



-i biztonsági adatlap. 14/11/2022, ellenőrzés 7

1. SZAKASZ: Az anyag/keverék és a vállalat/vállalkozás azonosítása

1.1. Termékazonosító

A készítmény azonosítása:

Kereskedelmi név: WIZZY VETRI

Kereskedelmi kód: 1932

1.2. Az anyag vagy keverék lényeges azonosított felhasználásai, illetve ellenjavallt felhasználásai
Javasolt felhasználási mód:

impregnált üvegtisztító kendő

1.3. A biztonsági adatlap szállítójának adatai

Szállító:

Arexons S.p.A.

via Antica di Cassano, 23, 20063

Cernusco sul Naviglio (MI), Italy

Arexons S.p.A.

Tel. +39 (0)2/924361 - Fax +39 (0)2/92436306

A biztonsági adatlapért felelős illetékes személy:

arexons@arexons.it

1.4. Sürgösségi telefonszám

Arexons S.p.A.

Tel. +39 (0)2/924361 - Fax +39 (0)2/92436306

Egészségügyi Toxikológiai Tájékoztató Szolgálat' (ETTSz) +36-80-20-11-99 (0-24 órában, díjmentesen hívható – csak Magyarországról)

2. SZAKASZ: A veszély azonosítása

2.1. Az anyag vagy keverék besorolása

EC 1272/2008 (CLP) irányelv kritériumai:

CE 1272/2008 (CLP) Szabályzat értelmében a termék nem számít veszélyes anyagnak.

Az emberi egészségre és a környezetre káros fizikokémiai hatások:

Egyéb veszélyek nincsenek

2.2. Címkézési elemek

CE 1272/2008 (CLP) Szabályzat értelmében a termék nem számít veszélyes anyagnak.

Veszélyt jelző piktogramok:

Semmi

Figyelmeztető mondatok:

Semmi

Óvintézkedésre vonatkozó mondatok:

Semmi

Különleges utasítások:

Semmi

Különleges intézkedések a többször módosított REACH rendelet XVII. mellékletének megfelelően:

Semmi

Az Európai Parlament és a Tanács 648/2004/EK rendelete (a mosó- és tisztítószerekről).

A termék tartalmaz még: Illatanyagok

Tartósítószer: Laurrylamine Dipropylenediamine, Piridin-2-tiol-1-oxid, nátriumsó, 1,2-benzizotiazol-3(2H)-on; 1,2-benzizotiazolin-3-on

2.3. Egyéb veszélyek

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Nincs jelen PBT, vPvB vagy endokrin károsító anyag 0,1%-nál nagyobb koncentrációban.
Egyéb veszélyek:
Egyéb veszélyek nincsenek

3. SZAKASZ: Összetétel vagy az összetevőkre vonatkozó adatok

3.1. Anyagok

N.A.

3.2. Keverékek

A CLP rendelet és a vonatkozó osztályozás értelmében veszélyesnek minősülő összetevők:

>= 20% - < 25% etanol

REACH No.: 01-2119457610-43, CAS: 64-17-5, EC: 200-578-6

⚠ 2.6/2 Flam. Liq. 2 H225

⚠ 3.3/2 Eye Irrit. 2 H319

Egyedi koncentrációs határértékek:

C >= 50%: Eye Irrit. 2 H319

4. SZAKASZ: Elsősegély-nyújtási intézkedések

4.1. Az elsősegély-nyújtási intézkedések ismertetése

Bőrrel való érintkezés esetén:

Bő, szappanos vízzel kell lemosni.

Szemmel való érintkezés esetén:

Ha szembe kerül, bő vízzel azonnal ki kell mosni és orvoshoz kell fordulni.

Lenyelés esetén:

Egyáltalán nem szabad hánytatni. AZONNAL ORVOSHOZ KELL FORDULNI!

Belélegzés esetén:

A sérültet vigyük friss levegőre és tartsuk melegen, pihenő helyzetben.

4.2. A legfontosabb – akut és késleltetett – tünetek és hatások

Semmi

4.3. A szükséges azonnali orvosi ellátás és különleges ellátás jelzése

Kezelés:

Semmi

5. SZAKASZ: Tuzoltási intézkedések

5.1. Oltóanyag

Széndioxid.

Porral.

hab

Vízpermet

Oltóanyag nem ajánlott:

Közvetlen vízszugár használata tilos

5.2. Az anyaghoz vagy a keverékhez társuló különleges veszélyek

Ne lélegezzük be a robbanás vagy égés során kialakuló gázokat.

Az égés nehéz füstöt termel.

5.3. Tuzoltóknak szóló javaslat

Megfelelő légzőkészüléket használjon!

Külön gyűjtse össze az oltáshoz használt vizet. Ezt a vizet nem szabad a csatornába önteni!

A nem károsodott tartályokat helyezze a közvetlen veszély zónáján kívülre, ha ez a művelet biztonságosan kivitelezhető.



6. SZAKASZ: Intézkedések véletlenszerű környezetbe jutás esetén

- 6.1. Személyi óvintézkedések, egyéni védoeszközök és vészhelyzeti eljárások
Használjon egyéni védőfelszerelést.
A helyszínen tartózkodókat vezesse biztonságos helyre.
Nézze át a 7. és 8. pontokban található védelmi intézkedéseket.
- 6.2. Környezetvédelmi óvintézkedések
Akadályozza meg, hogy az anyag a földre/föld alá jusson. Akadályozza meg, hogy az anyag vízbe vagy csatornába jusson.
Gyűjtse össze a mosáshoz használt szennyezett vizet és ürítse ki.
Ha gáz szabadul fel, vagy gáz jut a vízvezetékekbe, földbe vagy csatornába, értesítse a felelős hatóságokat.
A gyűjtéshez megfelelő anyagok: szívóhatású anyag, szerves, homok
- 6.3. A területi elhatárolás és a szennyezésmentesítés módszerei és anyagai
Bő vízzel mossa meg.
- 6.4. Hivatkozás más szakaszokra
Lásd a 8. és 13. pontokat is

7. SZAKASZ: Kezelés és tárolás

- 7.1. A biztonságos kezelésre irányuló óvintézkedések
Kerülje a bőrrel és szemmel való érintkezést, a gőzök, keverékek belélegzését.
A javasolt védőfelszereléshez nézze át a 8. pontot.
- Munka közben tilos az étkezés és az ivás!
- 7.2. A biztonságos tárolás feltételei, az esetleges összeférhetetlenséggel együtt
Tartsa távol ételtől, italtól és állateledeltől.
Különösebben egyik sem.
A helyiségekre vonatkozó utasítások:
A jól lezárt tárolóedényeket hűvös és szellős helyen, hőforrástól távol kell tárolni.
- 7.3. Meghatározott végfelhasználás (végfelhasználások)
Nincs sajátos felhasználási mód

8. SZAKASZ: Az expozíció elleni védekezés/egyéni védelem

- 8.1. Ellenőrzési paraméterek
etanol - CAS: 64-17-5
ACGIH - STEL: 1000 ppm - Megjegyzések: A3 - URT irr
DNEL expozíciós határértékek
etanol - CAS: 64-17-5
Szakmunkás: 1900 mg/m³ - Expozíció: Humán belélegzés - Frekvencia: Rövid távú (akut)
Szakmunkás: 950 mg/m³ - Expozíció: Humán belélegzés - Frekvencia: Hosszú távú, rendszeres hatások
Szakmunkás: 343 mg/kg - Expozíció: Humán dermatológiai - Frekvencia: Hosszú távú, rendszeres hatások
PNEC expozíciós határértékek
etanol - CAS: 64-17-5
Cél: Édesvíz - Érték: 0.96 mg/l
Cél: Tengervíz - Érték: 0.79 mg/l
Cél: Édesvízi üledék - Érték: 3.6 mg/kg
Cél: Tengervízi üledék - Érték: 2.9 mg/kg
Cél: 09 - Érték: 580 mg/l
- 8.2. Az expozíció elleni védekezés
A szem védelme:
Normális használat esetén nem szükséges. Dolgozzon mindenesetre a megszokott gyakorlat szerint.
A bőr védelme:

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Normál használat esetén nincs szükség speciális óvintézkedések alkalmazására.

A kéz védelme:

Normális használat esetén nem szükséges.

Légzési óvintézkedések:

Normál használat esetén nem szükséges.

Termikus veszélyek:

Semmi

Környezeti kitétségi ellenőrzés:

Semmi

Megfelelő műszaki ellenőrzés:

Semmi

9. SZAKASZ: Fizikai és kémiai tulajdonságok

9.1. Az alapvető fizikai és kémiai tulajdonságokra vonatkozó információk

Tulajdonságok	Érték	Mód:	Megjegyzések
Halmazállapot:	Folyadék	--	--
Szín:	színtelen	--	--
Szag:	jellegzetes	--	--
Olvadáspont/fagyáspont:	N.A.	--	--
Forráspont vagy kezdő forráspont és forrásponttartomány:	N.A.	--	--
Tűzveszélyesség:	N.A.	--	--
Felső és alsó robbanási határértékek:	N.A.	--	--
Gyulladáspont:	nem gyúlékony	10	--
Öngyulladás hőmérséklet:	N.A.	--	--
Bomlási hőmérséklet:	N.A.	--	--
pH:	8.7	--	--
Kinematikus viszkozitás:	N.A.	--	--
Vízben oldhatóság:	oldódó	--	--
Oldhatóság olajban:	N.A.	--	--
N-oktanol/víz megoszlási hányados (log érték):	N.A.	--	--
Gőznyomás:	N.A.	--	--
Sűrűség és/vagy relatív sűrűség:	0,957 g/cm ³ (impregnante)	--	--
Relatív gőzsűrűség:	N.A.	--	--

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Részecskejellemzők:

Részecskeméretet:	N.A.	--	--
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- 9.2. Egyéb információk
Nincs más lényeges információ

10. SZAKASZ: Stabilitás és reakciókészség

- 10.1. Reakciókészség
Normál körülmények között stabil
- 10.2. Kémiai stabilitás
Normál körülmények között stabil
- 10.3. A veszélyes reakciók lehetősége
Semmi
- 10.4. Kerülendő körülmények
Normál körülmények között stabil.
- 10.5. Nem összeférhető anyagok
Különösebben semmi.
- 10.6. Veszélyes bomlástermékek
Semmi.

11. SZAKASZ: Toxikológiai adatok

- 11.1. Az 1272/2008/EK rendeletben meghatározott, veszélyességi osztályokra vonatkozó információk
A termékkel kapcsolatos toxikológiai információk:

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- a) akut toxicitás
Nincs besorolva
A rendelkezésre álló adatok alapján az osztályozás kritériumai nem teljesülnek.
- b) bőrkorrózió/bőrirritáció
Nincs besorolva
A rendelkezésre álló adatok alapján az osztályozás kritériumai nem teljesülnek.
- c) súlyos szemkárosodás/szemirritáció
Nincs besorolva
A rendelkezésre álló adatok alapján az osztályozás kritériumai nem teljesülnek.
- d) légzőszervi vagy bőrszenzibilizáció
Nincs besorolva
A rendelkezésre álló adatok alapján az osztályozás kritériumai nem teljesülnek.
- e) csírasejt-mutagenitás
Nincs besorolva
A rendelkezésre álló adatok alapján az osztályozás kritériumai nem teljesülnek.
- f) rákkeltő hatás
Nincs besorolva
A rendelkezésre álló adatok alapján az osztályozás kritériumai nem teljesülnek.
- g) reprodukciós toxicitás
Nincs besorolva
A rendelkezésre álló adatok alapján az osztályozás kritériumai nem teljesülnek.
- h) egyetlen expozíció utáni célszervi toxicitás (STOT)
Nincs besorolva
A rendelkezésre álló adatok alapján az osztályozás kritériumai nem teljesülnek.
- i) ismétlődő expozíció utáni célszervi toxicitás (STOT)
Nincs besorolva
A rendelkezésre álló adatok alapján az osztályozás kritériumai nem teljesülnek.
- j) aspirációs veszély
Nincs besorolva



A rendelkezésre álló adatok alapján az osztályozás kritériumai nem teljesülnek.
A termékben talált legfontosabb anyagokkal kapcsolatos toxikológiai információk:

etanol - CAS: 64-17-5

d) légzőszervi vagy bőrszenzibilizáció:

Teszt: Bőr szenzitivizáció - Kijutás: Bőr Negatív

e) csírasejt-mutagenitás:

Teszt: Genotoxicitás - Módosulatok: vitro Negatív

f) rákkeltő hatás:

Teszt: Karcinogenecitás - Módosulatok: mam Pozitív

g) reprodukciós toxicitás:

Teszt: NOAEL - Kijutás: Inhaláció - Módosulatok: Patkány = 1600 ppm

11.2. Egyéb veszélyekkel kapcsolatos információ

Endokrin károsító tulajdonságok:

Nincsenek jelen endokrin károsító anyagok 0,1%-nál nagyobb koncentrációban.

12. SZAKASZ: Ökológiai adatok

12.1. Toxicitás

A megfelelő gyakorlati tapasztalatok alapján kell alkalmazni és el kell kerülni, hogy a termék a környezetet szennyezze.

etanol - CAS: 64-17-5

a) Akut vízi toxicitás:

Végpont: LC50 - Módosulatok: Hal 14.2 GL - Időtartam h: 96

Végpont: LC50 - Módosulatok: Daphnia 29.6 GL - Időtartam h: 24

Végpont: EC50 - Módosulatok: Alga 19000 mg/l - Időtartam h: 96

Végpont: EC50 - Módosulatok: batteri 39.5 GL - Időtartam h: 4

b) Krónikus vízi toxicitás:

Végpont: EC50 - Módosulatok: Hal 14536 mg/l - Időtartam h: 200

Végpont: LC50 - Módosulatok: Daphnia 9248 mg/l - Időtartam h: 48

12.2. Perzisztencia és lebonthatóság

Semmi

N.A.

12.3. Bioakkumulációs képesség

N.A.

12.4. A talajban való mobilitás

N.A.

12.5. A PBT- és a vPvB-értékelés eredményei

vPvB anyagok: Semmi - PBT anyagok: Semmi

12.6. Endokrin károsító tulajdonságok

Nincsenek jelen endokrin károsító anyagok 0,1%-nál nagyobb koncentrációban.

12.7. Egyéb káros hatások

Semmi

13. SZAKASZ: Ártalmatlanítási szempontok

13.1. Hulladékkezelési módszerek

Amennyiben lehetséges, vissza kell nyerni. Az érvényben levő helyi és országos rendelkezések értelmében kell eljárni.

14. SZAKASZ: Szállításra vonatkozó információk

14.1. UN-szám vagy azonosító szám

A szállítási szabályok értelmében nem veszélyes áru.

14.2. Az ENSZ szerinti megfelelő szállítási megnevezés

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- N.A.
- 14.3. Szállítási veszélyességi osztály(ok)
N.A.
- 14.4. Csomagolási csoport
N.A.
- 14.5. Környezeti veszélyek
ADR-környezetszennyező: Nem.
IMDG-Marine pollutant: No
- 14.6. A felhasználót érinto különleges óvintézkedések
N.A.
- 14.7. Az IMO-szabályok szerinti tengeri ömlesztett szállítás
N.A.

15. SZAKASZ: Szabályozással kapcsolatos információk

15.1. Az adott anyaggal vagy keverékkel kapcsolatos biztonsági, egészségügyi és környezetvédelmi előírások/jogszabályok

98/24/EK irányelv (A munkájuk során vegyi anyagokkal kapcsolatos kockázatoknak kitett munkavállalók egészségének és biztonságának védelme)
2000/39/EK irányelv (Munkahelyi expozíciós határértékek)
1907/2006/EK (REACH) szabályozás
1272/2008/EK (CLP) szabályozás
790/2009/EK (ATP 1 CLP) szabályozás és 758/2013/EU
2020/878/EU szabályozás
286/2011/EU (ATP 2 CLP) szabályozás
618/2012/EU (ATP 3 CLP) szabályozás
487/2013/EU (ATP 4 CLP) szabályozás
944/2013/EU (ATP 5 CLP) szabályozás
605/2014/EU (ATP 6 CLP) szabályozás
2015/1221/EU (ATP 7 CLP) szabályozás
2016/918/EU (ATP 8 CLP) szabályozás
2016/1179/EU (ATP 9 CLP) szabályozás
2017/776/EU (ATP 10 CLP) szabályozás
2018/669/EU (ATP 11 CLP) szabályozás
2018/1480/EU (ATP 13 CLP) szabályozás
2019/521 /EU (ATP 12 CLP) szabályozás
2020/217/EU (ATP 14 CLP) szabályozás
2020/1182/EU (ATP 15 CLP) szabályozás
2021/643/EU (ATP 16 CLP) szabályozás

Korlátozások a tartalmazott termékkel vagy anyaggal kapcsolatban, a többször módosított 1907/2006 (EC) (REACH) rendelet XVII. mellékletének megfelelően:

A termékkel kapcsolatos megkötések:

Nincs korlátozás.

A termékben található anyagokkal kapcsolatos megkötések:

Korlátozás 40

Korlátozás 75

Illékony Szerves Vegyületek - VOC = 25.38 %

Illékony Szerves Vegyületek - VOC = 253.82 g/Kg

Illékony Szerves Vegyületek - VOC = 242.90 g/l

Ahol alkalmazható, a következő szabályzat az irányadó:

Tanács 2012/18/EU irányelve (Seveso III)

Az Európai Parlament és a Tanács 648/2004/EK rendelete (a mosó- és tisztítószerekről).

2004/42/EK irányelv (illékony szerves vegyületek)



NA

15.2. Kémiai biztonsági értékelés

Kémiai biztonsági értékelést nem végeztek a keverékre.

A következő anyagoknál történt meg a kémiai biztonsági értékelés:
etanol

16. SZAKASZ: Egyéb információk

A 3. bekezdésben használható szöveg:

H225 Fokozottan tűzveszélyes folyadék és gőz.

H319 Súlyos szemirritációt okoz.

Veszélyességi osztály és veszélyességi kategória	Kód	Leírás
Flam. Liq. 2	2.6/2	Tűzveszélyes folyadékok, kategória 2
Eye Irrit. 2	3.3/2	Szemirritáció, kategória 2

Az előző kiadás módosított bekezdései:

1. SZAKASZ: Az anyag/keverék és a vállalat/vállalkozás azonosítása
3. SZAKASZ: Összetétel vagy az összetevőkre vonatkozó adatok
9. SZAKASZ: Fizikai és kémiai tulajdonságok
15. SZAKASZ: Szabályozással kapcsolatos információk

Ezt a dokumentumot olyan szakember készítette, aki ezzel kapcsolatban megfelelő képzést kapott
Főbb bibliográfiai források:

ECDIN – Vegyi anyagok környezetvédelmi adat- és információs hálózata – Közös Kutatóközpont,
az Európai Közösségek Bizottsága

SAX: AZ IPARI ANYAGOK VESZÉLYES TULAJDONSÁGAI – Nyolcadik kiadás – Van Nostrand
Reinold

A közzétett információk a fent jelzett időpontban rendelkezésünkre álló ismeretekre alapulnak.
Kizárólag a megjelölt termékre vonatkoznak és nem képeznek különösebb minőségi garanciát.

A felhasználónak kötelessége megbizonyosodni ezen információk helyessége és teljessége felől, az
egyéni felhasználásnak megfelelően.

Ez az adatlap minden előzetes adatlapot érvénytelenít és helyettesít.

ADR:	Veszélyes Áruk Nemzetközi Közúti Szállításáról szóló Európai Megállapodás.
ATE:	Becsült akut toxicitási érték
ATEmix:	Akut toxicitási érték (Keverékek)
CAS:	Kémiai Nyilvántartó Szolgálat (az Amerikai Kémiai Társaság részlege).
CLP:	Osztályozás, Címkézés, Csomagolás.
DNEL:	Származtatott hatásmentes szint.
EINECS:	Létező Kereskedelmi Vegyi Anyagok Európai Jegyzéke.
GefStoffVO:	Veszélyes Anyagok Német Szabályzata.
GHS:	Vegyi Anyagok Osztályozásának és Címkézésének Egyetemes Harmonizált Rendszere.
IATA:	Nemzetközi Légiszállítási Szövetség.
IATA-DGR:	Nemzetközi Légiszállítási Szövetség - Veszélyes Anyagok Előírásai.
ICAO:	Nemzetközi Polgári Repülési Szervezet.
ICAO-TI:	Nemzetközi Polgári Repülési Szervezet Műszaki Utasítása.

Biztonsági adatlap. WIZZY VETRI



IMDG:	Veszélyes Áruk Nemzetközi Tengerészeti Kódexe.
INCI:	A Kozmetikai Összetevők Nemzetközi Nevezéktana.
KSt:	Robbanási egyűthtató.
LC50:	Közepes halálos koncentráció
LD50:	Közepes halálos dózis
NA:	Nem alkalmazható
PNEC:	Becsült Hatásmentes Koncentráció
RID:	Veszélyes Áruk Nemzetközi Vasúti Fuvarozásáról szóló Szabályzat
STEL:	Rövid Távú Expozíció Érték
STOT:	Célszervi Toxicitás.
TLV:	Küszöbérték.
TWA:	Időarányosan súlyozott átlag
WGK:	Vízveszélyeztetési osztály.

Exposure Scenario, 23/07/2019

Substance identity	
Chemical name	Etanolo
CAS No.	64-17-5
EINECS No.	200-578-6

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1. ES 1 Consumer use; Anti-freeze and de-icing products (PC4)

1.1 TITLE SECTION

Exposure Scenario name	Car care and maintenance products - De-icing and anti-icing applications
Date - Version	22/07/2019 - 1.0
Life Cycle Stage	Consumer use
Main user group	Consumer uses
Sector(s) of use	Consumer uses (SU21)
Product Categories	Anti-freeze and de-icing products (PC4)

Environment Contributing Scenario

CS1 Covered by	ERC8d
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Consumer Contributing Scenario

CS2 Car Care - De-icing and anti-icing applications	PC4 - PC4_1
CS3 Car Care - De-icing and anti-icing applications	PC4 - PC4_2
CS4 Car Care - De-icing and anti-icing applications	PC4 - PC4_3

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario: Covered by (ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d)
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Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

5726 Pa

Conditions and measures related to treatment of waste (including article waste)

Waste treatment

No specific measures identified.

Other conditions affecting environmental exposure

Local marine water dilution factor: 100

Local freshwater dilution factor: 10

1.2. CS2: Consumer Contributing Scenario: Car Care - De-icing and anti-icing applications (PC4)

Product Categories	Anti-freeze and de-icing products (PC4)
Product (Sub-)Categories	Washing car window (PC4_1)

Product (article) characteristics

Concentration of substance in product:

Covers percentage substance in the product up to 1 %.

Amount used, frequency and duration of use/exposure

Amounts used:

Amount per use 0.5 g

Duration:

Covers use up to 0.017 h/event

Frequency:

Covers use up to 1 uses per day

Other conditions affecting consumers exposure

Room size: Covers use in a one car garage (>34 m³) under typical ventilation.

Temperature: Covers use at ambient temperatures.

1.2. CS3: Consumer Contributing Scenario: Car Care - De-icing and anti-icing applications (PC4)

Product Categories	Anti-freeze and de-icing products (PC4)
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Product (Sub-)Categories	Pouring into radiator (PC4_2)
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Product (article) characteristics

Concentration of substance in product:

Covers concentrations up to 10 %

Amount used, frequency and duration of use/exposure

Amounts used:

Amount per use 2000 g

Duration:

Covers use up to 0.17 h/event

Frequency:

Covers use up to 1 uses per day

Other conditions affecting consumers exposure

Room size: Covers use in a one car garage (>34 m³) under typical ventilation.

Temperature: Covers use at ambient temperatures.

Additional conditions human health

Covers skin contact area up to 482 cm²

1.2. CS4: Consumer Contributing Scenario: Car Care - De-icing and anti-icing applications (PC4)

Product Categories	Anti-freeze and de-icing products (PC4)
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Product (Sub-)Categories	Lock de-icer (PC4_3)
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Product (article) characteristics

Concentration of substance in product:

Covers concentrations up to 50 %

Amount used, frequency and duration of use/exposure

Amounts used:

Amount per use 4 g

Duration:

Covers use up to 0.25 h/event

Frequency:

Covers use up to 1 uses per day

Other conditions affecting consumers exposure

Room size: Covers use in a one car garage (>34 m³) under typical ventilation.

Temperature: Covers use at ambient temperatures.

Additional conditions human health

Covers skin contact area up to 214 cm²

1.3 Exposure estimation and reference to its source

1.3. CS1: Environment Contributing Scenario: Covered by (ERC8d)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	0.00443 mg/L	N/A	0.00461
freshwater sediment	0.0172 mg/kg bw/day	N/A	0.00467
marine water	0.000508 mg/L	N/A	0.000643
marine sediment	0.00194 mg/kg bw/day	N/A	0.00064
soil	0.00123 mg/kg bw/day	N/A	0.00724

1.2. CS2: Consumer Contributing Scenario: Car Care - De-icing and anti-icing applications (PC4)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.000102 mg/m ³	N/A	8.94E-07
inhalative, local, short-term	0.000102 mg/m ³	N/A	8.94E-07
dermal, systemic, long-term	0 mg/kg bw/day	N/A	N/A
combined routes, systemic, long-term	N/A	N/A	8.94E-07

1.2. CS3: Consumer Contributing Scenario: Car Care - De-icing and anti-icing applications (PC4)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	1.84 mg/m ³	N/A	0.0161
inhalative, local, short-term	1.84 mg/m ³	N/A	0.0161
dermal, systemic, long-term	5.62 mg/kg bw/day	N/A	0.0272
combined routes, systemic, long-term	N/A	N/A	0.0434

1.2. CS4: Consumer Contributing Scenario: Car Care - De-icing and anti-icing applications (PC4)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.51 mg/m ³	N/A	0.00447
inhalative, local, short-term	0.51 mg/m ³	N/A	0.0447
dermal, systemic, long-term	14 mg/kg bw/day	N/A	0.0679
combined routes, systemic, long-term	N/A	N/A	0.0724

1.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

2. ES 2 Consumer use; Various products (PC39, PC28)

2.1 TITLE SECTION

Exposure Scenario name	Cosumer other uses
Date - Version	22/07/2019 - 1.0
Life Cycle Stage	Consumer use
Main user group	Consumer uses
Sector(s) of use	Consumer uses (SU21)
Product Categories	Cosmetics, personal care products (PC39) - Perfumes, fragrances (PC28)

Environment Contributing Scenario

CS1 Covered by	ERC8a
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Consumer Contributing Scenario

CS2 Consumer	PC39 - PC28
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2.2 Conditions of use affecting exposure

2.2. CS1: Environment Contributing Scenario: Covered by (ERC8a)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a)
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Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

5726 Pa

Conditions and measures related to treatment of waste (including article waste)

Waste treatment

No specific measures identified.

2.2. CS2: Consumer Contributing Scenario: Consumer (PC39, PC28)

Product Categories	Cosmetics, personal care products - Perfumes, fragrances (PC39, PC28)
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2.3 Exposure estimation and reference to its source

2.3. CS1: Environment Contributing Scenario: Covered by (ERC8a)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	0.00236 mg/L	N/A	0.00246
freshwater sediment	0.00904 mg/kg bw/day	N/A	0.00246
marine water	0.000301 mg/L	N/A	0.000381
marine sediment	0.00115 mg/kg bw/day	N/A	0.00038
soil	0.00115 mg/kg bw/day	N/A	0.00676

2.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

3. ES 3 Use at industrial site

3.1 TITLE SECTION

Exposure Scenario name	Solvent
Date - Version	22/07/2019 - 1.0
Life Cycle Stage	Use at industrial site
Main user group	Industrial uses
Sector(s) of use	Industrial uses (SU3)

Environment Contributing Scenario

CS1 Covered by	ERC4
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Worker Contributing Scenario

CS2 Industrial	PROC1
CS3 Industrial	PROC2
CS4 Industrial	PROC3
CS5 Industrial	PROC4
CS6 Industrial	PROC5
CS7 Industrial	PROC7
CS8 Industrial	PROC8a
CS9 Industrial	PROC8b
CS10 Industrial	PROC10
CS11 Industrial	PROC13
CS12 Industrial	PROC15

3.2 Conditions of use affecting exposure

3.2. CS1: Environment Contributing Scenario: Covered by (ERC4)

Environmental release categories	Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)
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Product (article) characteristics

Vapour pressure:
< 10 kPa

Amount used, frequency and duration of use (or from service life)

Amounts used:

Annual site tonnage 3000 t(tonnes)/year

Maximum allowable site tonnage (MSafe): 124000 kg/day

Release type: Continuous release

Emission days: 300 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

Treat air emission to provide the required removal efficiency of (%):	Air - minimum efficiency of: 90 %
Prevent discharge of undissolved substance to or recover from onsite wastewater.	Water - minimum efficiency of: 87 %

Conditions and measures related to sewage treatment plant

STP type:

Municipal Sewage Treatment Plant

STP effluent (m³/day): 2000

Conditions and measures related to treatment of waste (including article waste)

Waste treatment

Incineration, disposal or recycling at specific offsite provider Contain and dispose of waste according to local regulations.	Waste - minimum efficiency of: 99.98 %
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Other conditions affecting environmental exposure

Local marine water dilution factor: 100

Local freshwater dilution factor: 10

Receiving surface water flow: 2000 m³/h

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Additional Good Practice Advice:

Contain leaks or spills within cabinets with removable trays.

3.2. CS2: Worker Contributing Scenario: Industrial (PROC1)

Process Categories	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)
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Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

< 10 kPa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Use in contained systems

Store substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Use suitable eye protection.

Other conditions affecting worker exposure

Temperature: Covers use at ambient temperatures.

3.2. CS3: Worker Contributing Scenario: Industrial (PROC2)

Process Categories	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)
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Product (article) characteristics	
Physical form of product: Liquid	
Vapour pressure: < 10 kPa	
Concentration of substance in product: Covers percentage substance in the product up to 100 %.	
Amount used, frequency and duration of use/exposure	
Duration: Covers daily exposures up to 8 hours	
Technical and organisational conditions and measures	
Technical and organisational measures Use in contained systems Store substance within a closed system.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Personal protection Use suitable eye protection.	
Other conditions affecting worker exposure	
Temperature: Covers use at ambient temperatures.	
3.2. CS4: Worker Contributing Scenario: Industrial (PROC3)	
Process Categories	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)
Product (article) characteristics	
Physical form of product: Liquid	
Vapour pressure: < 10 kPa	
Concentration of substance in product: Covers percentage substance in the product up to 100 %.	
Amount used, frequency and duration of use/exposure	
Duration: Covers daily exposures up to 8 hours	
Technical and organisational conditions and measures	
Technical and organisational measures Use in contained systems Store substance within a closed system.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Personal protection Use suitable eye protection.	
Other conditions affecting worker exposure	
Temperature: Covers use at ambient temperatures.	
3.2. CS5: Worker Contributing Scenario: Industrial (PROC4)	
Process Categories	Chemical production where opportunity for exposure arises (PROC4)
Product (article) characteristics	

Physical form of product: Liquid	
Vapour pressure: < 10 kPa	
Concentration of substance in product: Covers percentage substance in the product up to 100 %.	
<i>Amount used, frequency and duration of use/exposure</i>	
Duration: Covers daily exposures up to 8 hours	
<i>Technical and organisational conditions and measures</i>	
Technical and organisational measures Use in contained systems Store substance within a closed system.	
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>	
Personal protection Use suitable eye protection.	
<i>Other conditions affecting worker exposure</i>	
Temperature: Covers use at ambient temperatures.	
3.2. CS6: Worker Contributing Scenario: Industrial (PROC5)	
Process Categories	Mixing or blending in batch processes (PROC5)
<i>Product (article) characteristics</i>	
Physical form of product: Liquid	
Vapour pressure: < 10 kPa	
Concentration of substance in product: Covers percentage substance in the product up to 100 %.	
<i>Amount used, frequency and duration of use/exposure</i>	
Duration: Covers daily exposures up to 8 hours	
<i>Technical and organisational conditions and measures</i>	
Technical and organisational measures Use in contained systems Store substance within a closed system.	
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>	
Personal protection Use suitable eye protection.	
<i>Other conditions affecting worker exposure</i>	
Temperature: Covers use at ambient temperatures.	
3.2. CS7: Worker Contributing Scenario: Industrial (PROC7)	
Process Categories	Industrial spraying (PROC7)
<i>Product (article) characteristics</i>	
Physical form of product: Liquid	

Vapour pressure:

< 10 kPa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure**Duration:**

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures**Technical and organisational measures**

Use in contained systems

Store substance within a closed system.

Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

Conditions and measures related to personal protection, hygiene and health evaluation**Personal protection**

Use suitable eye protection.

Other conditions affecting worker exposure

Temperature: Covers use at ambient temperatures.

3.2. CS8: Worker Contributing Scenario: Industrial (PROC8a)

Process Categories	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)
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Product (article) characteristics**Physical form of product:**

Liquid

Vapour pressure:

< 10 kPa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure**Duration:**

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures**Technical and organisational measures**

Use in contained systems

Store substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation**Personal protection**

Use suitable eye protection.

Other conditions affecting worker exposure

Temperature: Covers use at ambient temperatures.

3.2. CS9: Worker Contributing Scenario: Industrial (PROC8b)

Process Categories	Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)
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Product (article) characteristics**Physical form of product:**

Liquid

Vapour pressure:

< 10 kPa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

*Amount used, frequency and duration of use/exposure***Duration:**

Covers daily exposures up to 8 hours

*Technical and organisational conditions and measures***Technical and organisational measures**

Use in contained systems

Store substance within a closed system.

*Conditions and measures related to personal protection, hygiene and health evaluation***Personal protection**

Use suitable eye protection.

Other conditions affecting worker exposure

Temperature: Covers use at ambient temperatures.

3.2. CS10: Worker Contributing Scenario: Industrial (PROC10)**Process Categories**

Roller application or brushing (PROC10)

*Product (article) characteristics***Physical form of product:**

Liquid

Vapour pressure:

< 10 kPa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

*Amount used, frequency and duration of use/exposure***Duration:**

Covers daily exposures up to 8 hours

*Technical and organisational conditions and measures***Technical and organisational measures**

Use in contained systems

Store substance within a closed system.

*Conditions and measures related to personal protection, hygiene and health evaluation***Personal protection**

Use suitable eye protection.

Other conditions affecting worker exposure

Temperature: Covers use at ambient temperatures.

3.2. CS11: Worker Contributing Scenario: Industrial (PROC13)**Process Categories**

Treatment of articles by dipping and pouring (PROC13)

*Product (article) characteristics***Physical form of product:**

Liquid

Vapour pressure:

< 10 kPa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure**Duration:**

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures**Technical and organisational measures**

Use in contained systems

Store substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation**Personal protection**

Use suitable eye protection.

Other conditions affecting worker exposure**Temperature:** Covers use at ambient temperatures.**3.2. CS12: Worker Contributing Scenario: Industrial (PROC15)****Process Categories**

Use as laboratory reagent (PROC15)

Product (article) characteristics**Physical form of product:**

Liquid

Vapour pressure:

< 10 kPa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure**Duration:**

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures**Technical and organisational measures**

Use in contained systems

Store substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation**Personal protection**

Use suitable eye protection.

Other conditions affecting worker exposure**Temperature:** Covers use at ambient temperatures.**3.3 Exposure estimation and reference to its source****3.3. CS1: Environment Contributing Scenario: Covered by (ERC4)**

Release route	Release rate	Release estimation method
Air	0.98 %	N/A
Water	0.01 %	N/A
soil	0 %	N/A

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
wastewater treatment plant microbes	6.32 mg/L	N/A	0.0109
freshwater	0.577 mg/L	N/A	0.601
freshwater sediment	2.21 mg/kg bw/day	N/A	0.601
marine water	0.0635 mg/L	N/A	0.0804
marine sediment	0.0635 mg/kg bw/day	N/A	0.0805
soil	0.0525 mg/kg bw/day	N/A	0.309

3.3. CS2: Worker Contributing Scenario: Industrial (PROC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	9.6 mg/m ³	N/A	< 0.01
dermal, systemic, long-term	0.03 mg/kg bw/day	N/A	< 0.01
combined routes, systemic, long-term	N/A	N/A	< 0.01

3.3. CS3: Worker Contributing Scenario: Industrial (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	9.6 mg/m ³	N/A	0.01
dermal, systemic, long-term	1.4 mg/kg bw/day	N/A	0.004
combined routes, systemic, long-term	N/A	N/A	0.0141

3.3. CS4: Worker Contributing Scenario: Industrial (PROC3)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	19 mg/m ³	N/A	0.02
dermal, systemic, long-term	0.69 mg/kg bw/day	N/A	0.002
combined routes, systemic, long-term	N/A	N/A	0.0222

3.3. CS5: Worker Contributing Scenario: Industrial (PROC4)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
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inhalative, systemic, long-term	38 mg/m ³	N/A	0.04
dermal, systemic, long-term	6.9 mg/kg bw/day	N/A	0.02
combined routes, systemic, long-term	N/A	N/A	0.0603

3.3. CS6: Worker Contributing Scenario: Industrial (PROC5)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	96 mg/m ³	N/A	0.101
dermal, systemic, long-term	14 mg/kg bw/day	N/A	0.04
combined routes, systemic, long-term	N/A	N/A	0.141

3.3. CS7: Worker Contributing Scenario: Industrial (PROC7)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	140 mg/m ³	N/A	0.151
dermal, systemic, long-term	43 mg/kg bw/day	N/A	0.125
combined routes, systemic, long-term	N/A	N/A	0.276

3.3. CS8: Worker Contributing Scenario: Industrial (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	96 mg/m ³	N/A	0.101
dermal, systemic, long-term	96 mg/kg bw/day	N/A	0.04
combined routes, systemic, long-term	N/A	N/A	0.141

3.3. CS9: Worker Contributing Scenario: Industrial (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	48 mg/m ³	N/A	0.05
dermal, systemic, long-term	14 mg/kg bw/day	N/A	0.04
combined routes, systemic, long-term	N/A	N/A	0.0904

3.3. CS10: Worker Contributing Scenario: Industrial (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
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inhalative, systemic, long-term	96 mg/m ³	N/A	0.101
dermal, systemic, long-term	27 mg/kg bw/day	N/A	0.08
combined routes, systemic, long-term	N/A	N/A	0.181

3.3. CS11: Worker Contributing Scenario: Industrial (PROC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	96 mg/m ³	N/A	0.101
dermal, systemic, long-term	14 mg/kg bw/day	N/A	0.04
combined routes, systemic, long-term	N/A	N/A	0.141

3.3. CS12: Worker Contributing Scenario: Industrial (PROC15)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	19 mg/m ³	N/A	0.02
dermal, systemic, long-term	0.34 mg/kg bw/day	N/A	< 0.01
combined routes, systemic, long-term	N/A	N/A	0.0212

3.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

4. ES 4 Use at industrial site

4.1 TITLE SECTION

Exposure Scenario name	Fuel
Date - Version	22/07/2019 - 1.0
Life Cycle Stage	Use at industrial site
Main user group	Industrial uses
Sector(s) of use	Industrial uses (SU3)

Environment Contributing Scenario

CS1 Covered by	ERC7
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Worker Contributing Scenario

CS2 Industrial	PROC1
CS3 Industrial	PROC2
CS4 Industrial	PROC3
CS5 Industrial	PROC8a
CS6 Industrial	PROC8b
CS7 Industrial	PROC15
CS8 Industrial	PROC16

4.2 Conditions of use affecting exposure

4.2. CS1: Environment Contributing Scenario: Covered by (ERC7)

Environmental release categories	Use of functional fluid at industrial site (ERC7)
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Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

< 10 kPa

Amount used, frequency and duration of use (or from service life)

Amounts used:

Annual site tonnage 20000 t(tonnes)/year

Maximum allowable site tonnage (MSafe): 14500000 kg/day

Release type: Continuous release

Emission days: 300 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

Provide onsite wastewater removal efficiency of ³ (%):

Water - minimum efficiency of: 87 %

Conditions and measures related to sewage treatment plant

STP type:

Municipal Sewage Treatment Plant
Water - minimum efficiency of: = 87 %

STP effluent (m³/day): 2000

Conditions and measures related to treatment of waste (including article waste)

Waste treatment

Product residual disposal complies with applicable regulations.

Other conditions affecting environmental exposure

Local marine water dilution factor: 100

Local freshwater dilution factor: 10

Receiving surface water flow: 2000 m³/day

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Additional Good Practice Advice:

Adequate closed storage facilities (e.g., bulk storage tanks, intermediate bulk containers, drums) are required.

4.2. CS2: Worker Contributing Scenario: Industrial (PROC1)

Process Categories

Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

< 10 kPa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Handle substance within a closed system.
Store substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Use suitable eye protection.

4.2. CS3: Worker Contributing Scenario: Industrial (PROC2)

Process Categories

Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

< 10 kPa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration: Covers daily exposures up to 8 hours	
<i>Technical and organisational conditions and measures</i>	
Technical and organisational measures Handle substance within a closed system. Store substance within a closed system.	
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>	
Personal protection Use suitable eye protection.	
4.2. CS4: Worker Contributing Scenario: Industrial (PROC3)	
Process Categories	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)
<i>Product (article) characteristics</i>	
Physical form of product: Liquid	
Vapour pressure: < 10 kPa	
Concentration of substance in product: Covers percentage substance in the product up to 100 %.	
<i>Amount used, frequency and duration of use/exposure</i>	
Duration: Covers daily exposures up to 8 hours	
<i>Technical and organisational conditions and measures</i>	
Technical and organisational measures Handle substance within a closed system. Store substance within a closed system.	
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>	
Personal protection Use suitable eye protection.	
4.2. CS5: Worker Contributing Scenario: Industrial (PROC8a)	
Process Categories	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)
<i>Product (article) characteristics</i>	
Physical form of product: Liquid	
Vapour pressure: < 10 kPa	
Concentration of substance in product: Covers percentage substance in the product up to 100 %.	
<i>Amount used, frequency and duration of use/exposure</i>	
Duration: Covers daily exposures up to 8 hours	
<i>Technical and organisational conditions and measures</i>	
Technical and organisational measures Handle substance within a closed system. Store substance within a closed system.	
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>	

Personal protection

Use suitable eye protection.

4.2. CS6: Worker Contributing Scenario: Industrial (PROC8b)**Process Categories**

Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)

*Product (article) characteristics***Physical form of product:**

Liquid

Vapour pressure:

< 10 kPa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

*Amount used, frequency and duration of use/exposure***Duration:**

Covers daily exposures up to 8 hours

*Technical and organisational conditions and measures***Technical and organisational measures**

Handle substance within a closed system.

Store substance within a closed system.

*Conditions and measures related to personal protection, hygiene and health evaluation***Personal protection**

Use suitable eye protection.

4.2. CS7: Worker Contributing Scenario: Industrial (PROC15)**Process Categories**

Use as laboratory reagent (PROC15)

*Product (article) characteristics***Physical form of product:**

Liquid

Vapour pressure:

< 10 kPa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

*Amount used, frequency and duration of use/exposure***Duration:**

Covers daily exposures up to 8 hours

*Technical and organisational conditions and measures***Technical and organisational measures**

Handle substance within a closed system.

Store substance within a closed system.

*Conditions and measures related to personal protection, hygiene and health evaluation***Personal protection**

Use suitable eye protection.

4.2. CS8: Worker Contributing Scenario: Industrial (PROC16)**Process Categories**

Use of fuels (PROC16)

*Product (article) characteristics***Physical form of product:**

Liquid

Vapour pressure:

< 10 kPa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure**Duration:**

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures**Technical and organisational measures**

Handle substance within a closed system.
Store substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation**Personal protection**

Use suitable eye protection.

4.3 Exposure estimation and reference to its source**4.3. CS1: Environment Contributing Scenario: Covered by (ERC7)**

Release route	Release rate	Release estimation method
Air	0.0025 %	N/A
Water	1E-05 %	N/A
soil	0 %	N/A

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
wastewater treatment plant microbes	0.0421 mg/L	N/A	7.26E-05
freshwater	0.00657 mg/L	N/A	0.00684
freshwater sediment	0.00685 mg/kg bw/day	N/A	0.00685
marine water	0.00363 mg/L	N/A	0.00459
marine sediment	0.0139 mg/kg bw/day	N/A	0.00459
soil	0.00694 mg/kg bw/day	N/A	0.0408

4.3. CS2: Worker Contributing Scenario: Industrial (PROC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.019 mg/m ³	N/A	< 0.001
dermal, systemic, long-term	0.03 mg/kg bw/day	N/A	< 0.001
combined routes, systemic, long-term	N/A	N/A	< 0.001

4.3. CS3: Worker Contributing Scenario: Industrial (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	9.6 mg/m ³	N/A	0.01
dermal, systemic, long-term	1.4 mg/kg bw/day	N/A	0.004
combined routes, systemic, long-term	N/A	N/A	0.0222

4.3. CS4: Worker Contributing Scenario: Industrial (PROC3)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	19 mg/m ³	N/A	0.02
dermal, systemic, long-term	0.69 mg/kg bw/day	N/A	0.002
combined routes, systemic, long-term	N/A	N/A	0.222

4.3. CS5: Worker Contributing Scenario: Industrial (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	96 mg/m ³	N/A	0.101
dermal, systemic, long-term	14 mg/m ³	N/A	0.04
combined routes, systemic, long-term	N/A	N/A	0.141

4.3. CS6: Worker Contributing Scenario: Industrial (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	48 mg/m ³	N/A	0.05
dermal, systemic, long-term	14 mg/kg bw/day	N/A	0.04
combined routes, systemic, long-term	N/A	N/A	0.0904

4.3. CS7: Worker Contributing Scenario: Industrial (PROC15)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	19 mg/m ³	N/A	0.02
dermal, systemic, long-term	0.34 mg/kg bw/day	N/A	< 0.001

combined routes, systemic, long-term	N/A	N/A	0.0112
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4.3. CS8: Worker Contributing Scenario: Industrial (PROC16)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	9.6 mg/m ³	N/A	0.01
dermal, systemic, long-term	0.34 mg/kg bw/day	N/A	< 0.001
combined routes, systemic, long-term	N/A	N/A	0.0111

4.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

5. ES 5 Widespread use by professional workers

5.1 TITLE SECTION

Exposure Scenario name	Solvent
Date - Version	23/07/2019 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)

Environment Contributing Scenario

CS1 Covered by	ERC8a - ERC8d
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Worker Contributing Scenario

CS2 General use from professional operators	PROC1
CS3 General use from professional operators	PROC2
CS4 General use from professional operators	PROC3
CS5 General use from professional operators	PROC4
CS6 General use from professional operators	PROC5 - PROC8a
CS7 General use from professional operators	PROC8b
CS8 General use from professional operators	PROC10
CS9 General use from professional operators	PROC11
CS10 General use from professional operators	PROC11
CS11 General use from professional operators	PROC13
CS12 General use from professional operators	PROC19

5.2 Conditions of use affecting exposure

5.2. CS1: Environment Contributing Scenario: Covered by (ERC8a, ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8a, ERC8d)
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Product (article) characteristics

Physical form of product:

Liquid, vapour pressure 0,5 - 10 kPa at STP

Amount used, frequency and duration of use (or from service life)

Amounts used:

Annual site tonnage 0.1 t(tonnes)/year

Maximum allowable site tonnage (MSafe): 715 kg/day

Release type: Continuous release

Emission days: 365 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

Treat air emission to provide the required removal efficiency of (%):	Air - minimum efficiency of: 90 %
Prevent discharge of undissolved substance to or recover from onsite wastewater.	

Conditions and measures related to treatment of waste (including article waste)

Waste treatment

Hazardous waste incineration	Waste - minimum efficiency of: 99.98 %
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5.2. CS2: Worker Contributing Scenario: General use from professional operators (PROC1)

Process Categories	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)
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Product (article) characteristics

Physical form of product:

Liquid, vapour pressure 0,5 - 10 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Use suitable eye protection.

5.2. CS3: Worker Contributing Scenario: General use from professional operators (PROC2)

Process Categories	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)
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Product (article) characteristics

Physical form of product:

Liquid, vapour pressure 0,5 - 10 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Use suitable eye protection.

5.2. CS4: Worker Contributing Scenario: General use from professional operators (PROC3)

Process Categories	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)
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Product (article) characteristics

Physical form of product:

Liquid, vapour pressure 0,5 - 10 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Use suitable eye protection.

5.2. CS5: Worker Contributing Scenario: General use from professional operators (PROC4)

Process Categories

Chemical production where opportunity for exposure arises (PROC4)

Product (article) characteristics

Physical form of product:

Liquid, vapour pressure 0,5 - 10 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Use suitable eye protection.

5.2. CS6: Worker Contributing Scenario: General use from professional operators (PROC5, PROC8a)

Process Categories

Mixing or blending in batch processes - Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC5, PROC8a)

Product (article) characteristics

Physical form of product:

Liquid, vapour pressure 0,5 - 10 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Use suitable eye protection.

5.2. CS7: Worker Contributing Scenario: General use from professional operators (PROC8b)

Process Categories

Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)

Product (article) characteristics

Physical form of product:

Liquid, vapour pressure 0,5 - 10 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Use suitable eye protection.

5.2. CS8: Worker Contributing Scenario: General use from professional operators (PROC10)**Process Categories**

Roller application or brushing (PROC10)

*Product (article) characteristics***Physical form of product:**

Liquid, vapour pressure 0,5 - 10 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

*Amount used, frequency and duration of use/exposure***Duration:**

Covers daily exposures up to 8 hours

*Conditions and measures related to personal protection, hygiene and health evaluation***Personal protection**

Use suitable eye protection.

5.2. CS9: Worker Contributing Scenario: General use from professional operators (PROC11)**Process Categories**

Non industrial spraying (PROC11)

*Product (article) characteristics***Physical form of product:**

Liquid, vapour pressure 0,5 - 10 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

*Amount used, frequency and duration of use/exposure***Duration:**

Covers daily exposures up to 8 hours

*Technical and organisational conditions and measures***Technical and organisational measures**

Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

*Conditions and measures related to personal protection, hygiene and health evaluation***Personal protection**

Use suitable eye protection.

Wear suitable gloves tested to EN374.

Other conditions affecting worker exposure

Indoor use

5.2. CS10: Worker Contributing Scenario: General use from professional operators (PROC11)**Process Categories**

Non industrial spraying (PROC11)

*Product (article) characteristics***Physical form of product:**

Liquid, vapour pressure 0,5 - 10 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

*Amount used, frequency and duration of use/exposure***Duration:**

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Use suitable eye protection.

Wear suitable gloves tested to EN374.

Wear a respirator conforming to EN140.

Other conditions affecting worker exposure

Outdoor use

5.2. CS11: Worker Contributing Scenario: General use from professional operators (PROC13)

Process Categories

Treatment of articles by dipping and pouring (PROC13)

Product (article) characteristics

Physical form of product:

Liquid, vapour pressure 0,5 - 10 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Use suitable eye protection.

Wear suitable gloves tested to EN374.

5.2. CS12: Worker Contributing Scenario: General use from professional operators (PROC19)

Process Categories

Manual activities involving hand contact (PROC19)

Product (article) characteristics

Physical form of product:

Liquid, vapour pressure 0,5 - 10 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Use suitable eye protection.

Wear suitable gloves tested to EN374.

5.3 Exposure estimation and reference to its source

5.3. CS1: Environment Contributing Scenario: Covered by (ERC8a, ERC8d)

Release route	Release rate	Release estimation method
Air	0.98 %	N/A
Water	0.01 %	N/A

soil	0.01 %	N/A
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protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
wastewater treatment plant microbes	0.000173 mg/L	N/A	2.98E-07
freshwater	0.00238 mg/L	N/A	0.00248
freshwater sediment	0.00912 mg/kg bw/day	N/A	0.00248
marine sediment	0.000303 mg/L	N/A	0.000384
marine sediment	0.00116 mg/kg bw/day	N/A	0.000383
soil	0.00116 mg/kg bw/day	N/A	0.00682

5.3. CS2: Worker Contributing Scenario: General use from professional operators (PROC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.019 mg/m ³	N/A	< 0.001
dermal, systemic, long-term	0.03 mg/kg bw/day	N/A	< 0.001
combined routes, systemic, long-term	N/A	N/A	< 0.001

5.3. CS3: Worker Contributing Scenario: General use from professional operators (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	38 mg/m ³	N/A	0.04
dermal, systemic, long-term	1.4 mg/kg bw/day	N/A	0.004
combined routes, systemic, long-term	N/A	N/A	0.0443

5.3. CS4: Worker Contributing Scenario: General use from professional operators (PROC3)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	48 mg/m ³	N/A	0.05
dermal, systemic, long-term	0.69 mg/kg bw/day	N/A	0.002
combined routes, systemic, long-term	N/A	N/A	0.0524

5.3. CS5: Worker Contributing Scenario: General use from professional operators (PROC4)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	96 mg/m ³	N/A	0.101
dermal, systemic, long-term	6.9 mg/kg bw/day	N/A	0.02
combined routes, systemic, long-term	N/A	N/A	0.121

5.3. CS6: Worker Contributing Scenario: General use from professional operators (PROC5, PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	190 mg/m ³	N/A	0.202
dermal, systemic, long-term	14 mg/kg bw/day	N/A	0.04
combined routes, systemic, long-term	N/A	N/A	0.242

5.3. CS7: Worker Contributing Scenario: General use from professional operators (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	96 mg/m ³	N/A	0.202
dermal, systemic, long-term	14 mg/kg bw/day	N/A	0.04
combined routes, systemic, long-term	N/A	N/A	0.141

5.3. CS8: Worker Contributing Scenario: General use from professional operators (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	190 mg/m ³	N/A	0.202
dermal, systemic, long-term	27 mg/kg bw/day	N/A	0.08
combined routes, systemic, long-term	N/A	N/A	0.282

5.3. CS9: Worker Contributing Scenario: General use from professional operators (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	290 mg/m ³	N/A	0.303
dermal, systemic, long-term	21 mg/kg bw/day	N/A	0.062
combined routes, systemic, long-term	N/A	N/A	0.365

5.3. CS10: Worker Contributing Scenario: General use from professional operators (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	67 mg/m ³	N/A	0.071
dermal, systemic, long-term	21 mg/kg bw/day	N/A	0.062
combined routes, systemic, long-term	N/A	N/A	0.133

5.3. CS11: Worker Contributing Scenario: General use from professional operators (PROC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	190 mg/m ³	N/A	0.202
dermal, systemic, long-term	2.7 mg/kg bw/day	N/A	0.008
combined routes, systemic, long-term	N/A	N/A	0.21

5.3. CS12: Worker Contributing Scenario: General use from professional operators (PROC19)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	190 mg/m ³	N/A	0.202
dermal, systemic, long-term	28 mg/kg bw/day	N/A	0.082
combined routes, systemic, long-term	N/A	N/A	0.284

5.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

6. ES 6 Widespread use by professional workers

6.1 TITLE SECTION

Exposure Scenario name	Fuel
Date - Version	23/07/2019 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)

Environment Contributing Scenario

CS1 Covered by	ERC9a - ERC9b
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Worker Contributing Scenario

CS2 General use from professional operators	PROC1
CS3 General use from professional operators	PROC2
CS4 General use from professional operators	PROC3
CS5 General use from professional operators	PROC8a
CS6 General use from professional operators	PROC8b
CS7 General use from professional operators	PROC16

6.2 Conditions of use affecting exposure

6.2. CS1: Environment Contributing Scenario: Covered by (ERC9a, ERC9b)

Environmental release categories	Widespread use of functional fluid (indoor) - Widespread use of functional fluid (outdoor) (ERC9a, ERC9b)
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Product (article) characteristics

Physical form of product:

Liquid, vapour pressure 0,5 - 10 kPa at STP

Amount used, frequency and duration of use (or from service life)

Amounts used:

Annual site tonnage 1 t(tonnes)/year

Maximum allowable site tonnage (MSafe): 7190 kg/day

Release type: Continuous release

Emission days: 365 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

Prevent discharge of undissolved substance to or recover from onsite wastewater.

Conditions and measures related to treatment of waste (including article waste)

Waste treatment

Product residual disposal complies with applicable regulations.

6.2. CS2: Worker Contributing Scenario: General use from professional operators (PROC1)

Process Categories	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)
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Product (article) characteristics

Physical form of product:

Liquid, vapour pressure 0,5 - 10 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Technical and organisational conditions and measures

Technical and organisational measures

Handle substance within a closed system.

Store substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Use suitable eye protection.

6.2. CS3: Worker Contributing Scenario: General use from professional operators (PROC2)

Process Categories	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)
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Product (article) characteristics

Physical form of product:

Liquid, vapour pressure 0,5 - 10 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Technical and organisational conditions and measures

Technical and organisational measures

Handle substance within a closed system.

Store substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Use suitable eye protection.

6.2. CS4: Worker Contributing Scenario: General use from professional operators (PROC3)

Process Categories	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)
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Product (article) characteristics

Physical form of product:

Liquid, vapour pressure 0,5 - 10 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Technical and organisational conditions and measures

Technical and organisational measures

Handle substance within a closed system.

Store substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Use suitable eye protection.

6.2. CS5: Worker Contributing Scenario: General use from professional operators (PROC8a)

Process Categories	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)
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Product (article) characteristics

Physical form of product:

Liquid, vapour pressure 0,5 - 10 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Technical and organisational conditions and measures**Technical and organisational measures**

Handle substance within a closed system.
Store substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation**Personal protection**

Use suitable eye protection.

6.2. CS6: Worker Contributing Scenario: General use from professional operators (PROC8b)**Process Categories**

Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)

Product (article) characteristics**Physical form of product:**

Liquid, vapour pressure 0,5 - 10 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Technical and organisational conditions and measures**Technical and organisational measures**

Handle substance within a closed system.
Store substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation**Personal protection**

Use suitable eye protection.

6.2. CS7: Worker Contributing Scenario: General use from professional operators (PROC16)**Process Categories**

Use of fuels (PROC16)

Product (article) characteristics**Physical form of product:**

Liquid, vapour pressure 0,5 - 10 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Technical and organisational conditions and measures**Technical and organisational measures**

Handle substance within a closed system.
Store substance within a closed system.

Conditions and measures related to personal protection, hygiene and health evaluation**Personal protection**

Use suitable eye protection.

6.3 Exposure estimation and reference to its source**6.3. CS1: Environment Contributing Scenario: Covered by (ERC9a, ERC9b)**

Release route	Release rate	Release estimation method
Air	0.01 %	N/A
Water	1E-05 %	N/A

soil	0 %	N/A
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6.3. CS2: Worker Contributing Scenario: General use from professional operators (PROC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.019 mg/m ³	N/A	< 0.001
dermal, systemic, long-term	0.03 mg/kg bw/day	N/A	< 0.001
combined routes, systemic, long-term	N/A	N/A	< 0.001

6.3. CS3: Worker Contributing Scenario: General use from professional operators (PROC2)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	38 mg/m ³	N/A	0.04
dermal, systemic, long-term	1.4 mg/kg bw/day	N/A	0.004
combined routes, systemic, long-term	N/A	N/A	0.0443

6.3. CS4: Worker Contributing Scenario: General use from professional operators (PROC3)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	48 mg/m ³	N/A	0.05
dermal, systemic, long-term	0.69 mg/kg bw/day	N/A	0.002
combined routes, systemic, long-term	N/A	N/A	0.0524

6.3. CS5: Worker Contributing Scenario: General use from professional operators (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	190 mg/m ³	N/A	0.202
dermal, systemic, long-term	14 mg/kg bw/day	N/A	0.04
combined routes, systemic, long-term	N/A	N/A	0.242

6.3. CS6: Worker Contributing Scenario: General use from professional operators (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	96 mg/m ³	N/A	0.101
dermal, systemic, long-term	14 mg/kg bw/day	N/A	0.04

combined routes, systemic, long-term	N/A	N/A	0.141
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6.3. CS7: Worker Contributing Scenario: General use from professional operators (PROC16)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	19 mg/m ³	N/A	0.02
dermal, systemic, long-term	0.34 mg/kg bw/day	N/A	< 0.001
combined routes, systemic, long-term	N/A	N/A	0.0212

6.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

7. ES 7 Consumer use; Fuels (PC13)

7.1 TITLE SECTION

Exposure Scenario name	Fuel
Date - Version	23/07/2019 - 1.0
Life Cycle Stage	Consumer use
Main user group	Consumer uses
Sector(s) of use	Consumer uses (SU21)
Product Categories	Fuels (PC13)

Environment Contributing Scenario

CS1 Covered by	ERC9b
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Consumer Contributing Scenario

CS2 Consumer	PC13 - PC13_1
CS3 Consumer	PC13 - PC13_2
CS4 Consumer	PC13 - PC13_3
CS5 Consumer	PC13 - PC13_4

7.2 Conditions of use affecting exposure

7.2. CS1: Environment Contributing Scenario: Covered by (ERC9b)

Environmental release categories	Widespread use of functional fluid (outdoor) (ERC9b)
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Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

5726 Pa

Conditions and measures related to treatment of waste (including article waste)

Waste treatment

Product residual disposal complies with applicable regulations.

Other conditions affecting environmental exposure

Local marine water dilution factor: 100

Local freshwater dilution factor: 10

7.2. CS2: Consumer Contributing Scenario: Consumer (PC13)

Product Categories	Fuels (PC13)
Product (Sub-)Categories	Liquid: Automotive Refuelling (PC13_1)

Product (article) characteristics

Concentration of substance in product:

Covers concentrations up to 85 %

Amount used, frequency and duration of use/exposure

Amounts used:

Amount per use 37500 g

Duration:

Exposure duration 0.05 h/event

Frequency:

Covers use up to 51 times per year

Other conditions affecting consumers exposure

Outdoor use

Additional conditions human healthCovers skin contact area up to 210 cm²**7.2. CS3: Consumer Contributing Scenario: Consumer (PC13)****Product Categories**

Fuels (PC13)

Product (Sub-)Categories

Liquid Scooter Refuelling (PC13_2)

*Product (article) characteristics***Concentration of substance in product:**

Covers concentrations up to 85 %

*Amount used, frequency and duration of use/exposure***Amounts used:**

Amount per use 37500 g

Duration:

Exposure duration 0.033 h/event

Frequency:

Covers use up to 51 times per year

Other conditions affecting consumers exposure

Outdoor use

Additional conditions human healthCovers skin contact area up to 210 cm²**7.2. CS4: Consumer Contributing Scenario: Consumer (PC13)****Product Categories**

Fuels (PC13)

Product (Sub-)Categories

Liquid, Garden equipment - Use (PC13_3)

*Product (article) characteristics***Concentration of substance in product:**

Covers concentrations up to 15 %

*Amount used, frequency and duration of use/exposure***Amounts used:**

Amount per use 750 g

Duration:

Exposure duration 2 h/event

Frequency:

Covers use up to 25 times per year

Other conditions affecting consumers exposure

Outdoor use

Additional conditions human healthCovers skin contact area up to 210 cm²**7.2. CS5: Consumer Contributing Scenario: Consumer (PC13)****Product Categories**

Fuels (PC13)

Product (Sub-)Categories	Liquid: Garden equipment - Refuelling (PC13_4)
Product (article) characteristics	
Concentration of substance in product: Covers concentrations up to 85 %	
Amount used, frequency and duration of use/exposure	
Amounts used: Amount per use 750 g	
Duration: Exposure duration 0.05 h/event	
Frequency: Covers use up to 25 times per year	
Other conditions affecting consumers exposure	
Room size: Covers use in a one car garage (>34 m ³) under typical ventilation.	
Temperature: Covers use at ambient temperatures.	
Additional conditions human health Covers skin contact area up to 210 cm ²	

7.3 Exposure estimation and reference to its source

7.3. CS1: Environment Contributing Scenario: Covered by (ERC9b)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	0.0236 mg/L	N/A	0.00246
freshwater sediment	0.00905 mg/kg bw/day	N/A	0.00246
marine water	0.0003 mg/L	N/A	0.00038
marine sediment	0.0015 mg/kg bw/day	N/A	0.00038
marine sediment	0.0015 mg/kg bw/day	N/A	0.00676

7.2. CS2: Consumer Contributing Scenario: Consumer (PC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.187 mg/m ³	N/A	0.00164
inhalative, local, short-term	1.3 mg/m ³	N/A	0.0114
dermal, systemic, long-term	0.117 mg/kg bw/day	N/A	8.1E-05
combined routes, systemic, long-term	N/A	N/A	0.0114

7.2. CS3: Consumer Contributing Scenario: Consumer (PC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.0612 mg/m ³	N/A	0.000544

inhalative, local, short-term	0.434 mg/m ³	N/A	0.0038
dermal, systemic, long-term	0.117 mg/kg bw/day	N/A	8.1E-05
combined routes, systemic, long-term	N/A	N/A	0.00388

7.2. CS4: Consumer Contributing Scenario: Consumer (PC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.0764 mg/m ³	N/A	0.00067
inhalative, local, short-term	1.09 mg/m ³	N/A	0.00956
dermal, systemic, long-term	4.13 mg/kg bw/day	N/A	0.0014
combined routes, systemic, long-term	N/A	N/A	0.0109

7.2. CS5: Consumer Contributing Scenario: Consumer (PC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.079 mg/m ³	N/A	0.000692
inhalative, local, short-term	1.12 mg/m ³	N/A	0.00982
dermal, systemic, long-term	0.117 mg/kg bw/day	N/A	3.98E-05
combined routes, systemic, long-term	N/A	N/A	0.00986

7.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

8. ES 8 Consumer use; Various products (PC1, PC3, PC8, PC18, PC23)

8.1 TITLE SECTION

Exposure Scenario name	Cosumer other uses
Date - Version	23/07/2019 - 1.0
Life Cycle Stage	Consumer use
Main user group	Consumer uses
Sector(s) of use	Consumer uses (SU21)
Product Categories	Adhesives, sealants (PC1) - Air care products (PC3) - Biocidal products (PC8) - Ink and toners (PC18) - Leather treatment products (PC23) - Lubricants, greases, release products (PC24) - Plant protection products (PC27) - Polishes and wax blends (PC31) - Textile dyes and impregnating products (PC34)

Environment Contributing Scenario

CS1 Covered by	ERC8a - ERC8d
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Consumer Contributing Scenario

CS2 Consumer	PC1 - PC1_1
CS3 Consumer	PC1 - PC1_3
CS4 Consumer	PC1 - PC1_4
CS5 Consumer	PC3 - PC3_1
CS6 Consumer	PC3 - PC3_2
CS7 Consumer	PC8 - PC35_1, PC8_1
CS8 Consumer	PC8 - PC8_2, PC35_2
CS9 Consumer	PC8 - PC8_3, PC35_3
CS10 Consumer	PC18
CS11 Consumer	PC23 - PC23_1, PC31_1
CS12 Consumer	PC23 - PC23_2, PC31_2
CS13 Consumer	PC24 - PC16_1, PC17_1, PC24_1, 36
CS14 Consumer	PC27
CS15 Consumer	PC31 - PC23_1, PC31_1
CS16 Consumer	PC31 - PC23_2, PC31_2

8.2 Conditions of use affecting exposure

8.2. CS1: Environment Contributing Scenario: Covered by (ERC8a, ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8a, ERC8d)
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Product (article) characteristics

Physical form of product:

Liquid, vapour pressure > 10 kPa at STP

Conditions and measures related to treatment of waste (including article waste)

Waste treatment

Hazardous waste incineration

Waste - minimum efficiency of: 99.8 %

Other conditions affecting environmental exposure

Local marine water dilution factor: 100

Local freshwater dilution factor: 10

Receiving surface water flow: 2000 m³/day

8.2. CS2: Consumer Contributing Scenario: Consumer (PC1)

Product Categories Adhesives, sealants (PC1)

Product (Sub-)Categories Glues, hobby use (PC1_1)

Product (article) characteristics

Concentration of substance in product:

Covers concentrations up to 70 %

Amount used, frequency and duration of use/exposure

Amounts used:

Amount per use 50 g

Duration:

Exposure duration 4 h/event

Frequency:

Covers exposure up to 1 events per day

Other conditions affecting consumers exposure

Room size: Covers use in room size of 20 m³

Additional conditions human health

Covers skin contact area up to 35 cm²

8.2. CS3: Consumer Contributing Scenario: Consumer (PC1)

Product Categories Adhesives, sealants (PC1)

Product (Sub-)Categories Glue from spray (PC1_3)

Product (article) characteristics

Concentration of substance in product:

Covers concentrations up to 30 %

Amount used, frequency and duration of use/exposure

Amounts used:

Amount per use 50 g

Duration:

Exposure duration 4 h/event

Frequency:

Covers exposure up to 6 times per year

Other conditions affecting consumers exposure

Room size: Covers use in room size of 20 m³

Additional conditions human health

Covers skin contact area up to 35 cm²

8.2. CS4: Consumer Contributing Scenario: Consumer (PC1)

Product Categories Adhesives, sealants (PC1)

Product (Sub-)Categories	Sealants (PC1_4)
<i>Product (article) characteristics</i>	
Concentration of substance in product: Covers concentrations up to 30 %	
<i>Amount used, frequency and duration of use/exposure</i>	
Amounts used: Amount per use 50 g	
Duration: Exposure duration 1 h/event	
Frequency: Covers exposure up to 1 events per day	
<i>Other conditions affecting consumers exposure</i>	
Room size: Covers use in room size of 20 m ³	
Additional conditions human health Covers skin contact area up to 35 cm ²	
8.2. CS5: Consumer Contributing Scenario: Consumer (PC3)	
Product Categories	Air care products (PC3)
Product (Sub-)Categories	Air care, instant action (aerosol sprays) (PC3_1)
<i>Product (article) characteristics</i>	
Concentration of substance in product: Covers concentrations up to 40 %	
<i>Amount used, frequency and duration of use/exposure</i>	
Amounts used: Amount per use 50 g	
Duration: Exposure duration 0.3 h/event	
Frequency: Covers exposure up to 4 events per day	
<i>Other conditions affecting consumers exposure</i>	
Room size: Covers use in room size of 20 m ³	
Additional conditions human health Covers skin contact area up to 35 cm ²	
8.2. CS6: Consumer Contributing Scenario: Consumer (PC3)	
Product Categories	Air care products (PC3)
Product (Sub-)Categories	Air care, continuous action (solid and liquid) (PC3_2)
<i>Product (article) characteristics</i>	
Concentration of substance in product: Covers concentrations up to 10 %	
<i>Amount used, frequency and duration of use/exposure</i>	
Amounts used: Amount per use 50 g	
Duration: Exposure duration 8 h/event	
Frequency:	

Covers exposure up to 1 events per day

Other conditions affecting consumers exposure

Room size: Covers use in room size of 20 m³

Additional conditions human health

Covers skin contact area up to 35 cm²

8.2. CS7: Consumer Contributing Scenario: Consumer (PC8)

Product Categories	Biocidal products (PC8)
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Product (Sub-)Categories	Laundry and dish washing products (PC35_1, PC8_1)
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Product (article) characteristics

Concentration of substance in product:

Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use/exposure

Amounts used:

Amount per use 15 g

Duration:

Exposure duration 0.5 h/event

Frequency:

Covers exposure up to 1 events per day

Other conditions affecting consumers exposure

Room size: Covers use in room size of 20 m³

Additional conditions human health

Covers skin contact area up to 857 cm²

8.2. CS8: Consumer Contributing Scenario: Consumer (PC8)

Product Categories	Biocidal products (PC8)
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Product (Sub-)Categories	Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) (PC8_2, PC35_2)
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Product (article) characteristics

Concentration of substance in product:

Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use/exposure

Amounts used:

Amount per use 50 g

Duration:

Exposure duration 0.3 h/event

Frequency:

Covers exposure up to 125 times per year

Other conditions affecting consumers exposure

Room size: Covers use in room size of 20 m³

Additional conditions human health

Covers skin contact area up to 857 cm²

8.2. CS9: Consumer Contributing Scenario: Consumer (PC8)

Product Categories	Biocidal products (PC8)
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Product (Sub-)Categories	Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) (PC8_3, PC35_3)
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Product (article) characteristics

Concentration of substance in product:

Covers concentrations up to 15 %

Amount used, frequency and duration of use/exposure

Amounts used:

Amount per use 50 g

Duration:

Exposure duration 0.2 h/event

Frequency:

Covers exposure up to 125 times per year

Other conditions affecting consumers exposure

Room size: Covers use in room size of 20 m³

Ventilation rate: Covers use under typical household ventilation.

Additional conditions human health

Covers skin contact area up to 428 cm²

8.2. CS10: Consumer Contributing Scenario: Consumer (PC18)

Product Categories

Ink and toners (PC18)

Product (article) characteristics

Concentration of substance in product:

Covers concentrations up to 50 %

Amount used, frequency and duration of use/exposure

Amounts used:

Amount per use 50 g

Duration:

Exposure duration 8 h/event

Frequency:

Covers exposure up to 1 uses per day

Other conditions affecting consumers exposure

Room size: Covers use in room size of 20 m³

Ventilation rate: Covers use under typical household ventilation.

Additional conditions human health

Covers skin contact area up to 71 cm²

8.2. CS11: Consumer Contributing Scenario: Consumer (PC23)

Product Categories

Leather treatment products (PC23)

Product (Sub-)Categories

Polishes, wax/cream (floor, furniture, shoes) (PC23_1, PC31_1)

Product (article) characteristics

Concentration of substance in product:

Covers concentrations up to 50 %

Amount used, frequency and duration of use/exposure

Amounts used:

Amount per use 50 g

Duration:

Exposure duration 1.2 h/event

Frequency:

Covers exposure up to 29 times per year

Other conditions affecting consumers exposure

Room size: Covers use in room size of 20 m³

Ventilation rate: Covers use under typical household ventilation.

Additional conditions human health

Covers skin contact area up to 430 cm²

8.2. CS12: Consumer Contributing Scenario: Consumer (PC23)

Product Categories	Leather treatment products (PC23)
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Product (Sub-)Categories	Polishes, spray (furniture, shoes) (PC23_2, PC31_2)
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Product (article) characteristics

Concentration of substance in product:

Covers concentrations up to 20 %

Amount used, frequency and duration of use/exposure

Amounts used:

Amount per use 50 g

Duration:

Exposure duration 0.3 h/event

Frequency:

Covers exposure up to 8 times per year

Other conditions affecting consumers exposure

Room size: Covers use in room size of 20 m³

Ventilation rate: Covers use under typical household ventilation.

Additional conditions human health

Covers skin contact area up to 430 cm²

8.2. CS13: Consumer Contributing Scenario: Consumer (PC24)

Product Categories	Lubricants, greases, release products (PC24)
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Product (Sub-)Categories	Liquids (PC16_1, PC17_1, PC24_1, 36)
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Product (article) characteristics

Concentration of substance in product:

Covers concentrations up to 20 %

Amount used, frequency and duration of use/exposure

Amounts used:

Amount per use 50 g

Duration:

Exposure duration 0.2 h/event

Frequency:

Covers exposure up to 4 times per year

Other conditions affecting consumers exposure

Room size: Covers use in room size of 20 m³

Ventilation rate: Covers use under typical household ventilation.

Additional conditions human health

Covers skin contact area up to 468 cm²

8.2. CS14: Consumer Contributing Scenario: Consumer (PC27)

Product Categories	Plant protection products (PC27)
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Product (article) characteristics

Concentration of substance in product:

Covers concentrations up to 50 %

Amount used, frequency and duration of use/exposure**Amounts used:**

Amount per use 50 g

Duration:

Exposure duration 0.3 h/event

Frequency:

Covers exposure up to 29 times per year

Other conditions affecting consumers exposure**Room size:** Covers use in room size of 20 m³**Ventilation rate:** Covers use under typical household ventilation.**Additional conditions human health**Covers skin contact area up to 857 cm²**8.2. CS15: Consumer Contributing Scenario: Consumer (PC31)****Product Categories**

Polishes and wax blends (PC31)

Product (Sub-)Categories

Polishes, wax/cream (floor, furniture, shoes) (PC23_1, PC31_1)

Product (article) characteristics**Concentration of substance in product:**

Covers concentrations up to 50 %

Amount used, frequency and duration of use/exposure**Amounts used:**

Amount per use 50 g

Duration:

Exposure duration 1.2 h/event

Frequency:

Covers exposure up to 29 times per year

Other conditions affecting consumers exposure**Room size:** Covers use in room size of 20 m³**Ventilation rate:** Covers use under typical household ventilation.**Additional conditions human health**Covers skin contact area up to 430 cm²**8.2. CS16: Consumer Contributing Scenario: Consumer (PC31)****Product Categories**

Polishes and wax blends (PC31)

Product (Sub-)Categories

Polishes, spray (furniture, shoes) (PC23_2, PC31_2)

Product (article) characteristics**Concentration of substance in product:**

Covers concentrations up to 10 %

Amount used, frequency and duration of use/exposure**Amounts used:**

Amount per use 50 g

Duration:

Exposure duration 0.3 h/event

Frequency:

Covers exposure up to 8 times per year

Other conditions affecting consumers exposure

Room size: Covers use in room size of 20 m³

Ventilation rate: Covers use under typical household ventilation.

Additional conditions human health

Covers skin contact area up to 430 cm²

8.3 Exposure estimation and reference to its source

8.3. CS1: Environment Contributing Scenario: Covered by (ERC8a, ERC8d)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
wastewater treatment plant microbes	0.273 mg/L	N/A	0.000471
freshwater	0.0297 mg/L	N/A	0.0309
freshwater sediment	0.114 mg/kg bw/day	N/A	0.031
marine water	0.00304 mg/L	N/A	0.00385
marine sediment	0.0116 mg/kg bw/day	N/A	0.00383
soil	0.116 mg/kg bw/day	N/A	0.00676

8.2. CS2: Consumer Contributing Scenario: Consumer (PC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	111 mg/m ³	N/A	0.973
inhalative, local, short-term	111 mg/m ³	N/A	0.973
dermal, systemic, long-term	3.28 mg/kg bw/day	N/A	0.0159
combined routes, systemic, long-term	N/A	N/A	0.989

8.2. CS3: Consumer Contributing Scenario: Consumer (PC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.788 mg/m ³	N/A	0.00682
inhalative, local, short-term	47.3 mg/m ³	N/A	0.414
dermal, systemic, long-term	1.4 mg/kg bw/day	N/A	0.000112
combined routes, systemic, long-term	N/A	N/A	0.212

8.2. CS4: Consumer Contributing Scenario: Consumer (PC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
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inhalative, systemic, long-term	23.5 mg/m ³	N/A	0.206
inhalative, local, short-term	23.5 mg/m ³	N/A	0.206
dermal, systemic, long-term	1.4 mg/kg bw/day	N/A	0.00679
combined routes, systemic, long-term	N/A	N/A	0.212

8.2. CS5: Consumer Contributing Scenario: Consumer (PC3)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	38.7 mg/m ³	N/A	0.339
inhalative, local, short-term	38.7 mg/m ³	N/A	0.339
dermal, systemic, long-term	7.51 mg/kg bw/day	N/A	0.0364
combined routes, systemic, long-term	N/A	N/A	0.375

8.2. CS6: Consumer Contributing Scenario: Consumer (PC3)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	17.1 mg/m ³	N/A	0.15
inhalative, local, short-term	17.1 mg/m ³	N/A	0.15
dermal, systemic, long-term	0.469 mg/kg bw/day	N/A	0.00227
combined routes, systemic, long-term	N/A	N/A	0.152

8.2. CS7: Consumer Contributing Scenario: Consumer (PC8)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.672 mg/m ³	N/A	0.00589
inhalative, local, short-term	0.672 mg/m ³	N/A	0.00589
dermal, systemic, long-term	5.63 mg/kg bw/day	N/A	0.000273
combined routes, systemic, long-term	N/A	N/A	0.00616

8.2. CS8: Consumer Contributing Scenario: Consumer (PC8)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.543 mg/m ³	N/A	0.00476
inhalative, local, short-term	1.55 mg/m ³	N/A	0.0135

dermal, systemic, long-term	5.63 mg/kg bw/day	N/A	0.00956
combined routes, systemic, long-term	N/A	N/A	0.0231

8.2. CS9: Consumer Contributing Scenario: Consumer (PC8)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.885 mg/m ³	N/A	0.00776
inhalative, local, short-term	2.52 mg/m ³	N/A	0.0221
dermal, systemic, long-term	8.43 mg/kg bw/day	N/A	0.0143
combined routes, systemic, long-term	N/A	N/A	0.0364

8.2. CS10: Consumer Contributing Scenario: Consumer (PC18)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	86 mg/m ³	N/A	0.754
inhalative, local, short-term	86 mg/m ³	N/A	0.754
dermal, systemic, long-term	4.69 mg/kg bw/day	N/A	0.0227
combined routes, systemic, long-term	N/A	N/A	0.777

8.2. CS11: Consumer Contributing Scenario: Consumer (PC23)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	3.62 mg/m ³	N/A	0.0317
inhalative, local, short-term	45.3 mg/m ³	N/A	0.397
dermal, systemic, long-term	28.2 mg/kg bw/day	N/A	0.0109
combined routes, systemic, long-term	N/A	N/A	0.408

8.2. CS12: Consumer Contributing Scenario: Consumer (PC23)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.136 mg/m ³	N/A	0.00119
inhalative, local, short-term	6.24 mg/m ³	N/A	0.0547
dermal, systemic, long-term	1.23 mg/kg bw/day	N/A	6.5E-05
combined routes, systemic, long-term	N/A	N/A	0.0295

8.2. CS13: Consumer Contributing Scenario: Consumer (PC24)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.0368 mg/m ³	N/A	0.000322
inhalative, local, short-term	3.36 mg/m ³	N/A	0.0294
dermal, systemic, long-term	1.23 mg/kg bw/day	N/A	6.5E-05
combined routes, systemic, long-term	N/A	N/A	0.0295

8.2. CS14: Consumer Contributing Scenario: Consumer (PC27)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	15.7 mg/m ³	N/A	0.137
inhalative, local, short-term	15.7 mg/m ³	N/A	0.137
dermal, systemic, long-term	11.2 mg/kg bw/day	N/A	0.0543
combined routes, systemic, long-term	N/A	N/A	0.226
oral, systemic, long-term	131.2 mg/kg bw/day	N/A	0.0344

8.2. CS15: Consumer Contributing Scenario: Consumer (PC31)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	3.62 mg/m ³	N/A	0.0317
inhalative, local, short-term	45.3 mg/m ³	N/A	0.397
dermal, systemic, long-term	28.2 mg/kg bw/day	N/A	0.0109
combined routes, systemic, long-term	N/A	N/A	0.408

8.2. CS16: Consumer Contributing Scenario: Consumer (PC31)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.0684 mg/m ³	N/A	0.0006
inhalative, local, short-term	3.12 mg/m ³	N/A	0.0273
dermal, systemic, long-term	5.65 mg/kg bw/day	N/A	0.000597
combined routes, systemic, long-term	N/A	N/A	0.0279

8.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.