to soil from process (initial release prior to RMM): 0.09
	Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used [TCS1].
	Technical onsite conditions and measures	Risk from environmental exposure is driven by Freshwater [TCR1a]. No wastewater treatment required [TCR6].
	to reduce or limit discharges, air emissions	Treat air emission to provide a typical removal efficiency of N/A.
	and releases to soil	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency \geq 0.0 $\%$
		If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0.0~\%$
	Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recover from wastewater [OMS1].
	from site	Do not apply industrial sludge to natural soils [OMS2].
		Sludge should be incinerated, contained or reclaimed [OMS3].
	Conditions and measures	Not applicable as there is no release to wastewater [STP1].
	related to municipal sewage treatment plant	Estimated substance removal from wastewater via domestic sewage treatment 93.7 $\%.$
		Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 %.
		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 5.1E+1 kg per day.
		Assumed domestic sewage treatment plant flow 2 000 m³ per day.
	Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].
	Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1].
SECTION 3	EXPOSURE ESTIMAT	TION
Section 3.1	Health	
	The ECETOC TRA tool has [G21].	been used to estimate workplace exposures unless otherwise indicated.
Section 3.2	Environment	
	The Hydrocarbon Block Met Petrorisk model. [EE2].	thod has been used to calculate environmental exposure with the



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SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1	Health
	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22].
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23].
Section 4.2	Environment
	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].

SECTION 1	EXPOSURE SCENARIO TITLE	
Title	19. Use in Agrochemicals – Consumer	
Use Descriptor	Sector(s) of Use	SU 21: Consumer uses
	Products Categories	PC12: Fertilizers
		PC 27: Plant protection products
	Environmental Release Categories	ERC 8a : Wide dispersive indoor use of processing aids in open systems.
		ERC 8d : Wide dispersive outdoor use of processing aids in open systems.
	Specific Environmental Release Category	8.11b.v1
Processes, Tasks and Activities Covered	Covers the consumer use in agrochemicals in liquid and solid forms.	
SECTION 2	OPERATIONAL CON	DITIONS AND RISK MANAGEMENT MEASURES
Section 2.1	Control of consumer ex	posure
Product	Physical form of product	Liquid, vapour pressure > 10 Pa STP [OC15]
characteristics	Vapour Pressure (Pa)	231
	Concentration of substance in product	Unless otherwise stated, cover concentrations up to 100 %. [ConsOC1].
	Amounts used	Covers skin contact area up to 857.5cm2 [ConsOC5]
	Frequency and duration of use/exposure	Unless otherwise stated, covers use frequency up to 365 days per year [ConsOC3]; Unless otherwise stated, covers use frequency up to 1 times per day [ConsOC4]; covers exposure up to 4 hours per event [ConsOC14]
	Other operational conditions affecting	Unless otherwise stated assumes use at ambient temperatures [ConsOC15]; assumes use in a 20 m3 room [ConsOC11]; assumes use
	exposure	with typical ventilation [ConsOC8].



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Product	Specific Risk Managem	ent Measures and Operating Conditions	
Category	(only required controls to demonstrate safe use listed)		
PC12:Fertilizers - Lawn and garden preparations	Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, assumes swallowed amount of 0.3g [ConsOC13]; for each use event, covers exposure up to 4.00hr/event [ConsOC14];		
	No specific RMMs identified beyond those OCs stated.		
PC27_n: Plant protection products	days/year [ConsOC3]; coverto 857.50 cm2 [ConsOC5]; t	vers concentrations up to 50% [ConsOC1]; covers use up to 365 rs use up to 1 time/on day of use [ConsOC4]; covers skin contact area up for each use event, assumes swallowed amount of 0.3g [ConsOC13]; for osure up to 4.00hr/event [ConsOC14];	
	No specific RMMs identified	beyond those OCs stated.	
Section 2.2	Control of environment	al exposure	
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].	
	Amounts used	Fraction of EU tonnage used in region: 0.1	
		Regional use tonnage (tonnes/year): 1.8E+0	
		Fraction of regional tonnage used locally: 0.0005	
		Annual site tonnage (tonnes/year): 3.6E-3	
		Maximum daily site tonnage (kg/day): 9.9E-3	
	Frequency and duration of	Continuous release. [FD2].	
	use	Emission days (days/year): 365	
	Environmental factors not	Local freshwater dilution fraction: 10	
	influenced by risk management	Local marine dilution fraction: 100	
	Other given operational	Release fraction to air from process (initial release prior to RMM): 0.9	
	conditions affecting environmental exposure	Release fraction to wastewater from process (initial release prior to RMM): 0.01	
		Release fraction to soil from process (initial release prior to RMM): 0.09	
	Conditions and measures related to municipal sewage treatment plant	Not applicable as there is no release to wastewater [STP1].	
		Estimated substance removal from wastewater via domestic sewage treatment 93.7 $\%$.	
		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release (kg/d) 9.7E+0.	
		Assumed domestic sewage treatment plant flow (m³/day): 2000	
	Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].	
	Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1].	
SECTION 3	EXPOSURE ESTIMATION		
Section 3.1	Health		
	The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated. G30.		



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Section 3.2	Environment	
	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2].	
SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1	Health	
	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. G22.	
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23.	
Section 4.2	Environment	
	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].	

SECTION 1	EXPOSURE SCENARIO TITLE	
Title	20. Use as a Fuel – Industrial	
Use Descriptor	Sector(s) of Use	SU 3: Industrial uses
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure.
		PROC 2 : Use in closed, continuous process with occasional controlled exposure.
		PROC 3: Use in closed batch process (synthesis or formulation).
		PROC 8a : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
		PROC 8b : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
		PROC 16 : Using material as fuel sources, limited exposure to unburned product to be expected
	Environmental Release Categories	ERC 7: Industrial use of sub-stances in closed systems
	Specific Environmental Release Category	ESVOC 7.12a.v1
Processes, Tasks and Activities Covered	Covers the use as a fuel (or equipment maintenance and	fuel additive) and includes activities associated with its transfer, use, d handling of waste.
SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of worker exposure	
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].
characteristics	Concentration of substance in product	Up to 100% (unless stated).
	Amount used	No limit.
	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated). [G2].



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	Other operational	Assumes use at not > 20oC above ambient [G15].
	conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene has been implemented [G1]
Contributing	Specific Risk Managem	ent Measures and Operational Conditions
Scenarios	(only required controls to	demonstrate safe use listed)
	Bulk transfers [CS14] PROC8b	Handle substance within a closed system [E47]
	Drum/batch transfers [CS8] PROC8b	No other specific measures identified. [El20]
	General exposures (closed systems) [CS15] Use in contained batch processes [CS37] PROC1,2, 3	Handle substance within a closed system [E47]
	General exposures (closed systems) [CS15] PROC1, 2	Handle substance within a closed system [E47]
	Use as a fuel [GEST12] PROC16	Handle substance within a closed system [E47]
	General exposures (closed systems) [CS15] (closed systems) [CS107] PROC3	Handle substance within a closed system [E47]
	Equipment cleaning and maintenance [CS39] PROC8a	No other specific measures identified. [EI20]
	Material storage [CS67]	Store substance within a closed system [E84]
	PROC1, 2	Transfer via enclosed lines [E52]
Section 2.2	Control of environment	al exposure
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].
	Amounts used	Fraction of EU tonnage used in region: 0.1
		Regional use tonnage (tonnes/year): 1.0E+2
		Fraction of regional tonnage used locally: 1
		Annual site tonnage (tonnes/year): 1.0E+2
		Maximum daily site tonnage (kg/day): 5.0E+3
	Frequency and duration of use	Continuous release. [FD2].
		Emission days (days/year): 20
	Environmental factors not	Local freshwater dilution fraction: 10
	influenced by risk management	Local marine dilution fraction: 100
	Other operational conditions affecting environmental exposure	Release fraction to air from process (initial release prior to RMM: 5.0E-3
		Release fraction to wastewater from process (initial release prior to RMM): 0.00001
		Release fraction to soil from process (initial release prior to RMM): 0



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i		
	Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used [TCS1].
	Technical onsite conditions and measures	Risk from environmental exposure is driven by Freshwater Sediment [TCR1b]. No wastewater treatment required [TCR6].
	to reduce or limit discharges, air emissions	Treat air emission to provide a typical removal efficiency of 95%.
	and releases to soil	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency \geq 0.0 $\%$
		If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of \geq 0.0 $\%$
	Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recover from wastewater [OMS1].
	from site	Do not apply industrial sludge to natural soils [OMS2].
		Sludge should be incinerated, contained or reclaimed [OMS3].
	Conditions and measures	Not applicable as there is no release to wastewater [STP1].
	related to municipal sewage treatment plant	Estimated substance removal from wastewater via domestic sewage treatment 93.7 $\%.$
		Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 %.
		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 1.9E+6 kg per day.
		Assumed domestic sewage treatment plant flow 2 000 m³ per day.
	Conditions and measures related to external treatment of waste for disposal	Combustion emissions limited by required exhaust emission controls [ETW1]. Combustion emissions considered in regional exposure assessment [ETW2].
	Conditions and measures related to external recovery of waste	This substance is consumed during use and no waste of the substance is generated [ERW3].
SECTION 3	EXPOSURE ESTIMAT	TION
Section 3.1	Health	
	The ECETOC TRA tool has [G21].	been used to estimate workplace exposures unless otherwise indicated.
Section 3.2	Environment	
	The Hydrocarbon Block Met Petrorisk model. [EE2].	thod has been used to calculate environmental exposure with the
SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1	Health	
		t expected to exceed the DN(M)EL when the Risk Management litions outlined in Section 2 are implemented. [G22].
		nent Measures/Operational Conditions are adopted, then users should led to at least equivalent levels. [G23].



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Section 4.2	Environment
	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].

SECTION 1	EXPOSURE SCENARIO TITLE	
Title	21. Use as a Fuel – Prof	fessional
Use Descriptor	Sector(s) of Use	SU 22: Professional uses
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure.
		PROC 2 : Use in closed, continuous process with occasional controlled exposure.
		PROC 3: Use in closed batch process (synthesis or formulation)
		PROC 8a : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
		PROC 8b : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
		PROC 16 : Using material as fuel sources, limited exposure to unburned product to be expected
	Environmental Release	ERC 9a: Wide dispersive indoor use of substances in closed systems
	Categories	ERC 9b: Wide dispersive outdoor use of substances in closed systems
	Specific Environmental Release Category	ESVOC 9.12b.v1
Processes, Tasks and Activities Covered	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.	
SECTION 2	OPERATIONAL CONI	DITIONS AND RISK MANAGEMENT MEASURES
Section 2.1	Control of worker exposure	
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].
characteristics	Concentration of substance in product	Up to 100% (unless stated).
	Amount used	No limit.
	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated). [G2].
	Other operational conditions affecting worker exposure	Assumes use at not > 20oC above ambient [G15].
		Assumes a good basic standard of occupational hygiene has been implemented [G1]
Contributing	Specific Risk Management Measures and Operational Conditions	
Scenarios	(only required controls to demonstrate safe use listed)	
	Bulk transfers [CS14] PROC8b	Handle substance within a closed system [E47]Clear transfer lines prior to de-coupling [E39]



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	Drum/batch transfers [CS8] PROC8b	No other specific measures identified. [El20]
	Refueling [CS507] PROC8b	No other specific measures identified. [El20]
	General exposures (closed systems) [CS15] PROC1, 2	Handle substance within a closed system [E47]
	General exposures (closed systems) [CS15] (closed systems) [CS107] PROC3	No other specific measures identified. [El20]
	Use as a fuel [GEST12] PROC16	No other specific measures identified. [EI20]
	Equipment cleaning and maintenance [CS39] PROC8a	No other specific measures identified. [El20]
	Material storage [CS67] PROC1	Store substance within a closed system [E84]
Section 2.2	Control of environment	al exposure
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].
	Amounts used	Fraction of EU tonnage used in region: 0.1
		Regional use tonnage (tonnes/year): 1.0E+2
		Fraction of regional tonnage used locally: 1
		Annual site tonnage (tonnes/year): 5.0E-2
		Maximum daily site tonnage (kg/day): 1.4E-1
	Frequency and duration of	Continuous release. [FD2].
	use	Emission days (days/year): 365
	Environmental factors not	Local freshwater dilution fraction: 10
	influenced by risk management	Local marine dilution fraction: 100
	Other operational	Release fraction to air from process (initial release prior to RMM: 1.0E-4
	conditions affecting environmental exposure	Release fraction to wastewater from process (initial release prior to RMM): 0.00001
		Release fraction to soil from process (initial release prior to RMM): 0.00001
	Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used [TCS1].
	Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Risk from environmental exposure is driven by Freshwater [TCR1a]. No wastewater treatment required [TCR6].
		Treat air emission to provide a typical removal efficiency of N/A.
		Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency \geq 0.0 $\%$
		If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0.0~\%$



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	Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recover from wastewater [OMS1].
	from site	Do not apply industrial sludge to natural soils [OMS2].
		Sludge should be incinerated, contained or reclaimed [OMS3].
	Conditions and measures	Not applicable as there is no release to wastewater [STP1].
	related to municipal sewage treatment plant	Estimated substance removal from wastewater via domestic sewage treatment 93.7 $\%$.
		Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 %.
		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 1.4E+2 kg per day.
		Assumed domestic sewage treatment plant flow 2 000 m³ per day.
	Conditions and measures related to external treatment of waste for disposal	Combustion emissions limited by required exhaust emission controls [ETW1]. Combustion emissions considered in regional exposure assessment [ETW2].
	Conditions and measures related to external recovery of waste	This substance is consumed during use and no waste of the substance is generated [ERW3].
SECTION 3	EXPOSURE ESTIMAT	TION
Section 3.1	Health	
	The ECETOC TRA tool has [G21].	been used to estimate workplace exposures unless otherwise indicated.
Section 3.2	Environment	
	The Hydrocarbon Block Me Petrorisk model. [EE2].	thod has been used to calculate environmental exposure with the
SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1	Health	
		t expected to exceed the DN(M)EL when the Risk Management ditions outlined in Section 2 are implemented. [G22].
		nent Measures/Operational Conditions are adopted, then users should ged to at least equivalent levels. [G23].
Section 4.2	Environment	
	scaling may be necessary to	med operating conditions which may not be applicable to all sites; thus, o define appropriate site-specific risk management measures [DSU1].

SECTION 1	EXPOSURE SCENARIO TITLE	
Title	22. Use as a Fuel – Consumer	
Use Descriptor	Sector(s) of Use	SU 21: Consumer uses
	Products Categories	PC13: Fuels



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	Environmental Release	ERC 9a: Wide dispersive indoor use of substances in closed	d systems
	Categories	ERC 9b: Wide dispersive outdoor use of substances in close	-
	Specific Environmental Release Category	9.12c.v1	·
Processes, Tasks and Activities Covered	Covers consumer uses in lic	quid fuels.	
SECTION 2	OPERATIONAL CON	DITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of consumer ex	posure	
Product	Physical form of product	Liquid, vapour pressure > 10 Pa STP [OC15]	
characteristics	Vapour Pressure (Pa)	231	
	Concentration of substance in product	Unless otherwise stated, cover concentrations up to 100 %.	[ConsOC1].
	Amounts used	Unless otherwise stated, covers use amounts up to 37500g [ConsOC2]; covers skin contact area up to 420cm2 [ConsOC	:5]
	Frequency and duration of use/exposure	Unless otherwise stated, covers use frequency up to 365 da [ConsOC3];Unless otherwise stated, covers use frequency utimes per day [ConsOC4];covers exposure up to 2 hours per [ConsOC14]	ip to 1
	Other operational conditions affecting exposure	Unless otherwise stated assumes use at ambient temperatu [ConsOC15]; assumes use in a 20 m3 room [ConsOC11]; as with typical ventilation [ConsOC8].	
Product	Specific Risk Managem	ent Measures and Operating Conditions	
Category	(only required controls to	demonstrate safe use listed)	
PC13: Fuels - liquid - subcategories added: Automotive Refuelling	days/year [ConsOC3]; cove to 210.00 cm2 [ConsOC5]; to outdoor use [ConsOC12]; co	Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 52 days/year [ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 210.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 37500g [ConsOC2]; covers outdoor use [ConsOC12]; covers use in room size of 100m3 [ConsOC11]; for each use event, covers exposure up to 0.05hr/event [ConsOC14];	
	No specific RMMs identified	beyond those OCs stated.	
PC13: Fuels - liquid - subcategories added: Scooter Refuelling	Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 52 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 210.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 3750g [ConsOC2]; covers outdoor use [ConsOC12]; covers use in room size of 100m3 [ConsOC11]; for each use event, covers exposure up to 0.03hr/event [ConsOC14];		tact area up C2]; covers
	No specific RMMs identified	beyond those OCs stated.	
PC13: Fuels - liquid - subcategories added: Garden Equipment - Use	days/year [ConsOC3]; coveruse amounts up to 750g [Co	vers concentrations up to 100% [ConsOC1]; covers use up to rs use up to 1 time/on day of use [ConsOC4]; for each use evensOC2]; covers outdoor use [ConsOC12]; covers use in room the use event, covers exposure up to 2.00hr/event [ConsOC14]	ent, covers n size of
	No specific RMMs identified	beyond those OCs stated.	
PC13:Fuels - liquid - subcategories added: Garden Equipment - Refueling	days/year [ConsOC3]; cove to 420.00 cm2 [ConsOC5]; t use in a one car garage (34	vers concentrations up to 100% [ConsOC1]; covers use up to rs use up to 1 time/on day of use [ConsOC4]; covers skin confor each use event, covers use amounts up to 750g [ConsOC2m3) under typical ventilation [ConsOC10]; covers use in room use event, covers exposure up to 0.03hr/event [ConsOC14];	tact area up 2]; Covers



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PC13:Fuels - liquid - subcategories added: Home space heater fuel	Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 210.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 3000g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 0.03hr/event[ConsOC14];		
	No specific RMMs identified beyond those OCs stated.		
PC13:FuelsLiquid - subcategories added: Lamp oil	Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 52 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 210.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 100g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 0.01hr/event [ConsOC14];		
	No specific RMMs identified	beyond those OCs stated.	
Section 2.2	Control of environment	al exposure	
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].	
	Amounts used	Fraction of EU tonnage used in region: 0.1	
		Regional use tonnage (tonnes/year): 2.9E+1	
		Fraction of regional tonnage used locally: 0.0005	
		Annual site tonnage (tonnes/year): 1.5E-2	
		Maximum daily site tonnage (kg/day): 4.0E-2	
	Frequency and duration of	Continuous release. [FD2].	
	use	Emission days (days/year): 365	
	Environmental factors not	Local freshwater dilution fraction: 10	
	influenced by risk management	Local marine dilution fraction: 100	
	Other given operational	Release fraction to air from process (initial release prior to RMM: 1.0E-4	
	conditions affecting environmental exposure	Release fraction to wastewater from process (initial release prior to RMM): 0.00001	
		Release fraction to soil from process (initial release prior to RMM): 0.00001	
	Conditions and measures	Not applicable as there is no release to wastewater [STP1].	
	related to municipal sewage treatment plant	Estimated substance removal from wastewater via domestic sewage treatment 93.7 $\%.$	
		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release (kg/d) 3.9E+1.	
		Assumed domestic sewage treatment plant flow (m³/day): 2000	
	Conditions and measures related to external treatment of waste for disposal	Combustion emissions limited by required exhaust emission controls [ETW1]. Combustion emissions considered in regional exposure assessment [ETW2].	
	Conditions and measures related to external recovery of waste	This substance is consumed during use and no waste of the substance is generated [ERW3].	
SECTION 3	EXPOSURE ESTIMATION		
Section 3.1	Health		
	The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated. G30.		



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Section 3.2	Environment
	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2].
SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1	Health
	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. G22.
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23.
Section 4.2	Environment
	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].

SECTION 1	EXPOSURE SCENARIO TITLE		
Title	23. Use as Functional Fluids – Industrial		
Use Descriptor	Sector(s) of Use	SU 3: Industrial uses	
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure.	
		PROC 2 : Use in closed, continuous process with occasional controlled exposure.	
		PROC 3: Use in closed batch process (synthesis or formulation)	
		PROC 4 : Use in batch and other process (synthesis) where opportunity for exposure arises	
		PROC 8a : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.	
		PROC 8b : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.	
		PROC 9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	
	Environmental Release Categories	ERC 7: Industrial use of sub-stances in closed systems	
	Specific Environmental Release Category	ESVOC 7.13a.v1	
Processes, Tasks and Activities Covered	Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in industrial equipment including maintenance and related material transfers.		
SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Section 2.1	Control of worker exposure		
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].	
characteristics	Concentration of substance in product	Up to 100% (unless stated).	
	Amount used	No limit.	



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Frequency and duration of Covers daily exposures up to 8 hours (unless stated). [G2]. Other operational Assumes use at not > 20oC above ambient [G15]. conditions affecting Assumes a good basic standard of occupational hygiene has been worker exposure implemented [G1] Contributing Specific Risk Management Measures and Operational Conditions **Scenarios** (only required controls to demonstrate safe use listed) Bulk transfers [CS14] No other specific measures identified. [EI20] (closed systems) [CS107] PROC1, 2 Drum/batch transfers No other specific measures identified. [EI20] [CS8] PROC8b Filling of articles/ No other specific measures identified. [EI20] equipment [CS84] (closed systems) [CS107] PROC9 Filling / preparation of No other specific measures identified. [EI20] equipment from drums or containers. [CS45] PROC8a General exposures No other specific measures identified. [EI20] (closed systems) [CS15] PROC2, 3 General exposures (open No other specific measures identified. [EI20] systems) [CS16] PROC4 Remanufacture of reject No other specific measures identified. [EI20] articles [CS19] PROC9 Equipment maintenance No other specific measures identified. [EI20] [CS5] PROC8a Material storage [CS67] No other specific measures identified. [EI20] PROC1, 2 Section 2.2 Control of environmental exposure Product characteristics Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Amounts used Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 1.0E+2 Fraction of regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 1.0E+1 Maximum daily site tonnage (kg/day): 5.0E+2 Frequency and duration of Continuous release. [FD2]. use Emission days (days/year): 20 Environmental factors not Local freshwater dilution fraction: 10 influenced by risk Local marine dilution fraction: 100 management Other operational Release fraction to air from process (initial release prior to RMM: 5.0E-3 conditions affecting Release fraction to wastewater from process (initial release prior to environmental exposure RMM): 3.0E-6



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		Release fraction to soil from process (initial release prior to RMM): 0.001	
	Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used [TCS1].	
	Technical onsite conditions and measures	Risk from environmental exposure is driven by Freshwater [TCR1a]. No wastewater treatment required [TCR6].	
	to reduce or limit discharges, air emissions	Treat air emission to provide a typical removal efficiency of 0 $\%$.	
	and releases to soil	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency $\geq 0.0~\%$	
		If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0.0~\%$	
	Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recover from wastewater [OMS1].	
	from site	Do not apply industrial sludge to natural soils [OMS2].	
		Sludge should be incinerated, contained or reclaimed [OMS3].	
	Conditions and measures related to municipal	Not applicable as there is no release to wastewater [STP1].	
	sewage treatment plant	Estimated substance removal from wastewater via domestic sewage treatment 93.7 $\%.$	
		Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 %.	
		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 4.6E+5 kg per day.	
		Assumed domestic sewage treatment plant flow 2 000 m³ per day.	
	Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].	
	Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1].	
SECTION 3	EXPOSURE ESTIMAT	TION	
Section 3.1	Health		
	The ECETOC TRA tool has [G21].	been used to estimate workplace exposures unless otherwise indicated.	
Section 3.2	Environment		
	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2].		
SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO		
Section 4.1	Health		
	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22].		
	Where other Risk Managem	nent Measures/Operational Conditions are adopted, then users should ged to at least equivalent levels. [G23].	



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Section 4.2	Environment
	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].

SECTION 1	EXPOSURE SCENARIO TITLE		
Title	24. Use as Functional F	luids – Professional	
Use Descriptor	Sector(s) of Use	SU 22: Professional uses:	
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure.	
		PROC 2 : Use in closed, continuous process with occasional controlled exposure.	
		PROC 3: Use in closed batch process (synthesis or formulation)	
		PROC 8a : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.	
		PROC 9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	
		PROC 20 : Heat and pressure transfer fluids in dispersive, professional use but closed systems	
	Environmental Release	ERC 9a: Wide dispersive indoor use of substances in closed systems	
	Categories	ERC 9b: Wide dispersive outdoor use of substances in closed systems	
	Specific Environmental Release Category	ESVOC 9.13b.v1	
Processes, Tasks and Activities Covered	Use as functional fluids e.g. cable oils, transfer oils, insulators, refrigerants, hydraulic fluids in professional equipment including maintenance and related material transfers.		
SECTION 2	OPERATIONAL CON	DITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of worker expos	sure	
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].	
characteristics	Concentration of substance in product	Up to 100% (unless stated).	
	Amount used	No limit.	
	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated). [G2].	
	Other operational	Assumes use at not > 20oC above ambient [G15].	
	conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene has been implemented [G1]	
Contributing	Specific Risk Management Measures and Operational Conditions		
Scenarios	(only required controls to demonstrate safe use listed)		
	Drum/batch transfers [CS8] PROC8a	No other specific measures identified. [El20]	



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Date: 7.11.2014 ID 10523 Previous date: 10.8.2012 Transfer from/pouring No other specific measures identified, [EI20]

	Transfer from/pouring from containers [CS22] PROC9	No other specific measures identified. [EI20]
	Filling / preparation of equipment from drums or containers. [CS45] PROC9	No other specific measures identified. [EI20]
	General exposures (closed systems) [CS15] PROC1, 2, 3	No other specific measures identified. [El20]
	Operation of equipment containing engine oils and similar [CS26] PROC20	No other specific measures identified. [El20]
	Operation of equipment containing engine oils and similar [CS26]Operation is carried out at elevated temp. (> then 20°C above ambient temperature) [OC7] PROC20	No other specific measures identified. [EI20]
	Remanufacture of reject articles [CS19] PROC9	No other specific measures identified. [El20]
	Equipment maintenance [CS5] PROC8a	No other specific measures identified. [El20]
	Material storage [CS67] PROC1, 2	Store substance within a closed system [E84]
Section 2.2	Control of environment	al exposure
<u> </u>		•
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].
	Product characteristics Amounts used	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic.
		Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].
		Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1
		Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 1.0E+2
		Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 1.0E+2 Fraction of regional tonnage used locally: 1
	Amounts used Frequency and duration of	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 1.0E+2 Fraction of regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 5.0E-2
	Amounts used	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 1.0E+2 Fraction of regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 5.0E-2 Maximum daily site tonnage (kg/day): 1.4E-1
	Amounts used Frequency and duration of use Environmental factors not	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 1.0E+2 Fraction of regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 5.0E-2 Maximum daily site tonnage (kg/day): 1.4E-1 Continuous release. [FD2].
	Amounts used Frequency and duration of use	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 1.0E+2 Fraction of regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 5.0E-2 Maximum daily site tonnage (kg/day): 1.4E-1 Continuous release. [FD2]. Emission days (days/year): 365
	Amounts used Frequency and duration of use Environmental factors not influenced by risk management Other operational	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 1.0E+2 Fraction of regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 5.0E-2 Maximum daily site tonnage (kg/day): 1.4E-1 Continuous release. [FD2]. Emission days (days/year): 365 Local freshwater dilution fraction: 10
	Amounts used Frequency and duration of use Environmental factors not influenced by risk management	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 1.0E+2 Fraction of regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 5.0E-2 Maximum daily site tonnage (kg/day): 1.4E-1 Continuous release. [FD2]. Emission days (days/year): 365 Local freshwater dilution fraction: 10 Local marine dilution fraction: 100
	Amounts used Frequency and duration of use Environmental factors not influenced by risk management Other operational conditions affecting	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 1.0E+2 Fraction of regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 5.0E-2 Maximum daily site tonnage (kg/day): 1.4E-1 Continuous release. [FD2]. Emission days (days/year): 365 Local freshwater dilution fraction: 10 Local marine dilution fraction: 100 Release fraction to air from process (initial release prior to RMM): 0.05 Release fraction to wastewater from process (initial release prior to
	Amounts used Frequency and duration of use Environmental factors not influenced by risk management Other operational conditions affecting	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 1.0E+2 Fraction of regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 5.0E-2 Maximum daily site tonnage (kg/day): 1.4E-1 Continuous release. [FD2]. Emission days (days/year): 365 Local freshwater dilution fraction: 10 Local marine dilution fraction: 100 Release fraction to air from process (initial release prior to RMM): 0.05 Release fraction to soil from process (initial release prior to RMM):



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	Technical onsite conditions and measures	Risk from environmental exposure is driven by Freshwater [TCR1a]. No wastewater treatment required [TCR6].
	to reduce or limit discharges, air emissions	Treat air emission to provide a typical removal efficiency of N/A.
	and releases to soil	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency \geq 0.0 %
		If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0.0~\%$
	Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recover from wastewater [OMS1].
	from site	Do not apply industrial sludge to natural soils [OMS2].
		Sludge should be incinerated, contained or reclaimed [OMS3].
	Conditions and measures	Not applicable as there is no release to wastewater [STP1].
	related to municipal sewage treatment plant	Estimated substance removal from wastewater via domestic sewage treatment 93.7 $\%.$
		Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 %.
		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 1.2E+2 kg per day.
		Assumed domestic sewage treatment plant flow 2 000 m³ per day.
	Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].
	Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1].
SECTION 3	EXPOSURE ESTIMAT	TION
Section 3.1	Health	
	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. [G21].	
Section 3.2	Environment	
	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2].	
SECTION 4	GUIDANCE TO CHEC	K COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1	Health	
		t expected to exceed the DN(M)EL when the Risk Management litions outlined in Section 2 are implemented. [G22].
		ent Measures/Operational Conditions are adopted, then users should ed to at least equivalent levels. [G23].
Section 4.2	Environment	
	scaling may be necessary to Required removal efficiency alone or in combination [DS	med operating conditions which may not be applicable to all sites; thus, o define appropriate site-specific risk management measures [DSU1]. for wastewater can be achieved using onsite/offsite technologies, either U2]. Required removal efficiency for air can be achieved using onsite r in combination [DSU3]. Further details on scaling and control



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SECTION 1	EXPOSURE SCENAR	IO TITLE	
Title	25. Use as Functional Fluids – Consumer		
Use Descriptor	Sector(s) of Use	SU 21: Consumer uses	
	Products Categories	PC16: Heat transfer fluids	
		PC 17: Hydraulic fluids	
	Environmental Release	ERC 9a: Wide dispersive indoor use of substances in closed systems	
	Categories	ERC 9b: Wide dispersive outdoor use of substances in closed systems	
	Specific Environmental Release Category	9.13c.v1	
Processes, Tasks and Activities Covered	Use of sealed items contain	ing functional fluids e.g. transfer oils, hydraulic fluids, refrigerants.	
SECTION 2	OPERATIONAL CONI	DITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of consumer ex	posure	
Product	Physical form of product	Liquid, vapour pressure > 10 Pa STP [OC15]	
characteristics	Vapour Pressure (Pa)	231	
	Concentration of substance in product	Unless otherwise stated, cover concentrations up to 100 %. [ConsOC1].	
	Amounts used	Unless otherwise stated, covers use amounts up to2200g [ConsOC2];covers skin contact area up to 468cm2 [ConsOC5]	
	Frequency and duration of use/exposure	Unless otherwise stated, covers use frequency up to 4 days per year [ConsOC3];Unless otherwise stated, covers use frequency up to 1 times per day [ConsOC4];covers exposure up to 0.17 hours per event [ConsOC14]	
	Other operational conditions affecting exposure	Unless otherwise stated assumes use at ambient temperatures [ConsOC15]; assumes use in a 20 m3 room [ConsOC11]; assumes use with typical ventilation [ConsOC8].	
Product	Specific Risk Managem	ent Measures and Operating Conditions	
Category	(only required controls to demonstrate safe use listed)		
PC16_n: Heat transfer fluids Liquids	Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 4 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 468.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 2200g [ConsOC2]; Covers use in a one car garage (34m3) under typcial ventilation [ConsOC10]; covers use in room size of 34m3[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];		
	No specific RMMs identified beyond those OCs stated.		
PC17_n: Hydraulic fluidsLiquids	Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 4 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 468.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 2200g [ConsOC2]; Covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];		
	No specific RMMs identified	beyond those OCs stated.	
Section 2.2	Control of environment	al exposure	
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].	
	I		



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	Amounts used	Fraction of EU tonnage used in region: 0.1	
		Regional use tonnage (tonnes/year): 2.0E+1	
		Fraction of regional tonnage used locally: 0.0005	
		Annual site tonnage (tonnes/year): 1.0E-2	
		Maximum daily site tonnage (kg/day): 2.7E-2	
	Frequency and duration of	Continuous release. [FD2].	
	use	Emission days (days/year): 365	
	Environmental factors not influenced by risk	Local freshwater dilution fraction: 10	
	management	Local marine dilution fraction: 100	
	Other given operational conditions affecting	Release fraction to air from process (initial release prior to RMM	M): 0.05
	environmental exposure	Release fraction to wastewater from process (initial release prid RMM): 0.25	or to
		Release fraction to soil from process (initial release prior to RM 0.025	IM):
	Conditions and measures	Not applicable as there is no release to wastewater [STP1].	
	related to municipal sewage treatment plant	Estimated substance removal from wastewater via domestic set reatment 93.7 $\%.$	ewage
		Maximum allowable site tonnage (MSafe) based on domestic s treatment release (kg/d) 2.6E+1.	ewage
		Assumed domestic sewage treatment plant flow (m³/day): 2000)
	Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with a local and/or national regulations [ETW3].	pplicable
	Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with a local and/or national regulations [ERW1].	oplicable
SECTION 3	EXPOSURE ESTIMAT	TION	
Section 3.1	Health		
	The ECETOC TRA has bee	n used to estimate consumer exposures unless otherwise indicat	ted. G30.
Section 3.2	Environment		
	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2].)
SECTION 4	GUIDANCE TO CHEC	K COMPLIANCE WITH THE EXPOSURE SCENAR	10
Section 4.1	Health		
		t expected to exceed the DN(M)EL when the Risk Management litions outlined in Section 2 are implemented. G22.	
		ent Measures/Operational Conditions are adopted, then users shed to at least equivalent levels. G23.	hould
Section 4.2	Environment		
	scaling may be necessary to Further details on scaling ar	med operating conditions which may not be applicable to all sites of define appropriate site-specific risk management measures [DS and control technologies are provided in SpERC factsheet -industries-libraries.html) [DSU4].	



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SECTION 1	EXPOSURE SCENARIO TITLE		
Title	26. Use in Road and Co	nstruction Applications – Professional	
Use Descriptor	Sector(s) of Use	SU 22: Professional uses	
	Process Categories	PROC 8a : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.	
		PROC 8b : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.	
		PROC 9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	
		PROC 10: Roller application or brushing	
		PROC 11: Non industrial spraying	
		PROC 13: Treatment of articles by dipping and pouring	
	Environmental Release Categories	ERC 8d : Wide dispersive outdoor use of processing aids in open systems	
		ERC 8f : Wide dispersive outdoor use resulting in inclusion into or onto a matrix	
	Specific Environmental Release Category	ESVOC 8.15.v1	
Processes, Tasks and Activities Covered	Application of surface coatings and binders in road and construction activities, including paving uses, manual mastic and in the application of roofing and water-proofing membranes.		
SECTION 2	OPERATIONAL CON	DITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of worker expos	sure	
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].	
characteristics	Concentration of substance in product	Up to 100% (unless stated).	
	Amount used	No limit.	
	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated). [G2].	
	Other operational	Assumes use at not > 20oC above ambient [G15].	
	conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene has been implemented [G1]	
Contributing	Specific Risk Management Measures and Operational Conditions		
Scenarios	(only required controls to demonstrate safe use listed)		
	Drum/batch transfers [CS8] Non-dedicated facility [CS82] PROC8a	No other specific measures identified. [El20]	
	Drum/batch transfers	Use dedicated equipment [E85]Clear transfer lines prior to de-coupling	
	[CS8]Dedicated facility [CS81] PROC8b	[E39]	



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Drum/batch transfers Use dedicated equipment [E85]Clear transfer lines prior to de-coupling [CS8] Dedicated facility [E39] [CS81] Operation is carried out at elevated temp. (> then 20°C above ambient temp.) [OC7] PROC8b Manual applications e.g. No other specific measures identified. [EI20] brushing, rolling [CS13] PROC10 Spraying/fogging by Ensure operation is undertaken outdoors [E69] machine application Wear a respirator conforming to EN140 with Type A filter or better. [CS25] Operation is [PPE22] carried out at elevated temp.(> then 20°C above ambient temp.) [OC7] PROC11 Spraying/fogging by Provide a good standard of controlled ventilation (10 to 15 air changes machine application per hour). [E40] [CS25] PROC11 Dipping, immersion and No other specific measures identified. [EI20] pouring [CS4] PROC13 Equipment cleaning and Retain drain downs in sealed storage pending disposal or for maintenance [CS39] subsequent recycle [ENVT4] PROC8a Drum and small package No other specific measures identified. [EI20] filling [CS6] PROC9 Section 2.2 Control of environmental exposure Product characteristics Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Amounts used Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 1.9E+2 Fraction of regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 9.3E-2 Maximum daily site tonnage (kg/day): 2.5E-1 Continuous release. [FD2]. Frequency and duration of use Emission days (days/year): 365 Environmental factors not Local freshwater dilution fraction: 10 influenced by risk Local marine dilution fraction: 100 management Other operational Release fraction to air from process (initial release prior to RMM): 0.95 conditions affecting Release fraction to wastewater from process (initial release prior to environmental exposure RMM): 0.01 Release fraction to soil from process (initial release prior to RMM): 0.04 Technical conditions and Common practices vary across sites thus conservative process release measures at process level estimates used [TCS1]. (source) to prevent release



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T. 16 (1) 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Risk from environmental exposure is driven by Freshwater [TCR1a]. No wastewater treatment required [TCR6].
	Treat air emission to provide a typical removal efficiency of N/A.
	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency $\geq 0.0~\%$
	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0.0~\%$
Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recover from wastewater [OMS1].
from site	Do not apply industrial sludge to natural soils [OMS2].
	Sludge should be incinerated, contained or reclaimed [OMS3].
Conditions and measures	Not applicable as there is no release to wastewater [STP1].
related to municipal sewage treatment plant	Estimated substance removal from wastewater via domestic sewage treatment 93.7 $\%$.
	Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 %.
	Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 2.3E+2 kg per day.
	Assumed domestic sewage treatment plant flow 2 000 m³ per day.
Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].
Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1].
EXPOSURE ESTIMAT	TION
Health	
The ECETOC TRA tool has [G21].	been used to estimate workplace exposures unless otherwise indicated.
Environment	
The Hydrocarbon Block Method has been used to calculate environmental exposure with the	
GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Health	
•	t expected to exceed the DN(M)EL when the Risk Management ditions outlined in Section 2 are implemented. [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23].	
Environment	
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].	
	to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent / limit release from site Conditions and measures related to municipal sewage treatment plant Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste EXPOSURE ESTIMAT Health The ECETOC TRA tool has [G21]. Environment The Hydrocarbon Block Me Petrorisk model. [EE2]. GUIDANCE TO CHECH Health Predicted exposures are no Measures/Operational Conductions with the measure that risks are managements are monthly and the measure that risks are managements are monthly and the measure says to the measure that risks are managements are monthly and the measure says to the measure of the measure says to the measure says to the measure of the measure says to the measure says the measure says to the measure says to the measure says to the measure says the



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CECTION 4	EVECUEE COEMAD	IO TITLE	
SECTION 1	EXPOSURE SCENARIO TITLE		
Title	27. Use in Laboratories	- Industrial	
Use Descriptor	Sector(s) of Use	SU 3: Industrial uses	
	Process Categories	PROC 10: Roller application or brushing	
		PROC 15: Use as laboratory reagent	
	Environmental Release Categories	ERC 2: Formulation of preparations	
	Categories	ERC 4 : Industrial use of processing aids in processes and products, not becoming part of articles	
	Environmental Release Category	Not Applicable	
Processes, Tasks and Activities Covered	Use of the substance within	laboratory settings, including material transfers and equipment cleaning.	
SECTION 2	OPERATIONAL CON	DITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of worker expos	sure	
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].	
characteristics	Concentration of substance in product	Up to 100% (unless stated).	
	Amount used	No limit.	
	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated). [G2].	
	Other operational	Assumes use at not > 20oC above ambient [G15].	
	conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene has been implemented [G1]	
Contributing	Specific Risk Managem	ent Measures and Operational Conditions	
Scenarios	(only required controls to demonstrate safe use listed)		
	Laboratory activities [CS36] PROC15	No other specific measures identified. [El20]	
	Cleaning [CS47] PROC10	No other specific measures identified. [El20]	
Section 2.2	Control of environment	al exposure	
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].	
	Amounts used	Fraction of EU tonnage used in region: 0.1	
		Regional use tonnage (tonnes/year): 1.0E-2	
		Fraction of regional tonnage used locally: 1	
		Annual site tonnage (tonnes/year): 1.0E-2	
		Maximum daily site tonnage (kg/day): 5.0E-1	
	Frequency and duration of	Continuous release. [FD2].	
	use	Emission days (days/year): 20	
	Environmental factors not	Local freshwater dilution fraction: 10	
	influenced by risk management	Local marine dilution fraction: 100	



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	Other operational conditions affecting environmental exposure	Release fraction to air from process (initial release prior to RMM): 0.025
		Release fraction to wastewater from process (initial release prior to RMM): 0.02
		Release fraction to soil from process (initial release prior to RMM): 0.0001
	Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used [TCS1].
	Technical onsite conditions and measures	Risk from environmental exposure is driven by Freshwater [TCR1a]. No wastewater treatment required [TCR6].
	to reduce or limit discharges, air emissions	Treat air emission to provide a typical removal efficiency of 0 %.
	and releases to soil	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency \geq 0.0 $\%$
		If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0.0~\%$
	Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recover from wastewater [OMS1].
	from site	Do not apply industrial sludge to natural soils [OMS2].
		Sludge should be incinerated, contained or reclaimed [OMS3].
	Conditions and measures	Not applicable as there is no release to wastewater [STP1].
	related to municipal sewage treatment plant	Estimated substance removal from wastewater via domestic sewage treatment 93.7 $\%.$
		Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 %.
		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 3.4E+2 kg per day.
		Assumed domestic sewage treatment plant flow 2 000 m³ per day.
	Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].
	Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1].
SECTION 3	EXPOSURE ESTIMATION	
Section 3.1	Health	
	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. [G21].	
Section 3.2	Environment	
	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2].	
SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1	Health	
		t expected to exceed the DN(M)EL when the Risk Management ditions outlined in Section 2 are implemented. [G22].



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	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23].
Section 4.2	Environment
	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3].

SECTION 1	EXPOSURE SCENAR	IO TITLE
Title	28. Use in Laboratories	- Professional
Use Descriptor	Sector(s) of Use	SU 22: Professional uses
	Process Categories	PROC 10: Roller application or brushing
		PROC 15: Use as laboratory reagent
	Environmental Release Categories	ERC 8a : Wide dispersive indoor use of processing aids in open systems
	Specific Environmental Release Category	ESVOC 8.17.v1
Processes, Tasks and Activities Covered	Use of small quantities withi cleaning.	n laboratory settings, including material transfers and equipment
SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of worker expos	sure
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].
characteristics	Concentration of substance in product	Up to 100% (unless stated).
	Amount used	No limit.
	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated). [G2].
	Other operational	Assumes use at not > 20oC above ambient [G15].
	conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene has been implemented [G1]
		ent Measures and Operational Conditions
Scenarios	(only required controls to demonstrate safe use listed)	
	Laboratory activities [CS36] PROC15	No other specific measures identified. [EI20]
	Cleaning [CS47] PROC10	No other specific measures identified. [El20]
Section 2.2	Control of environmental exposure	
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].
	Amounts used	Fraction of EU tonnage used in region: 0.1
		Regional use tonnage (tonnes/year): 1.0E-2
		Fraction of regional tonnage used locally: 1



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	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. [G21].	
Section 3.1	Health	
SECTION 3	EXPOSURE ESTIMAT	TION
OF OTION O	recovery of waste	
	Conditions and measures related to external	External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1].
	Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].
		Assumed domestic sewage treatment plant flow 2 000 m³ per day.
		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 1.4E-2 kg per day.
		Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 %.
	sewage treatment plant	Estimated substance removal from wastewater via domestic sewage treatment 93.7 $\%$.
	Conditions and measures related to municipal	Not applicable as there is no release to wastewater [STP1].
		Sludge should be incinerated, contained or reclaimed [OMS3].
	from site	Do not apply industrial sludge to natural soils [OMS2].
	Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recover from wastewater [OMS1].
		If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0.0~\%$
	and releases to soil	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency \geq 0.0 $\%$
	to reduce or limit discharges, air emissions	Treat air emission to provide a typical removal efficiency of 0 %.
	Technical onsite conditions and measures	Risk from environmental exposure is driven by Freshwater [TCR1a]. No wastewater treatment required [TCR6].
	Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used [TCS1].
		Release fraction to soil from process (initial release prior to RMM): 0
	conditions affecting environmental exposure	Release fraction to wastewater from process (initial release prior to RMM): 0.5
	Other operational	Release fraction to air from process (initial release prior to RMM): 0.5
	influenced by risk management	Local marine dilution fraction: 100
	Environmental factors not	Local freshwater dilution fraction: 10
	use	Emission days (days/year): 365
	Frequency and duration of	Continuous release. [FD2].
		Maximum daily site tonnage (kg/day): 1.4E-5
l		Annual site tonnage (tonnes/year): 5.0E-6



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Section 3.2	Environment	
	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2].	
SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1	Health	
	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22].	
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23].	
Section 4.2	Environment	
	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].	

SECTION 1	EXPOSURE SCENARIO TITLE	
Title	29. Rubber Production and Processing – Industrial	
Use Descriptor	Sector(s) of Use	SU 3: Industrial uses
		SU 10 : Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure
		PROC 2 : Use in closed, continuous process with occasional controlled exposure
		PROC 3: Use in closed batch process (synthesis or formulation)
		PROC 4 : Use in batch and other process (synthesis) where opportunity for exposure arises
		PROC 5 : Mixing or blending in batch processes for formulation of preparations* and articles (multistage and/or significant contact)
		PROC 6: Calendering operations
		PROC 7: Industrial spraying
		PROC 8a : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
		PROC 8b : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
		PROC 9 : Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
		PROC 13: Treatment of articles by dipping and pouring
		PROC 14 : Production of preparations* or articles by tabletting, compression, extrusion, pelletisation
		PROC 15: Use as laboratory reagent
		PROC 21 : Low energy manipulation of substances bound in materials and/or articles



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	Environmental Release Categories	ERC 1: Manufacture of substances	
		ERC 4 : Industrial use of processing aids in processes and becoming part of articles	products, not
		ERC 6d : Industrial use of process regulators for polymerisa processes in production of resins, rubbers, polymers	ation
	Specific Environmental Release Category	ESVOC 4.19.v1	
Processes, Tasks and Activities Covered	Manufacture of tyres and ge handling and mixing of rubb	eneral rubber articles, including processing of raw (uncured) rer additives, vulcanising, cooling and finishing.	rubber,
SECTION 2	OPERATIONAL CONI	DITIONS AND RISK MANAGEMENT MEASURE	S
Section 2.1	Control of worker expo	sure	
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].	
characteristics	Concentration of substance in product	Up to 100% (unless stated).	
	Amount used	No limit.	
	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated). [G2].	
	Other operational conditions affecting worker exposure	Assumes use at not > 20oC above ambient [G15].	
		Assumes a good basic standard of occupational hygiene had implemented [G1]	as been
Contributing	Specific Risk Managem	ent Measures and Operational Conditions	
Contributing Scenarios		· · · · · · · · · · · · · · · · · · ·	
_		ent Measures and Operational Conditions	
_	(only required controls to Material transfers [CS3] (closed systems) [CS107]	nent Measures and Operational Conditions demonstrate safe use listed)	
_	(only required controls to Material transfers [CS3] (closed systems) [CS107] PROC1, 2 Material transfers [CS3]	nent Measures and Operational Conditions demonstrate safe use listed) No other specific measures identified. [EI20]	
_	(only required controls to Material transfers [CS3] (closed systems) [CS107] PROC1, 2 Material transfers [CS3] PROC8b Bulk weighing [CS91]	nent Measures and Operational Conditions demonstrate safe use listed) No other specific measures identified. [EI20] No other specific measures identified. [EI20]	
_	(only required controls to Material transfers [CS3] (closed systems) [CS107] PROC1, 2 Material transfers [CS3] PROC8b Bulk weighing [CS91] PROC1, 2 Small scale weighing	nent Measures and Operational Conditions demonstrate safe use listed) No other specific measures identified. [EI20] No other specific measures identified. [EI20] Handle substance within a closed system [E47]	
_	(only required controls to Material transfers [CS3] (closed systems) [CS107] PROC1, 2 Material transfers [CS3] PROC8b Bulk weighing [CS91] PROC1, 2 Small scale weighing [CS90] PROC9 Additive premixing [CS92]	nent Measures and Operational Conditions demonstrate safe use listed) No other specific measures identified. [EI20] No other specific measures identified. [EI20] Handle substance within a closed system [E47] No other specific measures identified. [EI20]	
_	(only required controls to Material transfers [CS3] (closed systems) [CS107] PROC1, 2 Material transfers [CS3] PROC8b Bulk weighing [CS91] PROC1, 2 Small scale weighing [CS90] PROC9 Additive premixing [CS92] PROC3, 4, 5 Material transfers [CS3]	nent Measures and Operational Conditions demonstrate safe use listed) No other specific measures identified. [EI20] No other specific measures identified. [EI20] Handle substance within a closed system [E47] No other specific measures identified. [EI20] No other specific measures identified. [EI20]	
_	(only required controls to Material transfers [CS3] (closed systems) [CS107] PROC1, 2 Material transfers [CS3] PROC8b Bulk weighing [CS91] PROC1, 2 Small scale weighing [CS90] PROC9 Additive premixing [CS92] PROC3, 4, 5 Material transfers [CS3] PROC8b, 9 Calendering (including Banburys) [CS64] Operation is carried out at elevated temp. (> then 20°C above ambient	nent Measures and Operational Conditions demonstrate safe use listed) No other specific measures identified. [EI20] No other specific measures identified. [EI20] Handle substance within a closed system [E47] No other specific measures identified. [EI20] No other specific measures identified. [EI20] No other specific measures identified. [EI20]	



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	Vulcanisation [CS70] Operation is carried out at elevated tempe. (> then 20°C above ambient temp.) [OC7] PROC6	No other specific measures identified. [El20]	
	Vulcanisation [CS70] Operation is carried out at elevated temp. (> then 20°C above ambient temperature) [OC7] Manual [CS34] PROC6	No other specific measures identified. [EI20]	
	Cooling cured articles [CS71] Operation is carried out at elevated temp. (> then 20°C above ambient temperature) [OC7] PROC6	No other specific measures identified. [EI20]	
	Production of articles by dipping and pouring [CS113] PROC13	No other specific measures identified. [EI20]	
	Finishing operations [CS102] PROC21	No other specific measures identified. [EI20]	
	Laboratory activities [CS36] PROC15	No other specific measures identified. [EI20]	
	Equipment maintenance [CS5] PROC8a	No other specific measures identified. [El20]	
	Material storage [CS67] PROC1, 2	Store substance within a closed system [E84]	
Section 2.2	Control of environment	al exposure	
		an expectance	
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic [PrC4a].	C.
000000000000000000000000000000000000000		Substance is complex UVCB. [PrC3]. Predominantly hydrophobic	C.
000000000000000000000000000000000000000	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic [PrC4a].	C.
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic [PrC4a]. Fraction of EU tonnage used in region: 0.1	C.
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 3.4E+1	C.
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 3.4E+1 Fraction of regional tonnage used locally: 1	C.
	Product characteristics Amounts used Frequency and duration of	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 3.4E+1 Fraction of regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 3.4E+1	C.
	Product characteristics Amounts used	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 3.4E+1 Fraction of regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 3.4E+1 Maximum daily site tonnage (kg/day): 1.7E+3	C.
	Product characteristics Amounts used Frequency and duration of use Environmental factors not	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 3.4E+1 Fraction of regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 3.4E+1 Maximum daily site tonnage (kg/day): 1.7E+3 Continuous release. [FD2].	C.
	Product characteristics Amounts used Frequency and duration of use	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 3.4E+1 Fraction of regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 3.4E+1 Maximum daily site tonnage (kg/day): 1.7E+3 Continuous release. [FD2]. Emission days (days/year): 20	C.
	Product characteristics Amounts used Frequency and duration of use Environmental factors not influenced by risk management Other operational	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 3.4E+1 Fraction of regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 3.4E+1 Maximum daily site tonnage (kg/day): 1.7E+3 Continuous release. [FD2]. Emission days (days/year): 20 Local freshwater dilution fraction: 10	
	Product characteristics Amounts used Frequency and duration of use Environmental factors not influenced by risk management	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 3.4E+1 Fraction of regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 3.4E+1 Maximum daily site tonnage (kg/day): 1.7E+3 Continuous release. [FD2]. Emission days (days/year): 20 Local freshwater dilution fraction: 10 Local marine dilution fraction: 100): 0.01
	Product characteristics Amounts used Frequency and duration of use Environmental factors not influenced by risk management Other operational conditions affecting	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic [PrC4a]. Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 3.4E+1 Fraction of regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 3.4E+1 Maximum daily site tonnage (kg/day): 1.7E+3 Continuous release. [FD2]. Emission days (days/year): 20 Local freshwater dilution fraction: 10 Local marine dilution fraction: 100 Release fraction to air from process (initial release prior to RMM) Release fraction to wastewater from process (initial release prior): 0.01 - to



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	Technical onsite conditions and measures	Risk from environmental exposure is driven by Freshwater Sediment [TCR1b]. No wastewater treatment required [TCR6].
	to reduce or limit discharges, air emissions	Treat air emission to provide a typical removal efficiency of 0 %.
	and releases to soil	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency \geq 0.0 $\%$
		If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0.0~\%$
	Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recover from wastewater [OMS1].
	from site	Do not apply industrial sludge to natural soils [OMS2].
		Sludge should be incinerated, contained or reclaimed [OMS3].
	Conditions and measures	Not applicable as there is no release to wastewater [STP1].
	related to municipal sewage treatment plant	Estimated substance removal from wastewater via domestic sewage treatment 93.7 $\%.$
		Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 %.
		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 6.4E+5 kg per day.
		Assumed domestic sewage treatment plant flow 2 000 m³ per day.
	Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].
	Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1].
SECTION 3	EXPOSURE ESTIMAT	TION
Section 3.1	Health	
	The ECETOC TRA tool has [G21].	been used to estimate workplace exposures unless otherwise indicated.
Section 3.2	Environment	
	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2].	
SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1	Health	
		t expected to exceed the DN(M)EL when the Risk Management ditions outlined in Section 2 are implemented. [G22].
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23].	
Section 4.2	Environment	
	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].	



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SECTION 1	EXPOSURE SCENARIO TITLE		
Title	30. Use in Polymer Processing – Industrial		
Use Descriptor	Sector(s) of Use	SU 3: Industrial uses	
		SU 10 : Formulation [mixing] of preparations and/or re-packaging (excluding alloys)	
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure	
		PROC 2 : Use in closed, continuous process with occasional controlled exposure	
		PROC 3: Use in closed batch process (synthesis or formulation)	
		PROC 4 : Use in batch and other process (synthesis) where opportunity for exposure arises	
		PROC 5 : Mixing or blending in batch processes for formulation of preparations* and articles (multistage and/or significant contact)	
		PROC 6: Calendering operations	
		PROC 8a : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities	
		PROC 8b : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	
		PROC 9 : Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	
		PROC 13: Treatment of articles by dipping and pouring	
		PROC 14 : Production of preparations* or articles by tabletting, compression, extrusion, pelletisation	
		PROC 21 : Low energy manipulation of substances bound in materials and/or articles	
	Environmental Release Categories	ERC 4 : Industrial use of processing aids in processes and products, not becoming part of articles	
	Specific Environmental Release Category	ESVOC 4.21a.v1	
Processes, Tasks and Activities Covered	Processing of formulated polymers including material transfers, additives handling (e.g. pigments, stabilisers, fillers, plasticisers, etc.), moulding, curing and forming activities, material re-works, storage and associated maintenance.		
SECTION 2	OPERATIONAL CONI	DITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of worker exposure		
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].	
characteristics	Concentration of substance in product	Up to 100% (unless stated).	
	Amount used	No limit.	
	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated). [G2].	
	Other operational conditions affecting worker exposure	Assumes use at not > 20oC above ambient [G15].	
		Assumes a good basic standard of occupational hygiene has been implemented [G1]	



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Contributing	Specific Risk Management Measures and Operational Conditions		
Scenarios	(only required controls to demonstrate safe use listed)		
	Bulk transfers [CS14] (closed systems) [CS107] PROC1, 2	No other specific measures identified. [EI20]	
	Bulk transfers [CS14] PROC8b	No other specific measures identified. [El20]	
	Bulk weighing [CS91] PROC1, 2	No other specific measures identified. [EI20]	
	Small scale weighing [CS90] PROC9	No other specific measures identified. [EI20]	
	Additive premixing [CS92] PROC3, 4	No other specific measures identified. [EI20]	
	Additive premixing [CS92] Mixing operations (open systems) [CS30] PROC5	No other specific measures identified. [EI20]	
	Bulk transfers [CS14] PROC8b, 9	No other specific measures identified. [El20]	
	Calendering (including Banburys) [CS64] Operation is carried out at elevated temp. (> then 20°C above ambient temp.) [OC7] PROC6	No other specific measures identified. [El20]	
	Production of articles by dipping and pouring [CS113] PROC13	No other specific measures identified. [El20]	
	Extrusion and masterbatching [CS88] PROC14	Provide a good standard of controlled ventilation (10 to 15 air changes per hour). [E40]	
	Injection moulding of articles [CS89] PROC14	No other specific measures identified. [El20]	
	Finishing operations [CS102] PROC21	No other specific measures identified. [EI20]	
	Equipment maintenance [CS5] PROC8a	No other specific measures identified. [EI20]	
	Material storage [CS67] PROC1, 2	Store substance within a closed system [E84]	
Section 2.2	Control of environmental exposure		
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].	
	Amounts used	Fraction of EU tonnage used in region: 0.1	
		Regional use tonnage (tonnes/year): 3.0E+2	
		Fraction of regional tonnage used locally: 1	
		Annual site tonnage (tonnes/year): 3.0E+2	
		Maximum daily site tonnage (kg/day): 1.5E+4	
	Frequency and duration of use	Continuous release. [FD2]. Emission days (days/year): 20	
	I	Emission days (days year). 20	



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	Environmental factors not influenced by risk management	Local freshwater dilution fraction: 10
		Local marine dilution fraction: 100
	Other operational conditions affecting environmental exposure	Release fraction to air from process (initial release prior to RMM: 2.5E-1
		Release fraction to wastewater from process (initial release prior to RMM): 0
		Release fraction to soil from process (initial release prior to RMM): 0.00001
	Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used [TCS1].
	Technical onsite conditions and measures	Risk from environmental exposure is driven by Freshwater [TCR1a]. No wastewater treatment required [TCR6].
	to reduce or limit discharges, air emissions	Treat air emission to provide a typical removal efficiency of 80 %.
	and releases to soil	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency $\geq 0.0~\%$
		If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0.0~\%$
	Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recover from wastewater [OMS1].
	from site	Do not apply industrial sludge to natural soils [OMS2].
		Sludge should be incinerated, contained or reclaimed [OMS3].
	Conditions and measures	Not applicable as there is no release to wastewater [STP1].
	related to municipal sewage treatment plant	Estimated substance removal from wastewater via domestic sewage treatment 93.7 $\%.$
		Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 %.
		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 1.5E+7 kg per day.
		Assumed domestic sewage treatment plant flow 2 000 m³ per day.
	Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].
	Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1].
SECTION 3	EXPOSURE ESTIMAT	TION
Section 3.1	Health	
	The ECETOC TRA tool has [G21].	been used to estimate workplace exposures unless otherwise indicated.
Section 3.2	Environment	
	The Hydrocarbon Block Met Petrorisk model. [EE2].	hod has been used to calculate environmental exposure with the



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SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1	Health	
	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22].	
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23].	
Section 4.2	Environment	
	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].	

SECTION 1	EXPOSURE SCENARIO TITLE	
Title	31. Use in Polymer Processing – Professional	
Use Descriptor	Sector(s) of Use	SU 22: Professional uses
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure
		PROC 2: Use in closed, continuous process with occasional controlled exposure
		PROC 6: Calendering operations
		PROC 8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
		PROC 8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
		PROC 14: Production of preparations* or articles by tabletting, compression, extrusion, pelletisation
		PROC 21 : Low energy manipulation of substances bound in materials and/or articles
	Environmental Release Categories	ERC 8a : Wide dispersive indoor use of processing aids in open systems
		ERC 8d: Wide dispersive outdoor use of processing aids in open systems
	Specific Environmental Release Category	ESVOC 8.21b.v1
Processes, Tasks and Activities Covered	Processing of formulated polymers including material transfers, moulding and forming activities, material re-works and associated maintenance.	
SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of worker exposure	
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].
characteristics	Concentration of substance in product	Up to 100% (unless stated).



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Date: 7.11.2014 Previous date: 10.8.2012 ID 10523 Amount used No limit. Frequency and duration of Covers daily exposures up to 8 hours (unless stated). [G2]. Other operational Assumes use at not > 20oC above ambient [G15]. conditions affecting Assumes a good basic standard of occupational hygiene has been worker exposure implemented [G1] Contributing Specific Risk Management Measures and Operational Conditions **Scenarios** (only required controls to demonstrate safe use listed) Bulk transfers [CS14] Handle substance within a closed system [E47] (closed systems) [CS107] PROC1, 2 Material transfers [CS3] Transfer via enclosed lines [E52] PROC8b Injection moulding of No other specific measures identified. [EI20] articles [CS89] PROC6, Rework of articles [CS86] No other specific measures identified. [EI20] PROC21 Equipment maintenance Drain or remove substance from equipment prior to break-in or [CS5] PROC8a maintenance [E81] Store substance within a closed system [E84] Material storage [CS67] PROC1, 2 Section 2.2 Control of environmental exposure Product characteristics Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a]. Amounts used Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 2.8E+2 Fraction of regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 1.4E-1 Maximum daily site tonnage (kg/day): 3.8E-1 Frequency and duration of Continuous release. [FD2]. Emission days (days/year): 365 Environmental factors not Local freshwater dilution fraction: 10 influenced by risk Local marine dilution fraction: 100 management Other operational Release fraction to air from process (initial release prior to RMM): 0.98 conditions affecting Release fraction to wastewater from process (initial release prior to environmental exposure RMM): 0.01 Release fraction to soil from process (initial release prior to RMM): 0.01 Technical conditions and Common practices vary across sites thus conservative process release measures at process level estimates used [TCS1]. (source) to prevent release



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Technical onsite	Risk from environmental exposure is driven by Freshwater [TCR1a]. No
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	wastewater treatment required [TCR6].
	Treat air emission to provide a typical removal efficiency of N/A.
	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency \geq 0.0 $\%$
	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0.0~\%$
Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recover from wastewater [OMS1].
from site	Do not apply industrial sludge to natural soils [OMS2].
	Sludge should be incinerated, contained or reclaimed [OMS3].
Conditions and measures	Not applicable as there is no release to wastewater [STP1].
sewage treatment plant	Estimated substance removal from wastewater via domestic sewage treatment 93.7 $\%$.
	Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 %.
	Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 3.2E+2 kg per day.
	Assumed domestic sewage treatment plant flow 2 000 m³ per day.
Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].
Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1].
EXPOSURE ESTIMATION	
Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	
Environment	
The Hydrocarbon Block Method has been used to calculate environmental exposure with the	
GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Health	
•	t expected to exceed the DN(M)EL when the Risk Management ditions outlined in Section 2 are implemented. [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23].	
Environment	
scaling may be necessary to Required removal efficiency alone or in combination [DS technologies, either alone o	med operating conditions which may not be applicable to all sites; thus, o define appropriate site-specific risk management measures [DSU1]. If or wastewater can be achieved using onsite/offsite technologies, either U2]. Required removal efficiency for air can be achieved using onsite r in combination [DSU3]. Further details on scaling and control in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html)
	Organizational measures to prevent / limit release from site Conditions and measures related to municipal sewage treatment plant Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste EXPOSURE ESTIMAT Health The ECETOC TRA tool has [G21]. Environment The Hydrocarbon Block Meretrorisk model. [EE2]. GUIDANCE TO CHECE Health Predicted exposures are not Measures/Operational Control Measures/Operational Control Measures that risks are managemented that risks are managemented that risks are managemented to model of the control



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SECTION 1	EXPOSURE SCENARIO TITLE	
Title	32. Use in Water Treatment Chemicals – Industrial	
Use Descriptor	Sector(s) of Use	SU 3: Industrial uses
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure
		PROC 2 : Use in closed, continuous process with occasional controlled exposure
		PROC 3: Use in closed batch process (synthesis or formulation)
		PROC 4 : Use in batch and other process (synthesis) where opportunity for exposure arises
		PROC 8a : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
		PROC 8b : Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
		PROC 13: Treatment of articles by dipping and pouring
	Environmental Release	ERC 3: Formulation in materials
	Categories	ERC 4 : Industrial use of processing aids in processes and products, not becoming part of articles
	Specific Environmental Release Category	ESVOC 3.22a.v1
Processes, Tasks and Activities Covered	Covers the use of the substance for the treatment of water at industrial facilities in open and closed systems.	
SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of worker exposure	
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].
characteristics	Concentration of substance in product	Up to 100% (unless stated).
	Amount used	No limit.
	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated). [G2].
	Other operational	Assumes use at not > 20oC above ambient [G15].
	conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene has been implemented [G1]
Contributing	Specific Risk Managem	ent Measures and Operational Conditions
Scenarios	(only required controls to demonstrate safe use listed)	
	Bulk transfers [CS14]Use in contained systems [CS38] PROC2	Transfer via enclosed lines [E52]
	Drum/batch transfers [CS8] PROC8b	No other specific measures identified. [EI20]
	General exposures (closed systems) [CS15] PROC3	No other specific measures identified. [EI20]



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	General exposures (open systems) [CS16] PROC4	No other specific measures identified. [El20]	
	Pouring from small containers [CS9] PROC13	No other specific measures identified. [El20]	
	Equipment maintenance [CS5] PROC8a	No other specific measures identified. [EI20]	
	Material storage [CS67] PROC1	Store substance within a closed system [E84]	
Section 2.2	Control of environment	al exposure	
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydro [PrC4a].	ophobic.
	Amounts used	Fraction of EU tonnage used in region: 0.1	
		Regional use tonnage (tonnes/year): 1.1E+1	
		Fraction of regional tonnage used locally: 1	
		Annual site tonnage (tonnes/year): 1.1E+1	
		Maximum daily site tonnage (kg/day): 3.7E+1	
	Frequency and duration of	Continuous release. [FD2].	
	use	Emission days (days/year): 300	
	Environmental factors not	Local freshwater dilution fraction: 10	
	influenced by risk management	Local marine dilution fraction: 100	
	Other operational	Release fraction to air from process (initial release prior to	RMM): 0.05
	conditions affecting environmental exposure	Release fraction to wastewater from process (initial releas RMM): 0.95	se prior to
		Release fraction to soil from process (initial release prior to	o RMM): 0
	Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative proestimates used [TCS1].	ocess release
	Technical onsite conditions and measures to reduce or limit	Risk from environmental exposure is driven by Freshwater [TCR1b] If discharging to domestic sewage treatment plan onsite wastewater treatment required [TCR14].	
	discharges, air emissions and releases to soil	Treat air emission to provide a typical removal efficiency of	of 0 %.
		Treat onsite wastewater (prior to receiving water discharge the required removal efficiency ≥ 96.6 %	e) to provide
		If discharging to domestic sewage treatment plant, provide onsite wastewater removal efficiency of ≥ 46.3 %	e the required
	Organizational measures to prevent / limit release	Prevent discharge of undissolved substance to or recover wastewater [OMS1].	from
	from site	Do not apply industrial sludge to natural soils [OMS2].	
		Sludge should be incinerated, contained or reclaimed [ON	1S3].
	Conditions and measures	Not applicable as there is no release to wastewater [STP1	1].
	related to municipal sewage treatment plant	Estimated substance removal from wastewater via domes treatment 93.7 $\%.$	tic sewage
		Total efficiency of removal from wastewater after onsite ar (domestic treatment plant) RMMs 96.6 %.	nd offsite



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		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 3.7E+1 kg per day.
		Assumed domestic sewage treatment plant flow 2 000 m³ per day.
	Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].
	Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1].
SECTION 3	EXPOSURE ESTIMAT	TION
Section 3.1	Health	
	The ECETOC TRA tool has [G21].	been used to estimate workplace exposures unless otherwise indicated.
Section 3.2	Environment	
	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2].	
SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1	Health	
		t expected to exceed the DN(M)EL when the Risk Management litions outlined in Section 2 are implemented. [G22].
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23].	
Section 4.2	Environment	
	scaling may be necessary to Required removal efficiency alone or in combination [DS technologies, either alone o	med operating conditions which may not be applicable to all sites; thus, o define appropriate site-specific risk management measures [DSU1]. For wastewater can be achieved using onsite/offsite technologies, either U2]. Required removal efficiency for air can be achieved using onsite r in combination [DSU3]. Further details on scaling and control a SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html)

SECTION 1	EXPOSURE SCENARIO TITLE	
Title	33. Use in Water Treatn	nent Chemicals – Professional
Use Descriptor	Sector(s) of Use	SU 22: Professional uses:
	Process Categories	PROC 1: Use in closed process, no likelihood of exposure
		PROC 3: Use in closed batch process (synthesis or formulation)
		PROC 4 : Use in batch and other process (synthesis) where opportunity for exposure arises
		PROC 8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
		PROC 8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
		PROC 13: Treatment of articles by dipping and pouring
	Environmental Release Categories	ERC 8f : Wide dispersive outdoor use resulting in inclusion into or onto a matrix



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	Specific Environmental Release Category	ESVOC 8.22b.v1
Processes, Tasks and Activities Covered	Covers the use of the substa	ance for the treatment of water in open and closed systems.
SECTION 2	OPERATIONAL CON	DITIONS AND RISK MANAGEMENT MEASURES
Section 2.1	Control of worker expos	sure
Product	Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP [OC3].
characteristics	Concentration of substance in product	Up to 100% (unless stated).
	Amount used	No limit.
	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated). [G2].
	Other operational	Assumes use at not > 20oC above ambient [G15].
	conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene has been implemented [G1]
Contributing	Specific Risk Managem	ent Measures and Operational Conditions
Scenarios	(only required controls to	demonstrate safe use listed)
	Drum/batch transfers [CS8] PROC8b	No other specific measures identified. [El20]
	General exposures (closed systems) [CS15] PROC3	No other specific measures identified. [El20]
	General exposures (open systems) [CS16] PROC4	No other specific measures identified. [El20]
	Pouring from small containers [CS9] PROC13	No other specific measures identified. [El20]
	Equipment maintenance [CS5] PROC8a	No other specific measures identified. [El20]
	Material storage [CS67] PROC1	Store substance within a closed system [E84]
Section 2.2	Control of environment	al exposure
	Product characteristics	Substance is complex UVCB. [PrC3]. Predominantly hydrophobic. [PrC4a].
	Amounts used	Fraction of EU tonnage used in region: 0.1
		Regional use tonnage (tonnes/year): 4.5E+0
		Fraction of regional tonnage used locally: 1
		Annual site tonnage (tonnes/year): 1.5E+0
		Maximum daily site tonnage (kg/day): 4.0E+0
	Frequency and duration of	Continuous release. [FD2].
	use	Emission days (days/year): 365
	Environmental factors not influenced by risk management	Local freshwater dilution fraction: 10 Local marine dilution fraction: 100



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		t expected to exceed the DN(M)EL when the Risk Management ditions outlined in Section 2 are implemented. [G22].
Section 4.1	Health	
SECTION 4	GUIDANCE TO CHEC	K COMPLIANCE WITH THE EXPOSURE SCENARIO
	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. [EE2].	
Section 3.2	Environment	
	The ECETOC TRA tool has [G21].	been used to estimate workplace exposures unless otherwise indicated.
Section 3.1	Health	
SECTION 3	EXPOSURE ESTIMAT	TION
	Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1].
	Conditions and measures related to external treatment of waste for disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3].
		Assumed domestic sewage treatment plant flow 2 000 m ³ per day.
		Maximum allowable site tonnage (MSafe) based on domestic sewage treatment release 1.9E+1 kg per day.
	sewage treatment plant	Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 93.7 %.
		Estimated substance removal from wastewater via domestic sewage treatment 93.7 %.
	Conditions and measures related to municipal	Not applicable as there is no release to wastewater [STP1].
		Sludge should be incinerated, contained or reclaimed [OMS3].
	nom site	Do not apply industrial sludge to natural soils [OMS2].
	Organizational measures to prevent / limit release from site	Prevent discharge of undissolved substance to or recover from wastewater [OMS1].
		If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of ≥ 0.0 %
		Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency ≥ 69.8 %
	and releases to soil	Treat air emission to provide a typical removal efficiency of N/A.
	Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by Agricultural Soil [TCR1f] If discharging to domestic sewage treatment plant, no onsite wastewater treatment required [TCR10].
	Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used [TCS1].
		Release fraction to soil from process (initial release prior to RMM): 0
	conditions affecting environmental exposure	Release fraction to wastewater from process (initial release prior to RMM): 0.99
	Other operational	Release fraction to air from process (initial release prior to RMM): 0.01



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	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23].
Section 4.2	Environment
	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4].