

Varnostni list

FASSA EPOXY 100 COMP.A

Varnostni list z dne 19/02/2025 revizija 2



ODDELEK 1: Identifikacija snovi/zmesi in družbe/podjetja

1.1 Identifikator izdelka

Identifikacija pripravka:

Komercialno ime: FASSA EPOXY 100 COMP.A

Komercialna koda: 1222

UFI: XXC3-F00F-G00Y-0R78

1.2 Pomembne identificirane uporabe snovi ali zmesi in odsvetovane uporabe

Priporočena uporaba: Epoksidna osnova za FRP sisteme

1.3 Podrobnosti o dobavitelju varnostnega lista

Dobavitelj FASSA Srl

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1.4 Telefonska številka za nujne primere

112 - Center za obveščanje (na voljo 24 ur)

ODDELEK 2: Določitev nevarnosti



2.1 Razvrstitev snovi ali zmesi

Uredba (ES) št. 1272/2008 (CLP)

Skin Corr. 1C Povzroča hude opekline kože in poškodbe oči.

Skin Sens. 1 Lahko povzroči alergijski odziv kože.

Repr. 1B Lahko škoduje plodnosti.

Aquatic Chronic 2 Strupeno za vodne organizme, z dolgotrajnimi učinki.

Nevarnosti fizikalno-kemijskih lastnosti za zdravje ljudi in za okolje:

Ni drugih tveganj

2.2 Elementi etikete

Uredba (ES) št. 1272/2008 (CLP)

Piktogrami za nevarnost in Opozorilna beseda



Nevarno

Stavki o nevarnosti

H314 Povzroča hude opekline kože in poškodbe oči.

H317 Lahko povzroči alergijski odziv kože.

H360F Lahko škoduje plodnosti.

H411 Strupeno za vodne organizme, z dolgotrajnimi učinki.

Previdnostni stavki

P201 Pred uporabo pridobiti posebna navodila.

P260 Ne vdihavati dima/plina/meglvice/hlapov/razpršila

P280 Nadenite si zaščitne rokavice/obleke ter zaščitite oči/obraz.

P303+P361+P353 PRI STIKU S KOŽO (ali lasmi): Takoj sleči vsa kontaminirana oblačila. Kožo izprati z vodo ali prho.

P305+P351+P338 PRI STIKU Z OČMI: Previdno izpirati z vodo nekaj minut. Odstranite kontaktne leče, če jih imate in če to lahko storite brez težav. Nadaljujte z izpiranjem.

P310 Takoj pokličite CENTER ZA ZASTRUPITVE/ zdravnika.

Posebne oznake:

EUH205 Vsebuje epoksidne sestavine. Lahko povzroči alergijski odziv.

Vsebuje:

bis-[4-(2,3-epoksi)propoksi]fenil]propan
1,3-propandiol, 2-etil-2-(hidroksimetil)-, polimer z (klorometil)oksiran

1,6-heksandiol diglicidil eter
reakcijska zmes 2,2'-[metilenbis(4,1-fenilenoksimetilen)]dioksiran in 2-(2-[4-(oksiran-2-ilmetoksi)]fenoksi}oksiran in 2,2'-[metilenbis(2,1-fenilenoksimetilen)]dioksiran

Posebne določbe v skladu s Prilogo XVII uredbe REACH in poznejše spremembe:

Nobeden

2.3 Druge nevarnosti

Ni snovi PBT, vPvB ali endokrinih motilcev v koncentraciji > = 0,1%.

Ni drugih tveganj

ODDELEK 3: Sestava/podatki o sestavinah

3.1 Snovi

ni znano

3.2 Zmesi

Identifikacija pripravka: FASSA EPOXY 100 COMP.A

Nevarne sestavine, skladno z Uredbo CLP in njeno razvrstitvijo:

Količina	Ime	Ident. št.	Razvrstitev	Registracijska številka:
≥50 - <80 %	bis-[4-(2,3-epoksi)propoksi]fenil]propan	CAS:1675-54-3 EC:216-823-5 Index:603-073-00-2	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411 Posebne mejne koncentracije: 5% ≤ C < 100%: Skin Irrit. 2 H315 5% ≤ C < 100%: Eye Irrit. 2 H319	01-2119456619-26-xxxx
≥10 - <20 %	1,6-heksandiol diglicidil eter	CAS:933999-84-9 EC:618-939-5	Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; Aquatic Chronic 3, H412	01-2119463471-41-xxxx
≥10 - <20 %	reakcijska zmes 2,2'-[metilenbis(4,1-fenilenoksimetilen)]dioksiran in 2-(2-[4-(oksiran-2-ilmetoksi)]fenoksi}oksiran in 2,2'-[metilenbis(2,1-fenilenoksimetilen)]dioksiran	EC:701-263-0	Skin Irrit. 2, H315; Skin Sens. 1A, H317; Aquatic Chronic 2, H411	01-2119454392-40-xxxx
≥5 - <10 %	1,3-propandiol, 2-etil-2-(hidroksimetil)-, polimer z (klorometil)oksiran	CAS:30499-70-8 EC:608-489-8	Skin Corr. 1C, H314; Eye Dam. 1, H318; Skin Sens. 1B, H317; Repr. 1B, H360F; Aquatic Chronic 2, H411	
≥0.005 - <0.025 %	2-metoksi-1-metiletil acetat	CAS:108-65-6 EC:203-603-9 Index:607-195-00-7	Flam. Liq. 3, H226; STOT SE 3, H336	01-2119475791-29-xxxx

ODDELEK 4: Ukrepi za prvo pomoč

4.1 Opis ukrepov za prvo pomoč

V primeru stika s kožo:

Kontaminirana oblačila takoj slecite in jih na varen način odstranite.

V primeru stika s proizvodom in tudi v primeru suma morebitnega stika, dele telesa takoj umijte z veliko količino tekoče vode in milom.

TAKOJ SE POSVETUJTE Z ZDRAVNIKOM.

V primeru stika z očmi:

V primeru stika z očmi dovolj dolgo in z odprtimi očesnimi vekami izpirajte z obilo vode, nato poiščite pomoč zdravnika oftalmologa. Poškodovano oko zaščitite.

V primeru zaužitja:

Po zaužitju ne izzivati bruhanja, takoj poiskati zdravniško pomoč in pokazati varnostni list in nalepko.

V primeru vdihavanja:

Prizadeto osebo umaknite na svež zrak in pustite počivati na toplem.

4.2 Najpomembnejši simptomi in učinki, akutni in zapozneli

Simptomi in učinki so taki, kot je pričakovano glede na nevarnosti, kar je prikazano v 2. razdelku.

4.3 Navedba kakršne koli takojšnje medicinske oskrbe in posebnega zdravljenja

V primeru nesreče ali slabega počutja takoj poiščite zdravniško pomoč (če je mogoče, pokažite navodila za uporabo ali varnostni list).

ODDELEK 5: Protipožarni ukrepi

5.1 Sredstva za gašenje

Ustrezna sredstva za gašenje:

CO₂, gasilni aparat na prah, pena, pršenje z vodo.

Sredstva za gašenje, ki se jih iz varnostnih razlogov ne sme uporabljati:

Vodni curki

5.2 Posebne nevarnosti v zvezi s snovjo ali zmesjo

Pri gorenju nastajajo težki dimni plini.

Ne vdihavati pline, ki nastanejo pri eksploziji in/ali gorenju (ogljikov monoksid in ogljikov dioksid, dušikovi oksidi).

5.3 Nasvet za gasilce

Uporabiti ustrezne dihalne naprave.

Ločeno zberite kontaminirano vodo, uporabljeno za gašenje požara. Ne je izpustiti v kanalizacijo.

Če je to varno izvedljivo, nepoškodovane vsebnike umaknite iz neposredno ogroženega območja.

ODDELEK 6: Ukrepi o nenamernih izpustih

6.1 Osebni varnostni ukrepi, zaščitna oprema in postopki v sili

Za neizučeno osebje:

Nosite osebno varovalno opremo.

Osebe umaknite na varno mesto.

Glejte v točki 7 in 8 navedene zaščitne ukrepe.

Za reševalce:

Nosite osebno varovalno opremo.

6.2 Okoljevarstveni ukrepi

Preprečite vstop v tla/podtalnico. Preprečite razlitje v površinske vode ali v kanalizacijo.

V primeru puščanja plina ali razlitja v vodne tokove, tla ali kanalizacijo obvestite pristojne organe.

6.3 Metode in materiali za zadrževanje in čiščenje

Za zbiranje primeren material: inerten vpojni materiali (npr. pesek, vermikulit).

Po pobiranju z vodo izperite območje in prizadete materiale.

Kontaminirano vodo za pranje shranite in odstranite.

6.4 Sklizevanje na druge oddelke

Glejte tudi naslova 8 in 13

ODDELEK 7: Ravnanje in skladiščenje

7.1 Varnostni ukrepi za varno ravnanje

Preprečite stik s kožo in očmi, vdihavanje hlapov in megle.

Prazne vsebnike ne uporabite dokler niso očiščeni.

Pred postopki prenosa se prepričajte, da v vsebnikih ni ostankov nezdružljivih materialov.

Nasveti o splošni higieni dela:

Kontaminirana oblačila se mora pred vstopom v jedilnico zamenjati.

Med delom ne jejte in ne pijte.

Glejte tudi naslov 8 o priporočeni varovalni oprepi.

7.2 Pogoji za varno skladiščenje, vključno z nezdružljivostjo

Posode hranite tesno zaprte na hladnem in dobro prezračevanem mestu proč od virov toplote.

Hranite stran od hrane, pijač in krme.

Inkompaktibilne snovi:

Glejte točko 10.5

Navodila za prostore:

Primerno zračeni prostori.

7.3 Posebne končne uporabe

Priporočila

Glejte točko 1.2

Specifične rešitve za industrijski sektor

Nobena posebna uporaba

ODDELEK 8: Nadzor izpostavljenosti/osebna zaščita

8.1 Parametri nadzora

Seznam sestavin z OEL vrednostmi

2-metoksi-1-metiletil acetat

CAS: 108-65-6	Tip OPZ	ACGIH	Latvija	Dolgotrajna 275 mg/m ³ - 50 ppm; Kratkotrajna 550 mg/m ³
	Tip OPZ	ACGIH	Švedska	Dolgotrajna 275 mg/m ³ - 50 ppm; Kratkotrajna 550 mg/m ³ - 100 ppm
	Tip OPZ	EU		Dolgotrajna 275 mg/m ³ - 50 ppm; Kratkotrajna 550 mg/m ³ - 100 ppm Opombe: Skin
	Tip OPZ	MAK	Avstrija	Dolgotrajna 275 mg/m ³ - 50 ppm; Kratkotrajna 550 mg/m ³ - 100 ppm
	Tip OPZ	MAK	Nemčija	Dolgotrajna 270 mg/m ³ - 50 ppm; Kratkotrajna 270 mg/m ³ - 50 ppm
	Tip OPZ	VLEP	Belgija	Dolgotrajna 275 mg/m ³ - 50 ppm; Kratkotrajna 550 mg/m ³ - 100 ppm Opombe: Additional indication "D" means that the absorption of the agent through the skin, mucous membranes or eyes is an important part of the total exposure. It can be the result of both direct contact and its presence in the air.
	Tip OPZ	VLEP	Francija	Dolgotrajna 275 mg/m ³ - 50 ppm; Kratkotrajna 550 mg/m ³ - 100 ppm
	Tip OPZ	VLEP	Italija	Dolgotrajna 275 mg/m ³ - 50 ppm; Kratkotrajna 550 mg/m ³ - 100 ppm Opombe: Skin
	Tip OPZ	VLEP	Romunija	Dolgotrajna 275 mg/m ³ - 50 ppm; Kratkotrajna 550 mg/m ³ - 100 ppm Opombe: Skin
	Tip OPZ	TLV	Bolgarija	Dolgotrajna 275 mg/m ³ - 50 ppm; Kratkotrajna 550 mg/m ³ - 100 ppm Opombe: Skin
	Tip OPZ	TLV	Češka	Dolgotrajna 270 mg/m ³ - 49.14 ppm; Kratkotrajna 550 mg/m ³ - 10.01 ppm Opombe: Skin
	Tip OPZ	VLA	Španija	Dolgotrajna 275 mg/m ³ - 50 ppm; Kratkotrajna 550 mg/m ³ - 100 ppm
	Tip OPZ	ÁK	Madžarska	Dolgotrajna 275 mg/m ³ ; Kratkotrajna 550 mg/m ³
	Tip OPZ	MAC	Nizozemska	Dolgotrajna 550 mg/m ³
	Tip OPZ	VLE	Portugalska	Dolgotrajna 275 mg/m ³ - 50 ppm; Kratkotrajna 550 mg/m ³ - 100 ppm Opombe: Skin
	Tip OPZ	SUVA	Švicar	Dolgotrajna 275 mg/m ³ - 50 ppm; Kratkotrajna 550 mg/m ³ - 100 ppm
	Tip OPZ	WEL	U.K.	Dolgotrajna 274 mg/m ³ - 50 ppm; Kratkotrajna 548 mg/m ³ - 100 ppm
	Tip OPZ	GVI	Hrvaška	Dolgotrajna 275 mg/m ³ - 50 ppm; Kratkotrajna 550 mg/m ³ - 100 ppm Opombe: Skin
	Tip OPZ	AGW	Nemčija	Dolgotrajna 270 mg/m ³ - 50 ppm; Kratkotrajna 270 mg/m ³ - 50 ppm
	Tip OPZ	NDS	Poljska	Dolgotrajna 260 mg/m ³ ; Kratkotrajna 520 mg/m ³
	Tip OPZ	MV	Slovenija	Dolgotrajna 275 mg/m ³ - 50 ppm; Kratkotrajna 550 mg/m ³ - 100 ppm Opombe: Skin
	Tip OPZ	IPRV	Litva	Dolgotrajna 250 mg/m ³ - 50 ppm; Kratkotrajna 400 mg/m ³ - 75 ppm Opombe: Skin

Mejna vrednost izpostavljenosti po PNEC

bis-[4-(2,3-epoksipropoksi)fenil]propan

CAS: 1675-54-3 Način izpostavitve: Sladka voda; PNEC Omejite: 0.006 mg/l

Način izpostavitve: Morska voda; PNEC Omejite: 0.001 mg/l

Način izpostavitve: Sladkovodni sedimenti; PNEC Omejite: 0.341 mg/kg

Način izpostavitve: Morski sedimenti; PNEC Omejite: 0.034 mg/kg

Način izpostavitve: Tla (kmetijska); PNEC Omejite: 0.065 mg/kg

Način izpostavitve: Mikroorganizmi v čistilnih napravah (STP); PNEC Omejite: 10 mg/l

1,6-heksandiol diglicidil eter

CAS: 933999-84-9 Način izpostavitve: Sladka voda; PNEC Omejite: 0.0115 mg/l

Način izpostavitve: Morska voda; PNEC Omejite: 0.00115 mg/l
Način izpostavitve: Sladkovodni sedimenti; PNEC Omejite: 0.283 mg/kg
Način izpostavitve: Morski sedimenti; PNEC Omejite: 0.0283 mg/kg
Način izpostavitve: Mikroorganizmi v čistilnih napravah (STP); PNEC Omejite: 1 mg/l
Način izpostavitve: Tla (kmetijska); PNEC Omejite: 0.223 mg/kg

reakcijska zmes 2,2'-[metilenbis(4,1-fenilenoksimetilen)]dioksiran in 2-({2-[4-(oksiran-2-ilmetoksi)]fenoksi})oksiran in 2,2'-[metilenbis(2,1-fenilenoksimetilen)]dioksiran

Način izpostavitve: Sladka voda; PNEC Omejite: 0.003 mg/l
Način izpostavitve: Morska voda; PNEC Omejite: 0.0003 mg/l
Način izpostavitve: Mikroorganizmi v čistilnih napravah (STP); PNEC Omejite: 10 mg/l
Način izpostavitve: Morski sedimenti; PNEC Omejite: 0.0294 mg/kg
Način izpostavitve: Sladkovodni sedimenti; PNEC Omejite: 0.294 mg/kg
Način izpostavitve: Tla (kmetijska); PNEC Omejite: 0.237 mg/kg

2-metoksi-1-metiletil acetat

CAS: 108-65-6 Način izpostavitve: Sladka voda; PNEC Omejite: 0.635 mg/l
Način izpostavitve: Morska voda; PNEC Omejite: 0.064 mg/l
Način izpostavitve: Mikroorganizmi v čistilnih napravah (STP); PNEC Omejite: 100 mg/l
Način izpostavitve: Sladkovodni sedimenti; PNEC Omejite: 3.29 mg/kg
Način izpostavitve: Morski sedimenti; PNEC Omejite: 0.329 mg/kg
Način izpostavitve: Tla (kmetijska); PNEC Omejite: 0.29 mg/kg

Izpeljane vrednosti brez učinka. (DNEL)

bis-[4-(2,3-epoksi)propoksi]fenil]propan

CAS: 1675-54-3 Način izpostavitve: Dermalno, človek; Pogostost izpostavitve: Dolgotrajna, sistemski učinek
Strokovni delavec: 0.75 mg/kg; Uporabnik: 0.089 mg/kg

Način izpostavitve: Z vdihavanjem, človek; Pogostost izpostavitve: Dolgotrajna, sistemski učinek
Strokovni delavec: 4.93 mg/m³; Uporabnik: 0.87 mg/m³

Način izpostavitve: Oralno, človek; Pogostost izpostavitve: Kratkotrajna, sistemski učinek
Uporabnik: 0.5 mg/kg

1,6-heksandiol diglicidil eter

CAS: 933999-84-9 Način izpostavitve: Z vdihavanjem, človek; Pogostost izpostavitve: Dolgotrajna, sistemski učinek
Strokovni delavec: 4.9 mg/m³; Uporabnik: 2.9 mg/m³

Način izpostavitve: Z vdihavanjem, človek; Pogostost izpostavitve: Kratkotrajna, sistemski učinek
Strokovni delavec: 4.9 mg/m³; Uporabnik: 2.9 mg/m³

Način izpostavitve: Z vdihavanjem, človek; Pogostost izpostavitve: Dolgotrajna, lokalni učinek
Strokovni delavec: 0.44 mg/m³; Uporabnik: 0.27 mg/m³

Način izpostavitve: Dermalno, človek; Pogostost izpostavitve: Dolgotrajna, sistemski učinek
Strokovni delavec: 2.8 mg/kg; Uporabnik: 1.7 mg/kg

Način izpostavitve: Dermalno, človek; Pogostost izpostavitve: Dolgotrajna, lokalni učinek
Strokovni delavec: 0.0226 mg/cm²; Uporabnik: 0.0136 mg/cm²

Način izpostavitve: Dermalno, človek; Pogostost izpostavitve: Kratkotrajna, lokalni učinek
Strokovni delavec: 0.0136 mg/kg; Uporabnik: 0.0136 mg/kg

Način izpostavitve: Dermalno, človek; Pogostost izpostavitve: Kratkotrajna, sistemski učinek
Uporabnik: 1.7 mg/kg

Način izpostavitve: Oralno, človek; Pogostost izpostavitve: Kratkotrajna, sistemski učinek
Strokovni delavec: 0.83 mg/kg; Uporabnik: 0.83 mg/kg

reakcijska zmes 2,2'-[metilenbis(4,1-fenilenoksimetilen)]dioksiran in 2-({2-[4-(oksiran-2-ilmetoksi)]fenoksi})oksiran in 2,2'-[metilenbis(2,1-fenilenoksimetilen)]dioksiran

Način izpostavitve: Dermalno, človek; Pogostost izpostavitve: Dolgotrajna, sistemski učinek
Strokovni delavec: 104.15 mg/kg; Uporabnik: 62.5 mg/kg

Način izpostavitve: Dermalno, človek; Pogostost izpostavitve: Kratkotrajna, lokalni učinek
Strokovni delavec: 0.0083 mg/cm²

Način izpostavitve: Z vdihavanjem, človek; Pogostost izpostavitve: Dolgotrajna, sistemski učinek
Strokovni delavec: 29.39 mg/m³; Uporabnik: 8.7 mg/m³

Način izpostavitve: Oralno, človek; Pogostost izpostavitve: Dolgotrajna, sistemski učinek
Uporabnik: 6.25 mg/kg

2-metoksi-1-metiletil acetat

CAS: 108-65-6 Način izpostavitve: Dermalno, človek; Pogostost izpostavitve: Dolgotrajna, sistemski učinek
Strokovni delavec: 796 mg/kg; Uporabnik: 320 mg/kg

Način izpostavitve: Oralno, človek; Pogostost izpostavitve: Dolgotrajna, sistemski učinek
Uporabnik: 36 mg/kg

Način izpostavitve: Oralno, človek; Pogostost izpostavitve: Kratkotrajna, sistemski učinek
Uporabnik: 500 mg/kg

Način izpostavitve: Z vdihavanjem, človek; Pogostost izpostavitve: Dolgotrajna, sistemski učinek
Strokovni delavec: 275 mg/m³; Uporabnik: 33 mg/m³

Način izpostavitve: Z vdihavanjem, človek; Pogostost izpostavitve: Kratkotrajna, lokalni učinek
Strokovni delavec: 550 mg/m³

Način izpostavitve: Z vdihavanjem, človek; Pogostost izpostavitve: Dolgotrajna, lokalni učinek
Uporabnik: 33 mg/m³

8.2 Nadzor izpostavljenosti

Poskrbite za ustrezno prezračevanje. Kadar je to izvedljivo, je to mogoče doseči z uporabo nadomestnega prezračevanja in dobrim splošnim vsesavanjem.

Zaščita oči:

Očala s stranskimi varovali (EN 166).

Zaščita kože:

Uporablajte oblačila, primerna za popolno zaščito kože glede na dejavnost in izpostavljenost (EN 14605/EN 13982), npr. delovni kombinezon, predpasnik, zaščitna obutev, primerna oblačila.

Zaščita rok:

Ni materiala ali kombinacije materialov za rokavice, ki bi lahko zagotovili neomejeno odpornost na katero koli kombinacijo kemikalij ali proizvodov.

Za daljše ali večkratno rokovanje uporabite rokavice, odporne na kemikalije.

Ustrezne rokavice tipa (EN 374/EN 16523); FKM (Fluórkaučuk): debelina ≥ 0.4 mm; permeacijski čas ≥ 480 min. NBR (Nitrilkaučuk): debelina ≥ 0.4 mm; permeacijski čas ≥ 480 min

Izbira primernih rokavic ni odvisna samo od materiala, temveč tudi od drugih kakovostnih lastnosti, ki se razlikujejo od enega do drugega proizvajalca, in od načinov ter časov uporabe mešanice.

Zaščita dihalnih poti:

Če so delavci izpostavljeni koncentracijam nad mejnimi vrednostmi izpostavljenosti, morajo uporabljati primerne, certificirane dihalne aparate.

Kombinirana filtrirna naprava (EN 14387): maska s filtrom A-P2.

Nadzor izpostavljenosti okolja:

Glejte točko 6.2

Higienski in tehnični ukrepi

Glejte poglavje 7.

ODDELEK 9: Fizikalne in kemijske lastnosti

9.1 Podatki o osnovnih fizikalnih in kemijskih lastnostih

Izgled: Tekoče

Barva: brezbarven

Vonj: značilnost

Tališče/ledišče: N.D.

Vrelišče ali začetno vrelišče in območje vrelišča: N.D.

Vnetljivost: ni znano

Spodnja in zgornja meja eksplozivnosti: N.D.

Plamenišče: ni znano

Temperatura samovžiga: N.D.

Temperatura razgradnje: N.D.

pH: ni znano

Kinematična viskoznost: ni znano

Gostota in/ali relativna gostota: 1.12 kg/l (Interna metoda)

Relativna parna gostota: N.D.

Parni tlak: N.D.

Topnost v vodi: ni znano

Topnost v olju: Topno

Porazdelitveni koeficient n-oktanol/voda (logaritemska vrednost): ni znano

Lastnosti delcev:

Velikost delcev: ni znano

9.2 Drugi podatki

Prevodnost: N.D.

Eksplozivne lastnosti: ni znano (Notranja evalvacija)

Oksidativne lastnosti: ni znano (Notranja evalvacija)

Hitrost izparevanja: ni znano

ODDELEK 10: Obstočnost in reaktivnost**10.1 Reaktivnost**

Stabilna v normalnih pogojih

10.2 Kemijska stabilnost

Stabilna v normalnih pogojih

10.3 Možnost poteka nevarnih reakcij

V stiku z močnimi oksidatorji se lahko vname.

Zaradi toplote ali v primeru požara se lahko sprostijo ogljikovi oksidi in hlapi, ki lahko škodujejo zdravju.

10.4 Pogoji, ki se jim je treba izogniti

Izogibajte se bližine toplotnih virov.

10.5 Nezdružljivi materiali

Močni oksidanti, močni reduktorji, alifatski in aromatski amini.

Glejte točko 10.3

10.6 Nevarni produkti razgradnje

V primeru pravilnega skladiščenja in ravnanja ne pride do razvoja nevarnih produktov razgradnje.

Glejte točko 5.2

ODDELEK 11: Toksikološki podatki**11.1 Podatki o razredih nevarnosti, kakor so opredeljeni v Uredbi (ES) št. 1272/2008**

Epoksidne smole, prisotne v tem izdelku so samo delno dražilne. Kljub temu vse epoksidne smole lahko povzročajo senzibilizacijo kože, ki je različna glede na osebo.

Pri nekaterih osebah se alergični dermatitis ne pokaže takoj in se pojavi šele po večih dneh ali tednih po pogostih ali daljših stikih.

Zaradi tega, čeprav so smole le lažje dražilne, se je treba skrbno izogibati stiku s kožo. Pri že razviti sensibilizaciji tudi izpostavljenost v manjših količinah lahko povzročajo lokalni edem ali eritem.

Toksikološki podatki izdelka:

a) akutna strupenost	Ni klasificirano Na podlagi razpoložljivih podatkov merila za razvrstitev niso izpolnjena.
b) jedkost za kožo/draženje kože	Proizvod je razvrščen: Skin Corr. 1C(H314)
c) resne okvare oči/draženje	Ni klasificirano Na podlagi razpoložljivih podatkov merila za razvrstitev niso izpolnjena.
d) preobčutljivost pri vdihavanju in preobčutljivost kože	Proizvod je razvrščen: Skin Sens. 1(H317)
e) mutagenost za zarodne celice	Ni klasificirano Na podlagi razpoložljivih podatkov merila za razvrstitev niso izpolnjena.
f) rakotvornost	Ni klasificirano Na podlagi razpoložljivih podatkov merila za razvrstitev niso izpolnjena.
g) strupenost za razmnoževanje	Proizvod je razvrščen: Repr. 1B(H360)
h) STOT - enkratna izpostavljenost	Ni klasificirano Na podlagi razpoložljivih podatkov merila za razvrstitev niso izpolnjena.
i) STOT - ponavljajoča se izpostavljenost	Ni klasificirano Na podlagi razpoložljivih podatkov merila za razvrstitev niso izpolnjena.
j) nevarnost pri vdihavanju	Ni klasificirano Na podlagi razpoložljivih podatkov merila za razvrstitev niso izpolnjena.

Toksikološki podatki glavnih snovi, ki jih najdemo v izdelku:

bis-[4-(2,3-epoksipropoksi)fenil]propan

CAS: 1675-54-3 a) akutna strupenost LD50 Oralno Podgana > 2000 mg/kg
LD50 Koža Podgana > 2000 mg/kg

reakcijska zmes 2,2'-[metilenbis(4,1-fenilenoksimetilen)]dioksiran in 2-({2-[4-(oksiran-2-ilmetoksi)]fenoksi})oksiran in 2,2'-[metilenbis(2,1-fenilenoksimetilen)]dioksiran

a) akutna strupenost LD50 Koža Podgana > 2000 mg/kg
LD50 Oralno Podgana > 5000 mg/kg

1,3-propandiol, 2-etil-2-(hidroksimetil)-, polimer z (klorometil)oksiran

CAS: 30499-70-8 a) akutna strupenost LD50 Oralno Podgana > 2000 mg/kg
LD50 Koža Podgana > 3170 mg/kg

2-metoksi-1-metiletil acetat

CAS: 108-65-6 a) akutna strupenost LD50 Oralno Podgana > 5000 mg/kg
LD50 Koža Zajec > 5000 mg/kg
LC0 Vdihavanje hlapov Podgana > 4345 ppm 6h

11.2 Podatki o drugih nevarnostih

Lastnosti endokrinih motilcev:

Ni endokrinih motilcev v koncentraciji > = 0,1%.

ODDELEK 12: Ekološki podatki

Uporabljajte v skladu z dobrimi delovnimi navadami, izogibajte se odlaganju izdelka v okolju.

12.1 Strupenost

Ekotoksikološki podatki:

Strupeno za vodne organizme, z dolgotrajnimi učinki.

Ekotoksikoloških lastnosti izdelka

Proizvod je razvrščen: Aquatic Chronic 2(H411)

Seznam sestavin z ekotoksikološkimi lastnostmi

bis-[4-(2,3-epoksipropoksi)fenil]propan

CAS: 1675-54-3 a) akutna strupenost za vodno okolje: EC50 Vodna bolha 1.8 mg/l 48h
a) akutna strupenost za vodno okolje: LC50 Riba 2 mg/l 96h
a) akutna strupenost za vodno okolje: EC50 Alge 11 mg/l 72h
b) kronična strupenost za vodno okolje: NOEC Vodna bolha 0.3 mg/l 21d

reakcijska zmes 2,2'-[metilenbis(4,1-fenilenoksimetilen)]dioksiran in 2-(2-[4-(oksiran-2-ilmetoksi)]fenoksi)oksiran in 2,2'-[metilenbis(2,1-fenilenoksimetilen)]dioksiran

a) akutna strupenost za vodno okolje: LC50 Riba 2.54 mg/l 96h
a) akutna strupenost za vodno okolje: EC50 Alge 1.8 mg/l 72h
a) akutna strupenost za vodno okolje: EC50 Vodna bolha 2.55 mg/l 48h
b) kronična strupenost za vodno okolje: NOEC Vodna bolha 0.3 mg/l - 21d

1,3-propandiol, 2-etil-2-(hidroksimetil)-, polimer z (klorometil)oksiran

CAS: 30499-70-8 a) akutna strupenost za vodno okolje: LC50 Riba 75 mg/l 96h
a) akutna strupenost za vodno okolje: EC50 Vodna bolha 3.7 mg/l 48h
a) akutna strupenost za vodno okolje: EC50 Alge 9 mg/l 72h

2-metoksi-1-metiletil acetat

CAS: 108-65-6 a) akutna strupenost za vodno okolje: LC50 Riba 134 mg/l 96h
a) akutna strupenost za vodno okolje: EC50 Vodna bolha 408 mg/l 48h
a) akutna strupenost za vodno okolje: EC50 Alge > 1000 mg/l 96h
b) kronična strupenost za vodno okolje: NOEC Riba 47.5 mg/l - 14 d

12.2 Obstočnost in razgradljivost

bis-[4-(2,3-epoksipropoksi)fenil]propan

CAS: 1675-54-3 Ni hitro razgradljivo

2-metoksi-1-metiletil acetat

CAS: 108-65-6 Hitro razgradljivo

12.3 Zmožnost kopičenja v organizmih

ni znano

12.4 Mobilnost v tleh

ni znano

12.5 Rezultati ocene PBT in vPvB

Na podlagi razpoložljivih podatkov, preparat ne vsebuje snovi PBT/vPvB v procentu ≥

0.1%.

12.6 Lastnosti endokrinih motilcev

Ni endokrinih motilcev v koncentraciji $\geq 0,1\%$.

12.7 Drugi škodljivi učinki

ni znano

ODDELEK 13: Odstranjevanje

13.1 Metode ravnanja z odpadki

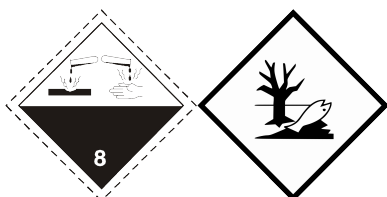
Če je mogoče, predelajte. Pošljite v usposobljena odlagališča ali v zažig pod kontroliranimi pogoji. Ravnajte se po lokalnih in državnih normah.

Ne dopustite, da pride v kanalizacijo ali vodne poti.

Odstraniti posode, ki jih kontaminira izdelka v skladu z lokalnimi ali nacionalnimi predpisi.

Ko izdelku poteče življenjska doba, ga odstranite v skladu z veljavno zakonodajo.

ODDELEK 14: Podatki o prevozu



14.1 Številka ZN in številka ID

1760

14.2 Pravilno odpremnno ime ZN

ADR-uradno ime blaga: JEDKA TEKOČINA, N.D.R. (1,3-propandiol, 2-etil-2-(hidroksimetil)-, polimer z (klorometil)oksiran - reakcijska zmes 2,2'-[metilenbis(4,1-fenilenoksimetilen)]dioksiran in 2-(2-[4-(oksiran-2-ilmetoksi)]fenoksi)oksiran in 2,2'-[metilenbis(2,1-fenilenoksimetilen)]dioksiran)

IATA-uradno ime blaga: CORROSIVE LIQUID, N.O.S. (1,3-propandiol, 2-etil-2-(hidroksimetil)-, polimer z (klorometil)oksiran - reakcijska zmes 2,2'-[metilenbis(4,1-fenilenoksimetilen)]dioksiran in 2-(2-[4-(oksiran-2-ilmetoksi)]fenoksi)oksiran in 2,2'-[metilenbis(2,1-fenilenoksimetilen)]dioksiran)

IMDG-uradno ime blaga: CORROSIVE LIQUID, N.O.S. (1,3-propandiol, 2-etil-2-(hidroksimetil)-, polimer z (klorometil)oksiran - reakcijska zmes 2,2'-[metilenbis(4,1-fenilenoksimetilen)]dioksiran in 2-(2-[4-(oksiran-2-ilmetoksi)]fenoksi)oksiran in 2,2'-[metilenbis(2,1-fenilenoksimetilen)]dioksiran)

14.3 Razredi nevarnosti prevoza

ADR-Razred: 8

IATA-razred: 8

IMDG-razred: 8

14.4 Skupina embalaže

ADR-embalažna skupina: III

IATA-embalažna skupina: III

IMDG-embalažna skupina: III

14.5 Nevarnosti za okolje

Onesnaževalec morja: Da

Onesnažuje okolje po: Da

IMDG-EMS: F-A, S-B

14.6 Posebni previdnostni ukrepi za uporabnika

Cestni in železniški transport (ADR-RID):

ADR-nalepka nevarnosti: 8

ADR - Identifikacijska številka nevarnosti: 80

ADR-posebni ukrepi: 274

ADR-Pravilnik o cestnem prevozu nevarnega blaga:

Zračni transport (IATA):

IATA-potniška letala: 852

IATA-tovorna letala: 856

IATA-nalepka: 8

IATA-dodatne nevarnosti: -

IATA-Erg: 8L

IATA-posebni ukrepi: A3 A803

Morski transport (IMDG):

IMDG-Zlaganje in ravnanje: Category A SW2

IMDG-Segregacija: -

IMDG-dodatne nevarnosti: -

IMDG-posebni ukrepi: 223 274

14.7 Pomorski prevoz v razsutem stanju v skladu z instrumenti IMO

ni znano

ODDELEK 15: Zakonsko predpisani podatki

15.1 Predpisi/zakonodaja o zdravju, varnosti in okolju, specifični za snov ali zmes

Dir. 98/24/ES (Varovanje delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu)

Dir. 2000/39/ES (mejne vrednosti za poklicno izpostavljenost)

Direktiva 2010/75/EU

Uredba (ES) št. 1907/2006 (REACH)

Uredba (ES) št. 1272/2008 (CLP)

Uredba (ES) št. 790/2009 (1. ATP CLP) in (EU) št. 758/2013

Uredba (EU) 2020/878

Uredba (EU) št. 286/2011 (2. ATP CLP)

Uredba (EU) št. 618/2012 (3. ATP CLP)

Uredba (EU) št. 487/2013 (4. ATP CLP)

Uredba (EU) št. 944/2013 (5. ATP CLP)

Uredba (EU) št. 605/2014 (6. ATP CLP)

Uredba (EU) 2015/1221 (7. ATP CLP)

Uredba (EU) 2016/918 (8. ATP CLP)

Uredba (EU) 2016/1179 (9. ATP CLP)

Uredba (EU) 2017/776 (10. ATP CLP)

Uredba (EU) 2018/669 (11. ATP CLP)

Uredba (EU) 2018/1480 (13. ATP CLP)

Uredba (EU) 2019/521 (12. ATP CLP)

Uredba (EU) 2020/217 (14. ATP CLP)

Uredba (EU) 2020/1182 (15. ATP CLP)

Uredba (EU) 2021/643 (16. ATP CLP)

Uredba (EU) 2021/849 (17. ATP CLP)

Uredba (EU) 2022/692 (18. ATP CLP)

Omejitve, povezane z izdelkom ali vsebovanimi snovmi, v skladu s Prilogo XVII Uredbe (ES) 1907/2006 (REACH) in poznejše spremembe:

Obmedzenia vo vzťahu s výrobkom: 3

Obmedzenia vo vzťahu s obsiahnutými látkami: 40, 75

Določbe v zvezi z direktivo EU 2012/18 (Seveso III)

Kategorija Seveso III v skladu s Prilogo 1, del 1	Mejna vrednost nižje stopnje (v tonah)	Mejna vrednost višje stopnje (v tonah)
izdelek spada v kategorijo: E2	200	500

Uredba (EU) št. 649/2012 (uredba PIC)

Snovi niso navedene

Nemški razred nevarnosti za vodo.

Razred 3: izjemno nevarna.

SVHC snovi:

Na podlagi razpoložljivih podatkov, preparat ne vsebuje snovi SVHC v procentu $\geq 0.1\%$.

15.2 Ocena kemijske varnosti

Ocena kemijske varnosti ni bila opravljena za mešanice

ODDELEK 16: Drugi podatki

Številka	Opis
H226	Vnetljiva tekočina in hlapi.
H314	Povzroča hude opekline kože in poškodbe oči.
H315	Povzroča draženje kože.
H317	Lahko povzroči alergijski odziv kože.
H318	Povzroča hude poškodbe oči.

H319	Povzroča hudo draženje oči.
H336	Lahko povzroči zaspanost ali omotico.
H360F	Lahko škoduje plodnosti.
H411	Strupeno za vodne organizme, z dolgotrajnimi učinki.
H412	Škodljivo za vodne organizme, z dolgotrajnimi učinki.

Številka	Razred in kategorija nevarnosti	Opis
2.6/3	Flam. Liq. 3	Vnetljiva tekočina, Kategorija 3
3.2/1C	Skin Corr. 1C	Jedkost za kožo, Kategorija 1C
3.2/2	Skin Irrit. 2	Draženje kože, Kategorija 2
3.3/1	Eye Dam. 1	Hude poškodbe oči, Kategorija 1
3.3/2	Eye Irrit. 2	Draženje oči, Kategorija 2
3.4.2/1	Skin Sens. 1	Preobčutljivost kože, Kategorija 1
3.4.2/1A	Skin Sens. 1A	Preobčutljivost kože, Kategorija 1A
3.4.2/1B	Skin Sens. 1B	Preobčutljivost kože, Kategorija 1B
3.7/1B	Repr. 1B	Strupenost za razmnoževanje, Kategorija 1B
3.8/3	STOT SE 3	Specifična strupenost za ciljne organe (STOT) – enkratna izpostavljenost STOT enkrat, Kategorija 3
4.1/C2	Aquatic Chronic 2	Kronično (dolgotrajno) nevarnost za vodno okolje, Kategorija 2
4.1/C3	Aquatic Chronic 3	Kronično (dolgotrajno) nevarnost za vodno okolje, Kategorija 3

Razvrstitev in postopek, uporabljen za izpeljavo razvrstitve za zmesi v skladu z Uredbo (ES) 1272/2008 [uredba CLP]:

Razvrstitev v skladu z Uredbo (ES) št. 1272/2008 Postopek razvrščanja

Skin Corr. 1C, H314	metoda izračuna
Skin Sens. 1, H317	metoda izračuna
Repr. 1B, H360F	metoda izračuna
Aquatic Chronic 2, H411	metoda izračuna

Ta dokument je pripravila pristojna oseba, ki je ustrezno usposobljena

Glavni bibliografski viri:

ECDIN – Informacijska mreža za okoljske podatke za kemikalije – Skupno raziskovalno središče, Komisija Evropskih skupnosti
SAX – NEVARNE LASTNOSTI INDUSTRIJSKIH MATERIALOV – 8. izdaja – Van Nostrand Reinold
Varnostni listi dobaviteljev surovin.

Predstavljene informacije se nanašajo na naše znanje v zgoraj navedenem datumu. Nanašajo se zgolj na omenjeni izdelek in ne predstavljajo garancije za posebno kakovost.

Uporabnik je dolžan preveriti pravilnost in popolnost teh informacij glede na svojo specifično uporabo.

Ta list razveljavlja in nadomešča vsako predhodno izdajo

Legenda okrajšav in kratic, uporabljenih v varnostnem listu:

ACGIH: Ameriška konferenca vladnih industrijskih higienikov
ADR: Evropski sporazum o mednarodnem prevozu nevarnih snovi v cestnem prometu.
ATE: Ocena akutne strupenosti
ATEmix: Ocena akutne strupenosti (Zmesi)
BEI: Biološki indeks izpostavljenosti
CAS: Chemical Abstracts Service (oddelek Ameriškega kemijskega društva).
CAV: Center za zastrupitve
CE: Evropska skupnost
CLP: Razvrščanje, etiketiranje, pakiranje.
CMR: Rakotvorno, mutageno in strupeno za razmnoževanje
COV: Hlapna organska spojina
CSA: Ocena kemijske varnosti
CSR: Poročilo o kemijski varnosti
DNEL: Izpeljane vrednosti brez učinka.
EC50: Srednja učinkovita koncentracija
ECHA: Evropska agencija za kemikalije
EINECS: Evropski seznam obstoječih snovi.
ES: Scenarij izpostavljenosti
GefStoffVO: Odlok o nevarnih snoveh, Nemčija.
GHS: Globalno poenoten sistem razvrščanja in označevanja nevarnih kemikalij.
IARC: Mednarodna agencija za raziskovanje raka
IATA: Mednarodno združenje za zračni transport.

IC50: Srednja inhibitorna koncentracija
IMDG: Mednarodni kodeks za prevoz nevarnega blaga po morju
LC50: Letalna koncentracija za 50 odstotkov testne populacije.
LD50: Letalna doza za 50 odstotkov testne populacije.
LDLo: Najnižja smrtna doza
N.A.: Se ne uporablja
N/A: Se ne uporablja
N/D: Ni opredeljeno/Ni razpoložljiv
N.D.: Ni razpoložljiv
NIOSH: Nacionalni inštitut za varnost in zdravje pri delu
NOAEL: Raven brez opaznih negativnih vplivov
OSHA: Upravljanje varnosti in zdravja pri delu
PBT: Obstojne, se kopičijo v organizmih in so strupene
PGK: Navodila za embalažo nevarnih snovi
PNEC: Predvidena koncentracija brez učinka.
PSG: Potniki
RID: Pravilnik o mednarodnem prevozu nevarnega blaga po železnici.
STEL: Meja za kratkotrajno izpostavljenost.
STOT: Specifično strupeno za ciljne organe.
TLV: Mejna vrednost izpostavljenosti.
TLV-TWA: Mejna vrednost izpostavljenosti v časovnem obdobju po 8 ur dnevno (ACGIH standard).
vPvB: Telo obstojno, se zelo lahko kopiči v organizmih.
WGK: Nemški razred nevarnosti za vodo.

Odstavki spremenjeni od prejšnje revizije:

- Varnostni list
- ODDELEK 1: Identifikacija snovi/zmesi in družbe/podjetja
- ODDELEK 2: Določitev nevarnosti
- ODDELEK 3: Sestava/podatki o sestavinah
- ODDELEK 7: Ravnanje in skladiščenje
- ODDELEK 8: Nadzor izpostavljenosti/osebna zaščita
- ODDELEK 9: Fizikalne in kemijske lastnosti
- ODDELEK 11: Toksikološki podatki
- ODDELEK 12: Ekološki podatki
- ODDELEK 14: Podatki o prevozu
- ODDELEK 15: Zakonsko predpisani podatki
- ODDELEK 16: Drugi podatki

bis-[4-(2,3-epoxipropoxy)phenyl]propane

Substance identification

Chemical Name: bis-[4-(2,3-epoxipropoxy)phenyl]propane

CAS number: 1675-54-3

Date - Version: 29/12/2021 - 1.3

INDUSTRIAL USE - PROFESSIONAL USES: PUBLIC SECTOR (ADMINISTRATION, EDUCATION, ENTERTAINMENT, SERVICES, CRAFTS) (SU22).

1. TITLE SECTION

Exposure scenario name: Industrial use.

Structured short title: Professional uses: public sector (administration, education, entertainment, service, crafts) (SU22).

Substance: 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

EC number: 216-823-5

Registration number: 01-2119456619-26

ENVIRONMENT

SC 1: Use of non-reactive processing aid at industrial site (no inclusion in article) ERC4

WORKER

SC 2: Use as laboratory reagents PROC15

SC 3: Treatment of articles by dipping and pouring PROC13

SC 4: Tableting, compression, extrusion, pelletising, granulation PROC14

SC 5: General greasing/lubrication in high energy conditions PROC18

SC 6 Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8a

2. CONDITIONS OF USE AFFECTING EXPOSURE

2.1. ENVIRONMENTAL EXPOSURE CONTROL: Use of non-reactive processing aid at industrial site (no inclusion in article) (ERC4)

Product features (article)

Physical form of the product: Liquid

Amount used (or contained in articles), frequency and duration of use/exposure

Daily amount per site: 0,6 ton/day

Annual amount per site: 20 ton/year

Conditions and measures related to sewage treatment plant

STP Type: Municipal wastewater treatment plant.

Learn more about STP: biological elimination.

STP sludge treatment: It may be landfilled when allowed by local regulations.

STP effluent: 2,000 m³/day

Other conditions affecting environmental exposure

Water flow on the receiving surface: 18,000 m³/day

Outdoor / Indoor Indoor use.

2.2. WORKERS EXPOSURE CONTROL: Use as laboratory reagents (PROC15)

Product features (article)

Covers the percentage of substance in the product up to 100%.

Physical form of the product: Liquid.

Temperature: < 40°C

Amount used (or contained in articles), frequency and duration of use/exposure

Duration: Covers daily exposures up to 8 hours.

Organizational and technical measures and conditions

Assumes a good basic standard of occupational hygiene is implemented.

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Dermal: minimum efficiency of 0%.

Inhalation: minimum yield of 30%.

Conditions and measures for personal protection, hygiene and health assessment

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

Use adequate eye protection.

Dermal: minimum efficiency of 95%.

Inhalation: minimum yield of 0%.

Other conditions affecting worker exposure

Outdoor / Indoor Inside.

Temperature: < 40°C

2.3. WORKERS EXPOSURE CONTROL: Treatment of articles by dipping and pouring (PROC13)

Product features (article)

Covers the percentage of substance in the product up to 25%.

Physical form of the product: Liquid.

Vapour pressure: 0,00741 Pa

Temperature: < 70°C

Amount used (or contained in articles), frequency and duration of use/exposure

Duration: Covers daily exposures up to 8 hours.

Organizational and technical measures and conditions

Assumes a good basic standard of occupational hygiene is implemented.

Provide a good standard of general ventilation (not less than 1 to 3 air changes per hour).

Dermal: minimum efficiency of 0%.

Inhalation: minimum yield of 0%.

Conditions and measures for personal protection, hygiene and health assessment

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

Use adequate eye protection.

Dermal: minimum efficiency of 95%.

Inhalation: minimum yield of 0%.

Wear suitable respirator.

Inhalation: minimum yield of 90%.

Other conditions affecting worker exposure

Outdoor / Indoor Inside.

Temperature: < 40°C

2.4. WORKERS EXPOSURE CONTROL: Tableting, compression, extrusion, pelletising, granulation (PROC14)

Product features (article)

Covers the percentage of substance in the product up to 100%.

Physical form of the product: Liquid.

Temperature: < 40°C

Amount used (or contained in articles), frequency and duration of use/exposure

Duration: Covers daily exposures up to 8 hours.

Organizational and technical measures and conditions

Assumes a good basic standard of occupational hygiene is implemented.

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Dermal: minimum efficiency of 0%.

Inhalation: minimum yield of 30%.

Conditions and measures for personal protection, hygiene and health assessment

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

Use adequate eye protection.

Dermal: minimum efficiency of 95%.

Inhalation: minimum yield of 0%.

Other conditions affecting worker exposure

Outdoor / Indoor Inside.

Temperature: < 40°C

2.5. WORKERS EXPOSURE CONTROL: General greasing/lubrication in high energy conditions (PROC18)

Product features (article)

Covers concentrations up to 20%.

Physical form of the product: Liquid.

Temperature: ≤ 800°C

Amount used (or contained in articles), frequency and duration of use/exposure

Duration: Covers daily exposures up to 8 hours.

Conditions and measures for personal protection, hygiene and health assessment

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

Use adequate eye protection.

Dermal: minimum efficiency of 95%.

Inhalation: minimum yield of 0%.

Wear suitable respirator.

Inhalation: minimum yield of 90%.

Other conditions affecting worker exposure

Outdoor / Indoor Outside.

Industrial or professional environments: Professional use.

Temperature: ≤ 800°C

2.6. WORKERS EXPOSURE CONTROL: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities (PROC8a)

Product features (article)

Covers the percentage of substance in the product up to 25%.

Physical form of the product: Liquid.

Amount used (or contained in articles), frequency and duration of use/exposure

Duration: Covers daily exposures up to 8 hours.

Conditions and measures for personal protection, hygiene and health assessment

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

Use adequate eye protection.

Dermal: minimum efficiency of 95%.

Inhalation: minimum yield of 0%.

Other conditions affecting worker exposure

Outdoor / Indoor Outside.

Industrial or professional environments: Professional use.

Temperature: A process temperature of up to < 40°C is assumed.

3. EXPOSURE ESTIMATION AND REFERENCE TO ITS SOURCE

3.1. Environmental release and exposure: Use of non-reactive processing aid at industrial site (no inclusion in article) (ERC4)

Route release	Release rate	Method for estimating for release
water	1.2E-10kg/day	FEICA SPERC 5.1 a.v1
air	3E-4kg/day	FEICA SPERC 5.1 a.v1
Soil	0%	FEICA SPERC 5.1 a.v1

Protection target	Estimated Exposure (EUSES v2.1)	RCR
Fresh water	3.76E-4mg/l	0.063
Fresh water sediments	0.018mg/l	0.053
Sea water	2.95E-5mg/kg dry weight	0.049
Marine sediment	1.42E-3mg/kg dry weight	0.042
Sewage treatment plant	5.68E-11mg/l	< 0.01
Farmland	2.88E-6mg/kg dry weight	< 0.01
Prey for predators (freshwater)	mg/kg wet weight (EUSES v2.1)	< 0.01
Prey for predators (marine water)	9.13E-4mg/kg wet weight	< 0.01
Main predator prey (marine water)	9.13E-4mg/kg wet weight	< 0.01
Prey for Predators (Terrestrial)	1.68E-4mg/kg wet weight	< 0.01
Man through the environment - inhalation	7.65E-9mg/m ³	< 0.01
Man through the environment - oral	3E-5mg/kgbw/day	< 0.01
Population exposed through the environment	-	< 0.01

3.2. Worker exposure: Use as laboratory reagents (PROC15)

Exposure routes	Health effect	Exposure indicator	Estimated exposure (ECETOC TRA worker v3)	RCR
inhalation	systemic	Long-term	0.993mg/m ³	0.201
inhalation	local	Long-term	0.993mg/m ³	-
inhalation	local	Short term	0.993mg/m ³	-
dermal	systemic	Long-term	0.172mg/kg bw/day	0.045
dermal	local	Short term	9.92E-3mg/cm ²	-
combined routes	-	-	-	0.247

3.3. Worker exposure: Treatment of articles by dipping and pouring (PROC13)

Exposure routes	Health effect	Exposure indicator	Estimated exposure (ECETOC TRA worker v3)	RCR
inhalation	systemic	Long-term	0.085mg/m ³	0.017
inhalation	local	Long-term	0.085mg/m ³	-
inhalation	local	Short term	0.085mg/m ³	-
dermal	systemic	Long-term	0.411mg/kgbw/day	0.548
dermal	local	Short term	0.06mg/cm ²	-
combined routes	-	-	-	0.566

3.4. Worker exposure: Tableting, compression, extrusion, pelletising, granulation (PROC14)

Exposure routes	Health effect	Exposure indicator	Estimated exposure (ECETOC TRA worker v3)	RCR
inhalation	systemic	Long-term	0.993mg/m ³	0.201
inhalation	local	Long-term	0.993mg/m ³	-
inhalation	local	Short term	0.993mg/m ³	-
dermal	systemic	Long-term	0.172mg/kg bw/day	0.229
dermal	local	Short term	0.0025mg/cm ²	-
combined routes	-	-	-	0.43

3.5. Worker exposure: General greasing/lubrication in high energy conditions (PROC18)

Exposure routes	Health effect	Exposure indicator	Estimated exposure (ECETOC TRA worker v3)	RCR
inhalation	systemic	Long-term	0.596mg/m ³	0.121
inhalation	local	Long-term	0.596mg/m ³	-
inhalation	local	Short term	0.596mg/m ³	-
dermal	systemic	Long-term	0.411mg/kgbw/day	0.548
dermal	local	Short term	0.03mg/cm ²	-
combined routes	-	-	-	0.669

3.6. Worker exposure: Transfer of a substance or a preparation (filling/emptying) at non-dedicated facilities (PROC8a)

Exposure routes	Health effect	Exposure indicator	Estimated exposure (ECETOC TRA worker v3)	RCR
inhalation	systemic	Long-term	0.596mg/m ³	0.121
inhalation	local	Long-term	0.596mg/m ³	-
inhalation	local	Short term	0.596mg/m ³	-
dermal	systemic	Long-term	0.411mg/kgbw/day	0.548
dermal	local	Short term	0.03mg/cm ²	-
combined routes	-	-	-	0.669

4. GUIDANCE FOR DOWNSTREAM USERS TO ASSESS WHETHER THEY COMPLY WITH THE LIMITS SET BY THE EXPOSURE SCENARIO

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

PROFESSIONAL USE - PROFESSIONAL USES: PUBLIC SECTOR (ADMINISTRATION, EDUCATION, ENTERTAINMENT, SERVICES, CRAFTS) (SU22).

1. TITLE SECTION

Exposure scenario name: Professional.

Structured short title: Professional uses: public sector (administration, education, entertainment, service, crafts) (SU22).

Substance: 2,2'-[[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

EC number: 216-823-5

Registration number: 01-2119456619-26

ENVIRONMENT

SC 1: Use at an industrial site leading to inclusion in article ERC5

WORKER

SC 2: Industrial spraying PROC7

SC 3 Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8a

SC 4: Transfer of substance or mixture (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC8b

SC 5: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC9

SC 6: Application with rollers or brushes PROC10

SC 7: Non-industrial spraying PROC11

2. CONDITIONS OF USE AFFECTING EXPOSURE

2.1. ENVIRONMENTAL EXPOSURE CONTROL: Use at an industrial site leading to inclusion in article (ERC5)

Product features (article)

Covers a percentage of substance in the product up to 100%.

Physical form of the product: Liquid

Amount used (or contained in articles), frequency and duration of use/exposure

Annual amount per site: 30,000 tons/year

Daily amount per site: 100 tons/day

Conditions and measures related to sewage treatment plant

STP Type: Municipal wastewater treatment plant.

Learn more about STP: biological elimination.

STP sludge treatment: It may be landfilled when allowed by local regulations.

STP effluent: 2,000 m³/day

Other conditions affecting environmental exposure

Water flow on the receiving surface: 18,000 m³/day

2.2. WORKERS EXPOSURE CONTROL: Industrial spraying (PROC7)

Product features (article)

Covers the percentage of substance in the product up to 25%.

Physical form of the product: Liquid.

Vapour pressure: 0,00741 Pa

Amount used (or contained in articles), frequency and duration of use/exposure

Duration: Covers daily exposures up to 8 hours.

Organizational and technical measures and conditions

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Conditions and measures for personal protection, hygiene and health assessment

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

Use adequate eye protection.

If skin contamination is expected to extend to other parts of the body, these parts should also be protected with impermeable clothing equivalent to that described for the hands.

Wear suitable respirator.

Dermal: minimum efficiency of 99%.

Inhalation: minimum yield of 90%.

Other conditions affecting worker exposure

Outdoor / Indoor Inside.

Industrial or professional environments Professional use.

Temperature: Process temperature up to 70°C is assumed.

2.3. WORKERS EXPOSURE CONTROL: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities (PROC8a)

Product features (article)

Covers the percentage of substance in the product up to 25%.

Physical form of the product: Liquid.

Vapour pressure: 0,00741 Pa

Temperature: 70°C

Amount used (or contained in articles), frequency and duration of use/exposure

Duration: Covers daily exposures up to 8 hours.

Organizational and technical measures and conditions

Provide a good standard of general ventilation (not less than 1 to 3 air changes per hour).

Dermal: minimum efficiency of 0%.

Inhalation: minimum yield of 0%.

Conditions and measures for personal protection, hygiene and health assessment

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

Use adequate eye protection.

Dermal: minimum efficiency of 95%.

Inhalation: minimum yield of 0%.

Other conditions affecting worker exposure

Outdoor / Indoor Inside.

Industrial or professional environments Professional use.

Temperature: 70°C

2.4. WORKERS EXPOSURE CONTROL: Transfer of substance or mixture (charging/discharging) from/to vessels/large containers at dedicated facilities. (PROC8b)

Product features (article)

Covers the percentage of substance in the product up to 100%.

Physical form of the product: Liquid.

Vapour pressure: 0,00741 Pa

Temperature: 70°C

Amount used (or contained in articles), frequency and duration of use/exposure

Duration: Covers daily exposures up to 8 hours.

Organizational and technical measures and conditions

Assumes a good basic standard of occupational hygiene is implemented.

Provide a good standard of general ventilation (not less than 1 to 3 air changes per hour).

Conditions and measures for personal protection, hygiene and health assessment

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

Use adequate eye protection.

Dermal: minimum efficiency of 95%.

Inhalation: minimum yield of 0%.

Wear suitable respirator.

Inhalation: minimum yield of 90%.

Other conditions affecting worker exposure

Outdoor / Indoor Inside.

Temperature: 70°C

2.5. WORKERS EXPOSURE CONTROL: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9)

Product features (article)

Covers concentrations up to 100%.

Physical form of the product: Liquid.

Vapour pressure: 0,00741 Pa

Temperature: < 50°C

Amount used (or contained in articles), frequency and duration of use/exposure

Duration: Covers daily exposures up to 8 hours.

Organizational and technical measures and conditions

Assumes a good basic standard of occupational hygiene is implemented.

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Dermal: minimum efficiency of 0%.

Inhalation: minimum yield of 30%.

Conditions and measures for personal protection, hygiene and health assessment

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

Use adequate eye protection.

Dermal: minimum efficiency of 95%.

Inhalation: minimum yield of 0%.

Wear suitable respirator.

Inhalation: minimum yield of 90%.

Other conditions affecting worker exposure

Outdoor / Indoor Inside.

Temperature: < 50°C

2.6. WORKERS EXPOSURE CONTROL: Application with rollers or brushes (PROC10)

Product features (article)

Covers the percentage of substance in the product up to 25%.

Physical form of the product: Liquid.

Vapour pressure: 0,00741 Pa

Temperature: < 70°C

Amount used (or contained in articles), frequency and duration of use/exposure

Duration: Covers daily exposures up to 8 hours.

Organizational and technical measures and conditions

Assumes a good basic standard of occupational hygiene is implemented.

Provide a good standard of general ventilation (not less than 1 to 3 air changes per hour).

Local exhaust ventilation.

Dermal: minimum efficiency of 0%.

Inhalation: minimum yield of 90%.

Conditions and measures for personal protection, hygiene and health assessment

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

Use adequate eye protection.

Dermal: minimum efficiency of 99%.

Inhalation: minimum yield of 0%.

Other conditions affecting worker exposure

Outdoor / Indoor Inside.

Temperature: < 70°C.

2.7. WORKERS EXPOSURE CONTROL: Non-industrial spraying (PROC11)

Product features (article)

Covers the percentage of substance in the product up to 25%.

Physical form of the product: Liquid.

Temperature: < 40°C

Amount used (or contained in articles), frequency and duration of use/exposure

Duration: Covers daily exposures up to 8 hours.

Organizational and technical measures and conditions

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Conditions and measures for personal protection, hygiene and health assessment

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

Use adequate eye protection.

If skin contamination is expected to extend to other parts of the body, these parts should also be protected with impermeable clothing equivalent to that described for the hands.

Wear suitable respirator.

Dermal: minimum efficiency of 99%.

Inhalation: minimum yield of 90%.

Other conditions affecting worker exposure

Outdoor / Indoor Inside.

Temperature: < 40°C.

3. EXPOSURE ESTIMATION AND REFERENCE TO ITS SOURCE

3.1. Environmental release and exposure: Use at an industrial site leading to inclusion in article (ERC5)

Route release	Release rate	Method for estimating for release
water	0.06 kg/day	FEICA SPERC 8c.1 b.v1
air	0 kg/day	FEICA SPERC 8c.1 b.v1
Soil	0%	FEICA SPERC 8c.1 b.v1

Protection target	Estimated Exposure (EUSES v2.1)	RCR
Fresh water	3.22E-3mg/l	0,536
Fresh water sediments	0.155mg/l	0,454
Sea water	3.14E-4mg/l	0,523
Marine sediment	0.015mg/kg dry weight	0,442
Sewage treatment plant	0.028mg/l	< 0.01
Farmland	0.05mg/kg dry weight	0,779
Prey for predators (freshwater)	0.048mg/kg wet weight	< 0.01
Prey for predators (marine water)	4.53E-3mg/kg wet weight	< 0.01
Main predator prey (marine water)	1.64E-3mg/kg wet weight	< 0.01
Prey for Predators (Terrestrial)	0.056mg/kg wet weight	< 0.01
Man through the environment - inhalation	Concentration in air: 3.45E-11 mg/m³	< 0.01
Man through the environment - oral	1.47E-3mg/kg pc/giorno	< 0.01
Population exposed through the environment	-	< 0.01

3.2. Worker exposure: Industrial spraying (PROC7)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	0.34mg/m ³ (ART v1.5)	0.069
inhalation	local	Long-term	0.34mg/m ³ (ART v1.5)	-
inhalation	local	Short term	0.78mg/m ³ (ART v1.5)	-
dermal	systemic	Long-term	0.257mg/kgbw/day (ECETOC TRA worker v3)	0.343
dermal	local	Short term	0.012mg/cm ² (ECETOC TRA worker v3)	-
combined routes	-	-	-	0.412

3.3. Worker exposure: Transfer of a substance or a preparation (filling/emptying) at non-dedicated facilities (PROC8a)

Exposure routes	Health effect	Exposure indicator	Estimated exposure (ECETOC TRA worker v3)	RCR
inhalation	systemic	Long-term	0.851mg/m ³	0.173
inhalation	local	Long-term	0.851mg/m ³	-
inhalation	local	Short term	0.851mg/m ³	-
dermal	systemic	Long-term	0.411mg/kgbw/day	0.548
dermal	local	Short term	0.03mg/cm ²	-
combined routes	-	-	-	0.721

3.4. Worker exposure: Transfer of a substance or a mixture (fill/discharge) at dedicated facilities (PROC8b)

Exposure routes	Health effect	Exposure indicator	Estimated exposure (ECETOC TRA worker v3)	RCR
inhalation	systemic	Long-term	0.085mg/m ³	0.017
inhalation	local	Long-term	0.085mg/m ³	-
inhalation	local	Short term	0.0851mg/m ³	-
dermal	systemic	Long-term	0.411mg/kgbw/day	0.548
dermal	local	Short term	0.03mg/cm ²	-
combined routes	-	-	-	0.566

3.5. Worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9)

Exposure routes	Health effect	Exposure indicator	Estimated exposure (ECETOC TRA worker v3)	RCR
inhalation	systemic	Long-term	0.099mg/m ³	0.02
inhalation	local	Long-term	0.099mg/m ³	-
inhalation	local	Short term	0.993mg/m ³	-
dermal	systemic	Long-term	0.343mg/kgbw/day	0.457
dermal	local	Short term	0.05mg/cm ²	-
combined routes	-	-	-	0.659

3.6. Worker exposure: Application with rollers or brushes (PROC10)

Exposure routes	Health effect	Exposure indicator	Estimated exposure (ECETOC TRA worker v3)	RCR
inhalation	systemic	Long-term	0.085mg/m ³	0.017
inhalation	local	Long-term	0.085mg/m ³	-
inhalation	local	Short term	0.085mg/m ³	-
dermal	systemic	Long-term	0.165mg/kgbw/day	0.219
dermal	local	Short term	0.012mg/cm ²	-
combined routes	-	-	-	0.237

3.7. Worker exposure: Non-industrial spraying (PROC11)

Exposure routes	Health effect	Exposure indicator	Estimated exposure	RCR
inhalation	systemic	Long-term	0.34mg/m ³ (ART v1 .5)	0.069
inhalation	local	Long-term	0.34mg/m ³ (ART v1 .5)	-
inhalation	local	Short term	0.78mg/m ³ (ART v1 .5)	-
dermal	systemic	Long-term	0.643mg/kgbw/day (ECETOC TRA worker v3)	0.857
dermal	local	Short term	0.03mg/cm ² (ECETOC TRA worker v3)	-
combined routes	-	-	-	0.926

4. GUIDANCE FOR DOWNSTREAM USERS TO ASSESS WHETHER THEY COMPLY WITH THE LIMITS SET BY THE EXPOSURE SCENARIO

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

2-methoxy-1-methylethyl acetate

Substance identification

Chemical Name: 2-methoxy-1-methylethyl acetate

CAS number: 108-65-6

Date - Version: 02/08/2021 18.0

4. USE IN COATINGS. - USE IN INDUSTRIAL PLANTS

Short title of the exposure scenario: Use in coatings. - Use in industrial plants

SU3; ERC4; PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15

EXPOSURE CONTROL AND RISK MANAGEMENT MEASURES

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: ERC4: Industrial use of processing aids not becoming part of articles.

Operating conditions

Yearly amount used in EU: 63,050,000 kg

Daily amount per site: 105.087 kg

Minimum continuous emission days per year: 300

Emission factor to air: 27%

Emission factor in water: 2%

Emission factor in soil: 0.1%

Releases based on A&B tables from TGD 2003

Freshwater dilution factor: 10

Marine water dilution factor: 100

Risk management measures

Treat air emissions to provide a typical removal efficiency of 70%.

Prevent discharge of undissolved substance, or recover from wastewater.

Type of treatment plant: Municipal sewage treatment plant.

Total removal efficiency of the substance from the wastewater after Risk Management Measures and treatment in the treatment plant (5): 87.3%

Assumed treatment plant flow: 2,000 m³/day

Measures relative to the waste

Dispose of waste cans and containers according to local regulations.

Exposure estimation and reference to its source

Risk Characterization Ratio (RCR): 0.1338

Risk from environmental exposure is driven by freshwater and marine water.

Maximum safe use amount: 79,180 kg/day

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC1: Use in closed process, no likelihood of exposure.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥0 - ≤100%

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 0.04 mg/m³

Risk Characterization Ratio (RCR): 0.0001

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 0.34 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.01

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC2: Use in closed, continuous process with occasional controlled exposure.
General exposure. Continuous process (closed system) with sample collection.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥0 - ≤100%

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 37.54 mg/m³

Risk Characterization Ratio (RCR): 0.1

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 1.37 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.03

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC2: Use in closed, continuous process with occasional controlled exposure.
Film formation - Fast drying.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥0 - ≤100%

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 187.71 mg/m³

Risk Characterization Ratio (RCR): 0.5

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 1.37 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.03

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC3: Use in batch process (synthesis or formulation). Mixing operations. General exposure (closed system).

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 93.85 mg/m³

Risk Characterization Ratio (RCR): 0.25

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 0.34 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.01

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC4: Use in batch process (synthesis) where opportunity for exposure arises. Film formation - Air drying.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 75.08 mg/m³

Risk Characterization Ratio (RCR): 0.2

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 6.86 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.14

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC5: Mixing in batch processes for formulation of preparations and articles (multistage and/or significant contact). Preparation of material for application. Mixing operations (open systems).

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 187.71 mg/m³

Risk Characterization Ratio (RCR): 0.51

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 13.71 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.27

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC7: Industrial spray application. Spraying (automatic/robotic).

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥0 - ≤100%

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Carry out in a vented booth or extracted enclosure. Effectiveness: 95%.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 46.93 mg/m³

Risk Characterization Ratio (RCR): 0.13

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 2.14 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.04

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC7: Industrial spray application. Spraying (manual).

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥0 - ≤100%

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Effectiveness: 70%.

Wear suitable gloves compliant with EN ISO 374-1. Effectiveness: 80%.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 281.56 mg/m³

Risk Characterization Ratio (RCR): 0.76

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 8.57 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.17

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities. Material transfers. Non-dedicated system.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 187.71 mg/m³

Risk Characterization Ratio (RCR): 0.51

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 13.71 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.27

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. Material transfers. Dedicated plant.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 187.71 mg/m³

Risk Characterization Ratio (RCR): 0.51

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 6.86 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.14

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Material transfers. Drum/batch transfers. Transfer from containers. Dedicated plant.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 187.71 mg/m³

Risk Characterization Ratio (RCR): 0.51

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 6.86 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.14

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC10: Application with rollers or brushes. Roller, spatula, jet application.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥0 - ≤100%

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Wear suitable gloves compliant with EN ISO 374-1. Effectiveness: 80%

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 187.71 mg/m³

Risk Characterization Ratio (RCR): 0.51

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 5.49 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.11

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC13: Treatment of articles by dipping, pouring, enamelling.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥0 - ≤100%

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 187.71 mg/m³

Risk Characterization Ratio (RCR): 0.51

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 13.71 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.27

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC14: Production of preparations or articles by tableting, compression, extrusion or pelletising. Production or preparation of articles by tableting, compression, extrusion.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 187.71 mg/m³

Risk Characterization Ratio (RCR): 0.51

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 3.43 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.07

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC15: Use as laboratory reagent. Laboratory activities.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 37.54 mg/m³

Risk Characterization Ratio (RCR): 0.1

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 0.34 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.01

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

5. USE IN COATINGS. - USE IN INDUSTRIAL PLANTS

Short title of the exposure scenario: Use in coatings. - Use in industrial plants

SU3; ERC4; PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15

EXPOSURE CONTROL AND RISK MANAGEMENT MEASURES

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: ERC4: Industrial use of processing aids not becoming part of articles.

Operating conditions

Yearly amount used in EU: 2,600,000 kgs

Daily amount per site: 430kg

Minimum continuous emission days per year: 300

Emission factor to air: 80%

Emission factor in water: 10%

Emission factor in soil: 0.1%

Releases based on A&B tables from TGD 2003

Freshwater dilution factor: 10

Marine water dilution factor: 100

Risk management measures

Prevent discharge of undissolved substance, or recover from wastewater.

Type of treatment plant: Municipal sewage treatment plant.

Total removal efficiency of the substance from the wastewater after Risk Management Measures and treatment in the treatment plant (5): 87.3%

Assumed treatment plant flow: 2,000 m³/day

Measures relative to the waste

Dispose of waste cans and containers according to local regulations.

Exposure estimation and reference to its source

Risk Characterization Ratio (RCR): 0.029

Risk from environmental exposure is driven by freshwater and marine water.

Maximum safe use amount: 140.104 kg/day

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC1: Use in closed process, no likelihood of exposure (closed system). General exposure.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥0 - ≤5%

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Workers - all relevant routes of exposure.

If the operating conditions identified and risk management measures are applied, the use has been assessed as safe.

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC2: Use in closed, continuous process with occasional controlled exposure. General exposure. Continuous process (closed system) with sample collection.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 7.51 mg/m³

Risk Characterization Ratio (RCR): 0.02

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 1.37 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.03

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC2: Use in closed, continuous process with occasional controlled exposure.
Film formation - Fast drying.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Operation is carried out at elevated temperature ($> 20^\circ\text{C}$ above ambient temperature).

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 37.54 mg/m³

Risk Characterization Ratio (RCR): 0.1

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 1.37 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.03

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC3: Use in batch process (synthesis or formulation). Mixing operations.
General exposure (closed system).

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 18.77 mg/m³

Risk Characterization Ratio (RCR): 0.05

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 0.34 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.01

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC4: Use in batch process (synthesis) where opportunity for exposure arises. Film formation - Air drying.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 15.02 mg/m³

Risk Characterization Ratio (RCR): 0.04

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 6.86 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.14

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC5: Mixing in batch processes for formulation of preparations and articles (multistage and/or significant contact). Preparation of material for application. Mixing operations (open systems).

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 37.54 mg/m³

Risk Characterization Ratio (RCR): 0.1

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 13.71 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.27

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC7: Industrial spray application. Spraying (automatic/robotic). Spraying (manual)

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Wear suitable gloves compliant with EN ISO 374-1. Effectiveness: 80%.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 187.71 mg/m³

Risk Characterization Ratio (RCR): 0.51

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 8.57 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.17

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC7: Industrial spray application. Spraying (manual).

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥0 - ≤5%

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Wear suitable gloves compliant with EN ISO 374-1.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Workers - all relevant routes of exposure

If the operating conditions identified and risk management measures are applied, the use has been assessed as safe.

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities. Material transfers. Non-dedicated system.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥0 - ≤5%

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 37.54 mg/m³

Risk Characterization Ratio (RCR): 0.1

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 13.71 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.27

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. Material transfers. Dedicated plant.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 37.54 mg/m³

Risk Characterization Ratio (RCR): 0.1

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 6.86 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.14

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Material transfers. Drum/batch transfers. Transfer from containers. Dedicated plant.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 37.54 mg/m³

Risk Characterization Ratio (RCR): 0.1

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 6.86 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.14

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC10: Application with rollers or brushes. Roller, spatula, jet application.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 37.54 mg/m³

Risk Characterization Ratio (RCR): 0.1

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 27.43 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.54

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC13: Treatment of articles by dipping, pouring, enamelling.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 37.54 mg/m³

Risk Characterization Ratio (RCR): 0.1

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 13.71 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.27

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC14: Production of preparations or articles by tableting, compression, extrusion or pelletising. Production or preparation of articles by tableting, compression, extrusion.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 37.54 mg/m³

Risk Characterization Ratio (RCR): 0.1

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 3.43 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.07

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC15: Use as laboratory reagent. Laboratory activities.

Area of use: Industrial

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 7.51 mg/m³

Risk Characterization Ratio (RCR): 0.02

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 0.34 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.01

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

7 USE IN COATINGS. - USE IN INDUSTRIAL PLANTS

Short title of the exposure scenario: Use in coatings. - Use in professional installations

SU22; ERC8a, ERC8d; PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15, PROC19

EXPOSURE CONTROL AND RISK MANAGEMENT MEASURES

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: ERC8a: Wide dispersive indoor use of processing aids in open systems.

Operating conditions

Yearly amount used in EU: 2,600,000 kgs

Daily amount per site: 433 kg

Minimum continuous emission days per year: 300

Emission factor to air: 80%

Emission factor in water: 10%

Emission factor in soil: 0.1%

Releases based on A&B tables from TGD 2003

Freshwater dilution factor: 10

Marine water dilution factor: 100

Risk management measures

Prevent discharge of undissolved substance, or recover from wastewater.

Type of treatment plant: Municipal sewage treatment plant.

Total removal efficiency of the substance from the wastewater after Risk Management Measures and treatment in the treatment plant (5): 87.3%

Assumed treatment plant flow: 2,000 m³/day

Measures relative to the waste

Dispose of waste cans and containers according to local regulations.

Exposure estimation and reference to its source

Risk Characterization Ratio (RCR): 0.029

Risk from environmental exposure is driven by freshwater and marine water.

Maximum safe use amount: 15,141 kg/day

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: ERC8d: Wide dispersive outdoor use of processing aids in open systems.

Operating conditions

Yearly amount used in EU: 2,600,000 kgs

Daily amount per site: 433 kg

Minimum continuous emission days per year: 300

Emission factor to air: 80%

Emission factor in water: 10%

Emission factor in soil: 0.1%

Releases based on A&B tables from TGD 2003

Freshwater dilution factor: 10

Marine water dilution factor: 100

Risk management measures

Prevent discharge of undissolved substance, or recover from wastewater.

Type of treatment plant: Municipal sewage treatment plant.

Total removal efficiency of the substance from the wastewater after Risk Management Measures and treatment in the treatment plant (5): 87.3%

Assumed treatment plant flow: 2,000 m³/day

Measures relative to the waste

Dispose of waste cans and containers according to local regulations.

Exposure estimation and reference to its source

Risk Characterization Ratio (RCR): 0.029

Risk from environmental exposure is driven by freshwater and marine water.

Maximum safe use amount: 15,141 kg/day

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC1: Use in closed process, no likelihood of exposure.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 0.04 mg/m³

Risk Characterization Ratio (RCR): 0.0001

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 0.34 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.01

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC2: Use in closed, continuous process with occasional controlled exposure.

Filling/Preparation of equipment required for drums and containers.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Workers - all relevant routes of exposure.

The use has been assessed as safe.

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC2: Use in closed, continuous process with occasional controlled exposure.

General exposure. Use in confined systems (closed system). Filling/Preparation of equipment required for drums and containers.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Operation is carried out at elevated temperature ($> 20^\circ\text{C}$ above ambient temperature).

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 75.08 mg/m³

Risk Characterization Ratio (RCR): 0.2

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 1.37 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.03

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC3: Use in batch process (synthesis or formulation). Preparation of material for application

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥0 - ≤100%

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 93.85 mg/m³

Risk Characterization Ratio (RCR): 0.25

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 0.34 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.01

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC4: Use in batch process (synthesis) where opportunity for exposure arises. Film formation - Air drying.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥0 - ≤100%

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 187.71 mg/m³

Risk Characterization Ratio (RCR): 0.51

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 6.86 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.14

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC4: Use in batch and other processes (synthesis) where opportunity for exposure arises. Film formation - Air drying.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Workers - all relevant routes of exposure.

The use has been assessed as safe.

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC5: Mixing in batch processes for formulation of preparations and articles (multistage and/or significant contact). Preparation of material for application.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Effectiveness: 30%.

Alternatively: Ensure that operations are carried out externally.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 269.79 mg/m³

Risk Characterization Ratio (RCR): 0.71

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 13.71 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.27

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC5: Mixing in batch processes for formulation of preparations and articles (multistage and/or significant contact). Preparation of material for application.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Ensure that operations are carried out externally.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Workers - all relevant routes of exposure

If the operating conditions identified and risk management measures are applied, the use has been assessed as safe.

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities. Material transfers. Drum/batch transfers. Non-dedicated system.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Effectiveness: 30%.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 262.79 mg/m³

Risk Characterization Ratio (RCR): 0.71

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 13.71 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.27

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. Material transfers. Drum/batch transfers Dedicated plant.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 187.71 mg/m³

Risk Characterization Ratio (RCR): 0.51

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 6.86 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.14

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC10: Application with rollers or brushes. Roller, spatula, jet application.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Effectiveness: 30%.

Wear suitable gloves compliant with EN ISO 374-1. Effectiveness: 80%

If there is no general ventilation, ensure that operations are carried out outdoors.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 262.79 mg/m³

Risk Characterization Ratio (RCR): 0.71

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 5.49 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.11

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC10: Application with rollers or brushes. Roller, spatula, jet application.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Ensure that operations are carried out externally.

Wear suitable gloves compliant with EN ISO 374-1.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Workers - all relevant routes of exposure

If the operating conditions identified and risk management measures are applied, the use has been assessed as safe.

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC11: Non-industrial spray application. Spraying (manual).

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Carry out in a vented booth or extracted enclosure. Effectiveness: 80%.

Wear a respirator conforming to EN140 with type A filter or better. Effectiveness: 90%.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 37.54 mg/m³

Risk Characterization Ratio (RCR): 0.1

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 2.14 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.04

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC11: Non-industrial spray application. Spraying (manual).

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥0 - ≤100%

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Ensure that operations are carried out externally. Effectiveness: 30%.

Wear a respirator conforming to EN140 with type A filter or better. Effectiveness: 90%.

Wear suitable gloves compliant with EN ISO 374-1. Effectiveness: 80%.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 131.4 mg/m³

Risk Characterization Ratio (RCR): 0.36

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 21.43 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.42

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC13: Treatment of articles by dipping, pouring, enamelling.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥0 - ≤100%

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Effectiveness: 30%.

Alternatively: Ensure that operations are carried out externally.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 262.79 mg/m³

Risk Characterization Ratio (RCR): 0.71

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 13.71 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.27

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC13: Treatment of articles by dipping, pouring, enamelling.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Ensure that operations are carried out externally.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Workers - all relevant routes of exposure

If the operating conditions identified and risk management measures are applied, the use has been assessed as safe.

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC15: Use as laboratory reagent. Laboratory activities.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 37.54 mg/m³

Risk Characterization Ratio (RCR): 0.1

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 0.34 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.01

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC19: Manual mixing with direct contact using only personal protective equipment. Hand application - fingerpaints, pastels, adhesives.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 100\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Effectiveness: 30%.

Wear chemically resistant gloves in combination with "basic" employee training. Effectiveness: 90%.

If there is no general ventilation, ensure that operations are carried out outdoors.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 262.79 mg/m³

Risk Characterization Ratio (RCR): 0.71

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 14.14 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.28

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC19: Manual mixing with direct contact using only personal protective equipment. Hand application - fingerpaints, pastels, adhesives.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥0 - ≤100%

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Ensure that operations are carried out externally.

Wear chemically resistant gloves in combination with "basic" employee training.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Workers - all relevant routes of exposure

If the operating conditions identified and risk management measures are applied, the use has been assessed as safe.

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

8. USE IN COATINGS. - USE IN INDUSTRIAL PLANTS

Short title of the exposure scenario: Use in coatings. - Use in professional installations

SU22; ERC8a, ERC8d; PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15, PROC19

EXPOSURE CONTROL AND RISK MANAGEMENT MEASURES

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: ERC8a: Wide dispersive indoor use of processing aids in open systems.

Operating conditions

Yearly amount used in EU: 2,600,000 kgs

Daily amount per site: 433 kg

Minimum continuous emission days per year: 300

Emission factor to air: 80%

Emission factor in water: 10%

Emission factor in soil: 0.1%

Releases based on A&B tables from TGD 2003

Freshwater dilution factor: 10

Marine water dilution factor: 100

Risk management measures

Prevent discharge of undissolved substance, or recover from wastewater.

Type of treatment plant: Municipal sewage treatment plant.

Total removal efficiency of the substance from the wastewater after Risk Management Measures and treatment in the treatment plant (5): 87.3%

Assumed treatment plant flow: 2,000 m³/day

Measures relative to the waste

Dispose of waste cans and containers according to local regulations.

Exposure estimation and reference to its source

Risk Characterization Ratio (RCR): 0.029

Risk from environmental exposure is driven by freshwater and marine water.

Maximum safe use amount: 15,141 kg/day

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: ERC8d: Wide dispersive outdoor use of processing aids in open systems.

Operating conditions

Yearly amount used in EU: 2,600,000 kgs

Daily amount per site: 433 kg

Minimum continuous emission days per year: 300

Emission factor to air: 80%

Emission factor in water: 10%

Emission factor in soil: 0.1%

Releases based on A&B tables from TGD 2003

Freshwater dilution factor: 10

Marine water dilution factor: 100

Risk management measures

Prevent discharge of undissolved substance, or recover from wastewater.

Type of treatment plant: Municipal sewage treatment plant.

Total removal efficiency of the substance from the wastewater after Risk Management Measures and treatment in the treatment plant (5): 87.3%

Assumed treatment plant flow: 2,000 m³/day

Measures relative to the waste

Dispose of waste cans and containers according to local regulations.

Exposure estimation and reference to its source

Risk Characterization Ratio (RCR): 0.029

Risk from environmental exposure is driven by freshwater and marine water.

Maximum safe use amount: 15,141 kg/day

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC1: Use in closed process, no likelihood of exposure. General exposure (closed system).

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Workers - all relevant routes of exposure

If the operating conditions identified and risk management measures are applied, the use has been assessed as safe.

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC2: Use in closed, continuous process with occasional controlled exposure. Filling/Preparation of equipment required for drums and containers.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Workers - all relevant routes of exposure

If the operating conditions identified and risk management measures are applied, the use has been assessed as safe.

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC2: Use in closed, continuous process with occasional controlled exposure. General exposure. Use in confined systems (closed system). Filling/Preparation of equipment required for drums and containers.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Operation is carried out at elevated temperature ($> 20^\circ\text{C}$ above ambient temperature).

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 15.02 mg/m³

Risk Characterization Ratio (RCR): 0.4

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 1.37 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.03

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC3: Use in batch process (synthesis or formulation). Preparation of material for application

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥0 - ≤5%

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 18.77 mg/m³

Risk Characterization Ratio (RCR): 0.05

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 0.34 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.01

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC4: Use in batch and other processes (synthesis) where opportunity for exposure arises. Film formation - Air drying.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥0 - ≤5%

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 37.54 mg/m³

Risk Characterization Ratio (RCR): 0.1

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 6.86 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.14

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC4: Use in batch and other processes (synthesis) where opportunity for exposure arises. Film formation - Air drying.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Indoor/Outdoor: Indoor use.

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Workers - all relevant routes of exposure

If the operating conditions identified and risk management measures are applied, the use has been assessed as safe.

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC5: Mixing in batch processes for formulation of preparations and articles (multistage and/or significant contact). Preparation of material for application.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 75.08 mg/m³

Risk Characterization Ratio (RCR): 0.2

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 13.71 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.27

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC5: Mixing in batch processes for formulation of preparations and articles (multistage and/or significant contact). Preparation of material for application.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Ensure that operations are carried out externally.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Workers - all relevant routes of exposure

If the operating conditions identified and risk management measures are applied, the use has been assessed as safe.

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities. Material transfers. Drum/batch transfers. Non-dedicated system.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 75.08 mg/m³

Risk Characterization Ratio (RCR): 0.2

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 13.71 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.27

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. Material transfers. Drum/batch transfers Dedicated plant.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 37.54 mg/m³

Risk Characterization Ratio (RCR): 0.1

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 6.86 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.14

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC10: Application with rollers or brushes. Roller, spatula, jet application.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 75.08 mg/m³

Risk Characterization Ratio (RCR): 0.2

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 27.43 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.54

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC10: Application with rollers or brushes. Roller, spatula, jet application.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥0 - ≤5%

Indoor/Outdoor: Outdoor use.

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Workers - all relevant routes of exposure

If the operating conditions identified and risk management measures are applied, the use has been assessed as safe.

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC11: Non-industrial spray application. Spraying (manual).

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥0 - ≤5%

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Effectiveness: 30%.

Wear chemically resistant gloves in combination with "basic" employee training. Effectiveness: 90%.

If there is no general ventilation, ensure that operations are carried out outdoors.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 262.79 mg/m³

Risk Characterization Ratio (RCR): 0.71

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 10.71 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.21

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC11: Non-industrial spray application. Spraying (manual).

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Ensure that operations are carried out externally.

Wear chemically resistant gloves in combination with "basic" employee training.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Workers - all relevant routes of exposure

If the operating conditions identified and risk management measures are applied, the use has been assessed as safe.

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC13: Treatment of articles by dipping, pouring, enamelling.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 75.08 mg/m³

Risk Characterization Ratio (RCR): 0.2

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 13.71 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.27

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC13: Treatment of articles by dipping, pouring, enamelling.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Indoor/Outdoor: Indoor use.

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Ensure that operations are carried out externally.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Workers - all relevant routes of exposure

If the operating conditions identified and risk management measures are applied, the use has been assessed as safe.

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC15: Use as laboratory reagent. Laboratory activities.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 7.51 mg/m³

Risk Characterization Ratio (RCR): 0.02

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 0.34 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.01

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC19: Manual mixing with direct contact using only personal protective equipment. Hand application - fingerpaints, pastels, adhesives.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Wear suitable gloves compliant with EN ISO 374-1. Effectiveness: 80%.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Worker - inhalation, long-term - systemic.

Exposure estimation: 75.08 mg/m³

Risk Characterization Ratio (RCR): 0.2

Evaluation method: ESIG GES tool, Operator. Worker - dermal, long-term - systemic.

Exposure estimation: 28.29 mg/kg/day (body weight)

Risk Characterization Ratio (RCR): 0.56

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC19: Manual mixing with direct contact using only personal protective equipment. Hand application - fingerpaints, pastels, adhesives.

Area of use: Professional

Operating conditions

Substance concentration: 1-methoxy-2-propanol content: ≥ 0 - $\leq 5\%$

Physical state: liquid, medium volatility

Duration and frequency of application: 480 mins. 5 days a week

Indoor/Outdoor: Outdoor use.

Assumes use at not more than 20°C above ambient temperature.

Risk management measures

Wear suitable gloves compliant with EN ISO 374-1.

Exposure estimation and reference to its source

Evaluation method: ESIG GES tool, Operator. Workers - all relevant routes of exposure

If the operating conditions identified and risk management measures are applied, the use has been assessed as safe.

Guidance for downstream users

<http://www.esig.org/en/regulatory-information/reach/ges-library/ges-library-3>

Varnostni list

FASSA EPOXY 100 COMP.B

Varnostni list z dne 19/02/2025 revizija 2



ODDELEK 1: Identifikacija snovi/zmesi in družbe/podjetja

1.1 Identifikator izdelka

Identifikacija pripravka:

Komercialno ime: FASSA EPOXY 100 COMP.B

Komercialna koda: 1222.B

UFI: 75U2-X13E-100Q-171T

1.2 Pomembne identificirane uporabe snovi ali zmesi in odsvetovane uporabe

Priporočena uporaba: Epoksidna osnova za FRP sisteme

1.3 Podrobnosti o dobavitelju varnostnega lista

Dobavitelj FASSA Srl

Via Lazzaris, 3 - 31027 Spresiano (TV) - ITALY

Tel. +39 0422 7222

Fax +39 0422 887509

Odgovorni: laboratorio.spresiano@fassabortolo.it

1.4 Telefonska številka za nujne primere

112 - Center za obveščanje (na voljo 24 ur)

ODDELEK 2: Določitev nevarnosti



2.1 Razvrstitev snovi ali zmesi

Uredba (ES) št. 1272/2008 (CLP)

Acute Tox. 4	Zdravju škodljivo pri zaužitju.
Acute Tox. 4	Zdravju škodljivo pri vdihavanju.
Skin Corr. 1C	Povzroča hude opekline kože in poškodbe oči.
Skin Sens. 1	Lahko povzroči alergijski odziv kože.
Repr. 2	Sum škodljivosti za plodnost. Sum škodljivosti za nerojenega otroka.
STOT RE 2	Lahko škoduje organom pri dolgotrajni ali ponavljajoči se izpostavljenosti.
Aquatic Chronic 3	Škodljivo za vodne organizme, z dolgotrajnimi učinki.

Nevarnosti fizikalno-kemijskih lastnosti za zdravje ljudi in za okolje:

Ni drugih tveganj

2.2 Elementi etikete

Uredba (ES) št. 1272/2008 (CLP)

Piktogrami za nevarnost in Opozorilna beseda



Nevarno

Stavki o nevarnosti

H302	Zdravju škodljivo pri zaužitju.
H314	Povzroča hude opekline kože in poškodbe oči.
H317	Lahko povzroči alergijski odziv kože.
H332	Zdravju škodljivo pri vdihavanju.
H361fd	Sum škodljivosti za plodnost. Sum škodljivosti za nerojenega otroka.
H373	Lahko škoduje organom pri dolgotrajni ali ponavljajoči se izpostavljenosti.
H412	Škodljivo za vodne organizme, z dolgotrajnimi učinki.

Previdnostni stavki

P260	Ne vdihavati dima/plina/meglvice/hlapov/razpršila
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- P264 Po uporabi temeljito umiti z vodo.
- P280 Nadenite si zaščitne rokavice/obleke ter zaščitite oči/obraz.
- P303+P361+P353 PRI STIKU S KOŽO (ali lasmi): Takoj sleči vsa kontaminirana oblačila. Kožo izprati z vodo [ali prho].
- P305+P351+P338 PRI STIKU Z OČMI: Previdno izpirati z vodo nekaj minut. Odstranite kontaktne leče, če jih imate in če to lahko storite brez težav. Nadaljujte z izpiranjem.
- P310 Takoj pokličite CENTER ZA ZASTRUPITVE/ zdravnika.

Vsebuje:

3-aminometil-3,5,5-trimetilcikloheksilamin

m-phenylenebis(methylamine)

benzil alkohol

reakcijski produkti formaldehid in 4-nonilfenol in trietilentetramin in 2-piperazin-1-iletilamin

2-piperazin-1-iletilamin

3-aminopropiltrioksisilan

Posebne določbe v skladu s Prilogo XVII uredbe REACH in poznejše spremembe:

Nobeden

2.3 Druge nevarnosti

Ni snovi PBT, vPvB ali endokrinih motilcev v koncentraciji $\geq 0,1\%$.

Ni drugih tveganj

ODDELEK 3: Sestava/podatki o sestavinah

3.1 Snovi

ni znano

3.2 Zmesi

Identifikacija pripravka: FASSA EPOXY 100 COMP.B

Nevarne sestavine, skladno z Uredbo CLP in njeno razvrstitvijo:

Količina	Ime	Ident. št.	Razvrstitev	Registracijska številka:
$\geq 30 - < 50 \%$	m-phenylenebis(methylamine)	CAS:1477-55-0 EC:216-032-5	Acute Tox. 4, H302 Acute Tox. 4, H332 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1B, H317 Aquatic Chronic 3, H412, EUH071 Ocena akutne strupenosti: ATE - Oralno: 500mg/kg tt ATE - Vdihavanje (Prahom/meglice): 1.5mg/l	01-2119480150-50-xxxx
$\geq 20 - < 30 \%$	benzil alkohol	CAS:100-51-6 EC:202-859-9 Index:603-057-00-5	Acute Tox. 4, H302 Eye Irrit. 2, H319 Skin Sens. 1B, H317 Ocena akutne strupenosti: ATE - Oralno: 1200mg/kg tt	01-2119492630-38-xxxx
$\geq 10 - < 20 \%$	reakcijski produkti formaldehid in 4-nonilfenol in trietilentetramin in 2-piperazin-1-iletilamin	EC:922-006-0	Eye Dam. 1, H318; Skin Sens. 1, H317; Skin Corr. 1B, H314	
$\geq 10 - < 20 \%$	3-aminometil-3,5,5-trimetilcikloheksilamin	CAS:2855-13-2 EC:220-666-8 Index:612-067-00-9	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 Posebne mejne koncentracije: C $\geq 0.001\%$: Skin Sens. 1A H317 Ocena akutne strupenosti: ATE - Oralno: 1030mg/kg tt	01-2119514687-32-xxxx

≥3 - <5 %	2-piperazin-1-iletilamin	CAS:140-31-8 EC:205-411-0 Index:612-105-00-4	Acute Tox. 3, H311 Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT RE 1, H372 Aquatic Chronic 3, H412 Repr. 2, H361fd	01-2119471486-30-xxxx
			Ocena akutne strupenosti: ATE - Oralno: 500mg/kg tt	
≥0.5 - <1 %	3-aminopropiltrioksilan	CAS:919-30-2 EC:213-048-4 Index:612-108-00-0	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1B, H317	01-2119480479-24-xxxx
			Ocena akutne strupenosti: ATE - Oralno: 500mg/kg tt	

ODDELEK 4: Ukrepi za prvo pomoč

4.1 Opis ukrepov za prvo pomoč

V primeru stika s kožo:

Kontaminirana oblačila takoj slecite in jih na varen način odstranite.

V primeru stika s proizvodom in tudi v primeru suma morebitnega stika, dele telesa takoj umijte z veliko količino tekoče vode in milom.

TAKOJ SE POSVETUJTE Z ZDRAVNIKOM.

V primeru stika z očmi:

V primeru stika z očmi dovolj dolgo in z odprtimi očesnimi vekami izpirajte z obilo vode, nato poiščite pomoč zdravnika oftalmologa.

Poškodovano oko zaščitite.

V primeru zaužitja:

Ne zaužijte in ne pijte ničesar.

Po zaužitju ne izzivati bruhanja, takoj poiskati zdravniško pomoč in pokazati varnostni list in nalepko.

V primeru vdihavanja:

Prizadeto osebo umaknite na svež zrak in pustite počivati na toplem.

V primeru neenakomernega ali odsotnosti dihanja izvajajte umetno dihanje.

Če pride do zaužitja, takoj poiskati zdravniško pomoč in pokazati embalažo ali etiketo.

4.2 Najpomembnejši simptomi in učinki, akutni in zapozneli

Simptomi in učinki so taki, kot je pričakovano glede na nevarnosti, kar je prikazano v 2. razdelku.

4.3 Navedba kakršne koli takojšnje medicinske oskrbe in posebnega zdravljenja

V primeru nesreče ali slabega počutja takoj poiščite zdravniško pomoč (če je mogoče, pokažite navodila za uporabo ali varnostni list).

ODDELEK 5: Protipožarni ukrepi

5.1 Sredstva za gašenje

Ustrezna sredstva za gašenje:

CO₂, gasilni aparat na prah, pena, pršenje z vodo.

Sredstva za gašenje, ki se jih iz varnostnih razlogov ne sme uporabljati:

Vodni curki

5.2 Posebne nevarnosti v zvezi s snovjo ali zmesjo

Pri gorenju nastajajo težki dimni plini.

Ne vdihavati pline, ki nastanejo pri eksploziji in/ali gorenju (ogljikov monoksid in ogljikov dioksid, dušikovi oksidi).

5.3 Nasvet za gasilce

Uporabiti ustrezne dihalne naprave.

Ločeno zberite kontaminirano vodo, uporabljeno za gašenje požara. Ne je izpustiti v kanalizacijo.

Če je to varno izvedljivo, nepoškodovane vsebnike umaknite iz neposredno ogroženega območja.

ODDELEK 6: Ukrepi o nenamernih izpustih

6.1 Osebni varnostni ukrepi, zaščitna oprema in postopki v sili

Za neizučeno osebje:

Nosite osebno varovalno opremo.

V primeru izpostavljenosti hlapom/prahu/aerosolom nosite dihalne aparate.

Omogočite primerno zračenje.

Uporabite ustrezno zaščito dihal.

Glejte v točki 7 in 8 navedene zaščitne ukrepe.

Za reševalce:

Nosite osebno varovalno opremo.

6.2 Okoljevarstveni ukrepi

Preprečite vstop v tla/podtalnico. Preprečite razlitje v površinske vode ali v kanalizacijo.

V primeru puščanja plina ali razlitja v vodne tokove, tla ali kanalizacijo obvestite pristojne organe.

6.3 Metode in materiali za zadrževanje in čiščenje

Za zbiranje primeren material: inerten vpojni materiali (npr. pesek, vermikulit).

Po pobiranju z vodo izperite območje in prizadete materiale.

Kontaminirano vodo za pranje shranite in odstranite.

6.4 Sklincevanje na druge oddelke

Glejte tudi naslova 8 in 13

ODDELEK 7: Ravnanje in skladiščenje

7.1 Varnostni ukrepi za varno ravnanje

Preprečite stik s kožo in očmi, vdihavanje hlapov in megle.

Uporabite lokaliziran sistem prezračevanja.

Prazne vsebnike ne uporabite dokler niso očiščeni.

Pred postopki prenosa se prepričajte, da v vsebnikih ni ostankov nezdružljivih materialov.

Nasveti o splošni higieni dela:

Kontaminirana oblačila se mora pred vstopom v jedilnico zamenjati.

Med delom ne jejte in ne pijte.

Glejte tudi naslov 8 o priporočeni varovalni opremi.

7.2 Pogoji za varno skladiščenje, vključno z nezdružljivostjo

Posode hranite tesno zaprte na hladnem in dobro prezračevanem mestu proč od virov toplote.

Hranite stran od hrane, pijač in krme.

Inkompaktibilne snovi:

Glejte točko 10.5

Navodila za prostore:

Primerno zračeni prostori.

7.3 Posebne končne uporabe

Priporočila

Glejte točko 1.2

Specifične rešitve za industrijski sektor

Nobena posebna uporaba

ODDELEK 8: Nadzor izpostavljenosti/osebna zaščita

8.1 Parametri nadzora

Seznam sestavin z OEL vrednostmi

m-phenylenebis(methylamine)

CAS: 1477-55-0 Tip OPZ ACGIH Kratkotrajna Zgornja meja - 0.018 ppm
Opombe: Skin - Eye, skin, and GI irr

Tip OPZ MAK Avstrija Dolgotrajna 0.1 mg/m3

Tip OPZ VLEP Belgija Kratkotrajna 0.1 mg/m3

Tip OPZ VLEP Francija Kratkotrajna 0.1 mg/m3

Tip OPZ SUVA Švicar Dolgotrajna 0.1 mg/m3

benzil alkohol

CAS: 100-51-6 Tip OPZ MAK Nemčija Dolgotrajna 22 mg/m3 - 5 ppm; Kratkotrajna 44 mg/m3 - 10 ppm
Opombe: Inhalable fraction and vapour, Skin

Tip OPZ TLV Češka Dolgotrajna 40 mg/m3 - 8.88 ppm; Kratkotrajna 80 mg/m3 - 17.76 ppm

Tip OPZ SUVA Švicar Dolgotrajna 22 mg/m3 - 5 ppm

Tip OPZ AGW Nemčija Dolgotrajna 22 mg/m3 - 5 ppm; Kratkotrajna 44 mg/m3 - 10 ppm
Opombe: Inhalable fraction and vapour

Tip OPZ NDS Poljska Dolgotrajna 240 mg/m3

Tip OPZ MV Slovenija Dolgotrajna 22 mg/m3 - 5 ppm; Kratkotrajna 44 mg/m3 - 10 ppm
Opombe: Skin

Mejna vrednost izpostavljenosti po PNEC

m-phenylenebis(methylamine)

CAS: 1477-55-0 Način izpostavitve: Morska voda; PNEC Omejite: 0.009 mg/l
Način izpostavitve: Sladka voda; PNEC Omejite: 0.094 mg/l
Način izpostavitve: Morska voda; PNEC Omejite: 0.043 mg/kg
Način izpostavitve: Sladka voda; PNEC Omejite: 0.43 mg/kg
Način izpostavitve: Tla (kmetijska); PNEC Omejite: 0.045 mg/kg
Način izpostavitve: Mikroorganizmi v čistilnih napravah (STP); PNEC Omejite: 10 mg/l

benzil alkohol

CAS: 100-51-6 Način izpostavitve: Sladka voda; PNEC Omejite: 1 mg/l
Način izpostavitve: Morska voda; PNEC Omejite: 0.1 mg/l
Način izpostavitve: Mikroorganizmi v čistilnih napravah (STP); PNEC Omejite: 39 mg/l
Način izpostavitve: Sladkovodni sedimenti; PNEC Omejite: 5.27 mg/kg
Način izpostavitve: Morski sedimenti; PNEC Omejite: 0.527 mg/kg
Način izpostavitve: Tla (kmetijska); PNEC Omejite: 0.456 mg/kg

3-aminometil-3,5,5-trimetilcikloheksilamin

CAS: 2855-13-2 Način izpostavitve: Sladka voda; PNEC Omejite: 0.06 mg/l
Način izpostavitve: Morska voda; PNEC Omejite: 0.006 mg/l
Način izpostavitve: Mikroorganizmi v čistilnih napravah (STP); PNEC Omejite: 3.18 mg/l
Način izpostavitve: Sladkovodni sedimenti; PNEC Omejite: 5.784 mg/kg
Način izpostavitve: Morski sedimenti; PNEC Omejite: 0.578 mg/kg
Način izpostavitve: Tla (kmetijska); PNEC Omejite: 1.121 mg/kg

2-piperazin-1-iletilamin

CAS: 140-31-8 Način izpostavitve: Sladka voda; PNEC Omejite: 0.058 mg/l
Način izpostavitve: Morska voda; PNEC Omejite: 5.8 µg/l
Način izpostavitve: Mikroorganizmi v čistilnih napravah (STP); PNEC Omejite: 250 mg/l
Način izpostavitve: Sladkovodni sedimenti; PNEC Omejite: 215 mg/kg
Način izpostavitve: Morski sedimenti; PNEC Omejite: 21.5 mg/kg
Način izpostavitve: Prst; PNEC Omejite: 1 mg/kg

3-aminopropiltrioksisilan

CAS: 919-30-2 Način izpostavitve: Mikroorganizmi v čistilnih napravah (STP); PNEC Omejite: 1.3 mg/l

Izpeljane vrednosti brez učinka. (DNEL)

m-phenylenebis(methylamine)

CAS: 1477-55-0 Način izpostavitve: Dermalno, človek; Pogostost izpostavitve: Dolgotrajna, sistemski učinek
Strokovni delavec: 0.33 mg/kg

Način izpostavitve: Z vdihavanjem, človek; Pogostost izpostavitve: Dolgotrajna, lokalni učinek
Strokovni delavec: 0.2 mg/m³

Način izpostavitve: Z vdihavanjem, človek; Pogostost izpostavitve: Dolgotrajna, sistemski učinek
Strokovni delavec: 1.2 mg/m³

benzil alkohol

CAS: 100-51-6 Način izpostavitve: Z vdihavanjem, človek; Pogostost izpostavitve: Kratkotrajna, sistemski učinek
Strokovni delavec: 110 mg/m³; Uporabnik: 27 mg/m³

Način izpostavitve: Z vdihavanjem, človek; Pogostost izpostavitve: Dolgotrajna, sistemski učinek
Strokovni delavec: 22 mg/m³; Uporabnik: 5.4 mg/m³

Način izpostavitve: Dermalno, človek; Pogostost izpostavitve: Kratkotrajna, sistemski učinek
Strokovni delavec: 40 mg/kg; Uporabnik: 20 mg/kg

Način izpostavitve: Dermalno, človek; Pogostost izpostavitve: Dolgotrajna, sistemski učinek
Strokovni delavec: 8 mg/kg; Uporabnik: 4 mg/kg

Način izpostavitve: Oralno, človek; Pogostost izpostavitve: Kratkotrajna, sistemski učinek
Uporabnik: 20 mg/kg

Način izpostavitve: Oralno, človek; Pogostost izpostavitve: Dolgotrajna, sistemski učinek
Uporabnik: 4 mg/kg

3-aminometil-3,5,5-trimetilcikloheksilamin

CAS: 2855-13-2 Način izpostavitve: Z vdihavanjem, človek; Pogostost izpostavitve: Dolgotrajna, lokalni učinek

Strokovni delavec: 0.073 mg/m³

Način izpostavitve: Z vdihavanjem, človek; Pogostost izpostavitve: Kratkotrajna, lokalni učinek
Strokovni delavec: 0.073 mg/m³

Način izpostavitve: Oralno, človek; Pogostost izpostavitve: Dolgotrajna, sistemski učinek
Uporabnik: 0.3 mg/kg/day

Način izpostavitve: Oralno, človek; Pogostost izpostavitve: Kratkotrajna, sistemski učinek
Uporabnik: 0.3 mg/kg/day

2-piperazin-1-iletilamin

CAS: 140-31-8 Način izpostavitve: Z vdihavanjem, človek; Pogostost izpostavitve: Kratkotrajna, sistemski učinek
Strokovni delavec: 10.6 mg/m³

Način izpostavitve: Z vdihavanjem, človek; Pogostost izpostavitve: Dolgotrajna, sistemski učinek
Strokovni delavec: 10.6 mg/m³

Način izpostavitve: Z vdihavanjem, človek; Pogostost izpostavitve: Dolgotrajna, lokalni učinek
Strokovni delavec: 0.015 mg/m³

Način izpostavitve: Z vdihavanjem, človek; Pogostost izpostavitve: Kratkotrajna, lokalni učinek
Strokovni delavec: 0.08 mg/m³

Način izpostavitve: Dermalno, človek; Pogostost izpostavitve: Dolgotrajna, sistemski učinek
Strokovni delavec: 3.33 mg/kg

3-aminopropiltrioksilan

CAS: 919-30-2 Način izpostavitve: Z vdihavanjem, človek; Pogostost izpostavitve: Dolgotrajna, sistemski učinek
Strokovni delavec: 14 mg/m³; Uporabnik: 3.5 mg/m³

Način izpostavitve: Dermalno, človek; Pogostost izpostavitve: Dolgotrajna, sistemski učinek
Strokovni delavec: 2 mg/kg; Uporabnik: 1 mg/kg

Način izpostavitve: Oralno, človek; Pogostost izpostavitve: Dolgotrajna, sistemski učinek
Uporabnik: 1 mg/kg

8.2 Nadzor izpostavljenosti

Poskrbite za ustrezno prezračevanje. Kadar je to izvedljivo, je to mogoče doseči z uporabo nadomestnega prezračevanja in dobrim splošnim vsesavanjem.

Zaščita oči:

Očala s stranskimi varovali (EN 166).

Zaščita kože:

Uporabljajte oblačila, primerna za popolno zaščito kože glede na dejavnost in izpostavljenost (EN 14605/EN 13982), npr. delovni kombinezon, predpasnik, zaščitna obutev, primerna oblačila.

Zaščita rok:

Ni materiala ali kombinacije materialov za rokavice, ki bi lahko zagotovili neomejeno odpornost na katero koli kombinacijo kemikalij ali proizvodov.

Za daljše ali večkratno rokovanje uporabite rokavice, odporne na kemikalije.

Ustrezne rokavice tipa (EN 374/EN 16523); FKM (Fluórkaučuk): debelina ≥ 0.4 mm; permeacijski čas ≥ 480 min. NBR (Nitrilkaučuk): debelina ≥ 0.4 mm; permeacijski čas ≥ 480 min

Izbira primernih rokavic ni odvisna samo od materiala, temveč tudi od drugih kakovostnih lastnosti, ki se razlikujejo od enega do drugega proizvajalca, in od načinov ter časov uporabe mešanice.

Zaščita dihalnih poti:

Če so delavci izpostavljeni koncentracijam nad mejnimi vrednostmi izpostavljenosti, morajo uporabljati primerne, certificirane dihalne aparate.

Kombinirana filtrirna naprava (EN 14387): maska s filtrom A-P2.

Nadzor izpostavljenosti okolja:

Glejte točko 6.2

Higienski in tehnični ukrepi

Glejte poglavje 7.

ODDELEK 9: Fizikalne in kemijske lastnosti

9.1 Podatki o osnovnih fizikalnih in kemijskih lastnostih

fizično stanje: Tekoče

Izgled: Tekoče

Barva: jantaren

Vonj: amin

Tališče/ledišče: N.D.

Vrelišče ali začetno vrelišče in območje vrelišča: N.D.

Vnetljivost: ni znano
Spodnja in zgornja meja eksplozivnosti: N.D.
Plamenišče: ni znano
Temperatura samovžiga: N.D.
Temperatura razgradnje: N.D.
pH: ni znano
Kinematična viskoznost: ni znano
Gostota in/ali relativna gostota: 0.991 kg/l (Interna metoda)
Relativna parna gostota: N.D.
Parni tlak: N.D.
Topnost v vodi: ni znano
Topnost v olju: Topno
Porazdelitveni koeficient n-oktanol/voda (logaritemska vrednost): ni znano

Lastnosti delcev:

Velikost delcev: ni znano

9.2 Drugi podatki

Prevodnost: N.D.
Eksplozivne lastnosti: ni znano (Notranja evalvacija)
Oksidativne lastnosti: ni znano (Notranja evalvacija)
Hitrost izparevanja: ni znano

ODDELEK 10: Obstočnost in reaktivnost

10.1 Reaktivnost

Stabilna v normalnih pogojih

10.2 Kemijska stabilnost

Stabilna v normalnih pogojih

10.3 Možnost poteka nevarnih reakcij

V stiku z močnimi oksidatorji se lahko vname.

Zaradi toplote ali v primeru požara se lahko sprostijo ogljikovi oksidi in hlapi, ki lahko škodujejo zdravju.

10.4 Pogoji, ki se jim je treba izogniti

Izogibajte se bližine toplotnih virov.

10.5 Nezdružljivi materiali

Močni oksidanti, močni reduktorji, alifatski in aromatski amini.

Glejte točko 10.3

10.6 Nevarni produkti razgradnje

V primeru pravilnega skladiščenja in ravnanja ne pride do razvoja nevarnih produktov razgradnje.

Glejte točko 5.2

ODDELEK 11: Toksikološki podatki

11.1 Podatki o razredih nevarnosti, kakor so opredeljeni v Uredbi (ES) št. 1272/2008

Toksikološki podatki izdelka:

a) akutna strupenost	Proizvod je razvrščen: Acute Tox. 4(H302), Acute Tox. 4(H332)
b) jedkost za kožo/draženje kože	Proizvod je razvrščen: Skin Corr. 1C(H314)
c) resne okvare oči/draženje	Ni klasificirano Na podlagi razpoložljivih podatkov merila za razvrstitev niso izpolnjena.
d) preobčutljivost pri vdihavanju in preobčutljivost kože	Proizvod je razvrščen: Skin Sens. 1(H317)
e) mutagenost za zarodne celice	Ni klasificirano Na podlagi razpoložljivih podatkov merila za razvrstitev niso izpolnjena.
f) rakotvornost	Ni klasificirano Na podlagi razpoložljivih podatkov merila za razvrstitev niso izpolnjena.
g) strupenost za razmnoževanje	Proizvod je razvrščen: Repr. 2(H361)
h) STOT - enkratna izpostavljenost	Ni klasificirano Na podlagi razpoložljivih podatkov merila za razvrstitev niso izpolnjena.
i) STOT - ponavljajoča se izpostavljenost	Proizvod je razvrščen: STOT RE 2(H373)
j) nevarnost pri vdihavanju	Ni klasificirano Na podlagi razpoložljivih podatkov merila za razvrstitev niso izpolnjena.

Toksikološki podatki glavnih snovi, ki jih najdemo v izdelku:

m-phenylenebis(methylamine)

CAS: 1477-55-0 a) akutna strupenost ATE - Oralno: 500 mg/kg tt
ATE - Vdihavanje (Prahom/meglice): 1.5 mg/l
LD50 Koža Podgana > 3100 mg/kg
LD50 Oralno Podgana 930 mg/kg
LC50 Vdihavanje aerosola Podgana 1.34 mg/l 4h

benzil alkohol

CAS: 100-51-6 a) akutna strupenost ATE - Oralno: 1200 mg/kg tt
LD50 Oralno Podgana 1620 mg/kg

3-aminometil-3,5,5-trimetilcikloheksilamin

CAS: 2855-13-2 a) akutna strupenost ATE - Oralno: 1030 mg/kg tt
LC50 Vdihavanje aerosola Podgana > 5.01 mg/l 4h
LD50 Koža Podgana > 2000 mg/kg tt

2-piperazin-1-iletilamin

CAS: 140-31-8 a) akutna strupenost ATE - Oralno: 500 mg/kg tt
LD50 Koža Zajec 866 mg/kg

3-aminopropiltrietoksisilan

CAS: 919-30-2 a) akutna strupenost ATE - Oralno: 500 mg/kg tt
LD50 Oralno Podgana 1780 mg/kg
LD50 Koža Zajec 4000 mg/kg
LC50 Vdihavanje aerosola Podgana > 7.35 mg/l

11.2 Podatki o drugih nevarnostih**Lastnosti endokrinih motilcev:**

Ni endokrinih motilcev v koncentraciji > = 0,1%.

ODDELEK 12: Ekološki podatki

Uporabljajte v skladu z dobrimi delovnimi navadami, izogibajte se odlaganju izdelka v okolju.

12.1 Strupenost

Ekotoksikološki podatki:

Škodljivo za vodne organizme, z dolgotrajnimi učinki.

Ekotoksikoloških lastnosti izdelka

Proizvod je razvrščen: Aquatic Chronic 3(H412)

Seznam sestavin z ekotoksikološkimi lastnostmi

m-phenylenebis(methylamine)

CAS: 1477-55-0 a) akutna strupenost za vodno okolje: LC50 Riba 87.6 mg/l 96h
a) akutna strupenost za vodno okolje: EC50 Alge 20.3 mg/l 72h
a) akutna strupenost za vodno okolje: EC50 Vodna bolha 15.2 mg/l 48h
b) kronična strupenost za vodno okolje: NOEC Vodna bolha 4.7 mg/l 21d
b) kronična strupenost za vodno okolje: NOEC Alge 10.5 mg/l 72h

benzil alkohol

CAS: 100-51-6 a) akutna strupenost za vodno okolje: LC50 Riba 460 mg/l 96h
a) akutna strupenost za vodno okolje: EC50 Vodna bolha 230 mg/l 48h
a) akutna strupenost za vodno okolje: EC50 Alge 770 mg/l 72h
b) kronična strupenost za vodno okolje: NOEC Vodna bolha 51 mg/l 21d
b) kronična strupenost za vodno okolje: NOEC Alge 310 mg/l 72h

3-aminometil-3,5,5-trimetilcikloheksilamin

CAS: 2855-13-2 a) akutna strupenost za vodno okolje: LC50 Riba 110 mg/l 96h
a) akutna strupenost za vodno okolje: EC50 Vodna bolha 23 mg/l 48h
a) akutna strupenost za vodno okolje: EC50 Alge > 50 mg/l 72h
b) kronična strupenost za vodno okolje: NOEC Vodna bolha 3 mg/l 21d

2-piperazin-1-iletilamin

CAS: 140-31-8 a) akutna strupenost za vodno okolje: LC50 Riba 2190 mg/l 96h
a) akutna strupenost za vodno okolje: EC50 Vodna bolha 58 mg/l 48h
a) akutna strupenost za vodno okolje: EC50 Alge > 1000 mg/l 72h

3-aminopropiltrioksisilan

CAS: 919-30-2 a) akutna strupenost za vodno okolje: LC50 Riba > 934 mg/l 96h
a) akutna strupenost za vodno okolje: EC50 Vodna bolha 331 mg/l 48h
a) akutna strupenost za vodno okolje: EC50 Alge 603 mg/l 72h

12.2 Obstočnost in razgradljivost

m-phenylenebis(methylamine)

CAS: 1477-55-0 Ni hitro razgradljivo

benzil alkohol

CAS: 100-51-6 Hitro razgradljivo

3-aminometil-3,5,5-trimetilcikloheksilamin

CAS: 2855-13-2 Ni hitro razgradljivo

3-aminopropiltrioksisilan

CAS: 919-30-2 Ni hitro razgradljivo

12.3 Zmožnost kopičenja v organizmih

ni znano

12.4 Mobilnost v tleh

ni znano

12.5 Rezultati ocene PBT in vPvB

Na podlagi razpoložljivih podatkov, preparat ne vsebuje snovi PBT/vPvB v procentu \geq 0.1%.

12.6 Lastnosti endokrinih motilcev

Ni endokrinih motilcev v koncentraciji \geq 0,1%.

12.7 Drugi škodljivi učinki

ni znano

ODDELEK 13: Odstranjevanje

13.1 Metode ravnanja z odpadki

Če je mogoče, predelajte. Pošljite v usposobljena odlagališča ali v zažig pod kontroliranimi pogoji. Ravnajte se po lokalnih in državnih normah.

Ne dopustite, da pride v kanalizacijo ali vodne poti.

Odstraniti posode, ki jih kontaminira izdelka v skladu z lokalnimi ali nacionalnimi predpisi.

Ko izdelku poteče življenjska doba, ga odstranite v skladu z veljavno zakonodajo.

ODDELEK 14: Podatki o prevozu



14.1 Številka ZN in številka ID

2735

14.2 Pravilno odpremno ime ZN

ADR-uradno ime blaga: TEKOČI AMINI, JEDKI, N.D.R. (m-phenylenebis(methylamine) - reakcijski produkti formaldehid in 4-nonilfenol in trietilentetramin in 2-piperazin-1-iletilamin)

IATA-uradno ime blaga: AMINES, LIQUID, CORROSIVE, N.O.S. POLYAMINES, LIQUID, CORROSIVE, N.O.S. (m-phenylenebis(methylamine) - reakcijski produkti formaldehid in 4-nonilfenol in trietilentetramin in 2-piperazin-1-iletilamin)

IMDG-uradno ime blaga: AMINES, LIQUID, CORROSIVE, N.O.S. POLYAMINES, LIQUID, CORROSIVE, N.O.S. (m-phenylenebis(methylamine) - reakcijski produkti formaldehid in 4-nonilfenol in trietilentetramin in 2-piperazin-1-iletilamin)

14.3 Razredi nevarnosti prevoza

ADR-Razred: 8

IATA-razred: 8

IMDG-razred: 8

14.4 Skupina embalaže

ADR-embalažna skupina: III

IATA-embalažna skupina: III

IMDG-embalažna skupina: III

14.5 Nevarnosti za okolje

Onesnaževalec morja: Ne

Onesnažuje okolje po: Ne

IMDG-EMS: F-A, S-B

14.6 Posebni previdnostni ukrepi za uporabnika

Cestni in železniški transport (ADR-RID):

ADR-nalepka nevarnosti: 8

ADR - Identifikacijska številka nevarnosti: 80

ADR-posebni ukrepi: 274

ADR-Pravilnik o cestnem prevozu nevarnega blaga:

Zračni transport (IATA):

IATA-potniška letala: 852

IATA-tovorna letala: 856

IATA-nalepka: 8

IATA-dodatne nevarnosti: -

IATA-Erg: 8L

IATA-posebni ukrepi: A3 A803

Morski transport (IMDG):

IMDG-Zlaganje in ravnanje: Category A

IMDG-Segregacija: SG35 SGG18

IMDG-dodatne nevarnosti: -

IMDG-posebni ukrepi: 223 274

14.7 Pomorski prevoz v razsutem stanju v skladu z instrumenti IMO

ni znano

ODDELEK 15: Zakonsko predpisani podatki

15.1 Predpisi/zakonodaja o zdravju, varnosti in okolju, specifični za snov ali zmes

Dir. 98/24/ES (Varovanje delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu)

Dir. 2000/39/ES (mejne vrednosti za poklicno izpostavljenost)

Direktiva 2010/75/EU

Uredba (ES) št. 1907/2006 (REACH)

Uredba (ES) št. 1272/2008 (CLP)

Uredba (ES) št. 790/2009 (1. ATP CLP) in (EU) št. 758/2013

Uredba (EU) 2020/878

Uredba (EU) št. 286/2011 (2. ATP CLP)

Uredba (EU) št. 618/2012 (3. ATP CLP)

Uredba (EU) št. 487/2013 (4. ATP CLP)

Uredba (EU) št. 944/2013 (5. ATP CLP)

Uredba (EU) št. 605/2014 (6. ATP CLP)

Uredba (EU) 2015/1221 (7. ATP CLP)

Uredba (EU) 2016/918 (8. ATP CLP)

Uredba (EU) 2016/1179 (9. ATP CLP)

Uredba (EU) 2017/776 (10. ATP CLP)

Uredba (EU) 2018/669 (11. ATP CLP)

Uredba (EU) 2018/1480 (13. ATP CLP)

Uredba (EU) 2019/521 (12. ATP CLP)

Uredba (EU) 2020/217 (14. ATP CLP)

Uredba (EU) 2020/1182 (15. ATP CLP)

Uredba (EU) 2021/643 (16. ATP CLP)

Uredba (EU) 2021/849 (17. ATP CLP)

Uredba (EU) 2022/692 (18. ATP CLP)

Uredba (EU) št. 2023/1434 (19. ATP CLP)

Uredba (EU) št. 2023/1435 (20. ATP CLP)
Uredba (EU) št. 2024/197 (21. ATP CLP)
Omejitve, povezane z izdelkom ali vsebovanimi snovmi, v skladu s Prilogo XVII Uredbe (ES) 1907/2006 (REACH) in poznejše spremembe:
Obmedzenia vo vzťahu s výrobkom: 3
Obmedzenia vo vzťahu s obsiahnutými látkami: 75

Določbe v zvezi z direktivo EU 2012/18 (Seveso III)

Nobena

Uredba (EU) št. 649/2012 (uredba PIC)

Snovi niso navedene

Nemški razred nevarnosti za vodo.

Razred 3: izjemno nevarna.

SVHC snovi:

Na podlagi razpoložljivih podatkov, preparat ne vsebuje snovi SVHC v procentu ≥ 0.1%.

15.2 Ocena kemijske varnosti

Ocena kemijske varnosti ni bila opravljena za mešanice

ODDELEK 16: Drugi podatki

Številka	Opis
EUH071	Jedko za dihalne poti.
H302	Zdravju škodljivo pri zaužitju.
H311	Strupeno v stiku s kožo.
H314	Povzroča hude opekline kože in poškodbe oči.
H317	Lahko povzroči alergijski odziv kože.
H318	Povzroča hude poškodbe oči.
H319	Povzroča hudo draženje oči.
H332	Zdravju škodljivo pri vdihavanju.
H361fd	Sum škodljivosti za plodnost. Sum škodljivosti za nerojenega otroka.
H372	V primeru dolgotrajnega ali ponovljenega vdihavanja povzroča poškodbe notranjih organov.
H373	Lahko škoduje organom pri dolgotrajni ali ponavljajoči se izpostavljenosti.
H412	Škodljivo za vodne organizme, z dolgotrajnimi učinki.

Številka	Razred in kategorija nevarnosti	Opis
3.1/3/Dermal	Acute Tox. 3	Akutna strupenost (dermalno), Kategorija 3
3.1/4/Inhal	Acute Tox. 4	Akutna strupenost (pri vdihavanju), Kategorija 4
3.1/4/Oral	Acute Tox. 4	Akutna strupenost (oralno), Kategorija 4
3.2/1B	Skin Corr. 1B	Jedkost za kožo, Kategorija 1B
3.2/1C	Skin Corr. 1C	Jedkost za kožo, Kategorija 1C
3.3/1	Eye Dam. 1	Hude poškodbe oči, Kategorija 1
3.3/2	Eye Irrit. 2	Draženje oči, Kategorija 2
3.4.2/1	Skin Sens. 1	Preobčutljivost kože, Kategorija 1
3.4.2/1A	Skin Sens. 1A	Preobčutljivost kože, Kategorija 1A
3.4.2/1B	Skin Sens. 1B	Preobčutljivost kože, Kategorija 1B
3.7/2	Repr. 2	Strupenost za razmnoževanje, Kategorija 2
3.9/1	STOT RE 1	Specifična strupenost za ciljne organe (STOT) – ponavljajoča se izpostavljenost, Kategorija 1
3.9/2	STOT RE 2	Specifična strupenost za ciljne organe (STOT) – ponavljajoča se izpostavljenost, Kategorija 2
4.1/C3	Aquatic Chronic 3	Kronično (dolgotrajno) nevarnost za vodno okolje, Kategorija 3

Razvrstitev in postopek, uporabljen za izpeljavo razvrstitve za zmesi v skladu z Uredbo (ES) 1272/2008 [uredba CLP]:

Razvrstitev v skladu z Uredbo (ES) št. 1272/2008	Postopek razvrščanja
Acute Tox. 4, H302	metoda izračuna
Acute Tox. 4, H332	metoda izračuna

Skin Corr. 1C, H314	metoda izračuna
Skin Sens. 1, H317	metoda izračuna
Repr. 2, H361fd	metoda izračuna
STOT RE 2, H373	metoda izračuna
Aquatic Chronic 3, H412	metoda izračuna

Ta dokument je pripravila pristojna oseba, ki je ustrezno usposobljena

Glavni bibliografski viri:

ECDIN – Informacijska mreža za okoljske podatke za kemikalije – Skupno raziskovalno središče, Komisija Evropskih skupnosti
 SAX – NEVARNE LASTNOSTI INDUSTRIJSKIH MATERIALOV – 8. izdaja – Van Nostrand Reinold
 Varnostni listi dobaviteljev surovin.

Predstavljene informacije se nanašajo na naše znanje v zgoraj navedenem datumu. Nanašajo se zgolj na omenjeni izdelek in ne predstavljajo garancije za posebno kakovost.

Uporabnik je dolžan preveriti pravilnost in popolnost teh informacij glede na svojo specifično uporabo.

Ta list razveljavlja in nadomešča vsako predhodno izdajo

Legenda okrajšav in kratic, uporabljenih v varnostnem listu:

ACGIH: Ameriška konferenca vladnih industrijskih higienikov
 ADR: Evropski sporazum o mednarodnem prevozu nevarnih snovi v cestnem prometu.
 ATE: Ocena akutne strupenosti
 ATEmix: Ocena akutne strupenosti (Zmesi)
 BEI: Biološki indeks izpostavljenosti
 CAS: Chemical Abstracts Service (oddelek Ameriškega kemijskega društva).
 CAV: Center za zastupitve
 CE: Evropska skupnost
 CLP: Razvrščanje, etiketiranje, pakiranje.
 CMR: Rakotvorno, mutageno in strupeno za razmnoževanje
 COV: Hlapna organska spojina
 CSA: Ocena kemijske varnosti
 CSR: Poročilo o kemijski varnosti
 DNEL: Izpeljane vrednosti brez učinka.
 EC50: Srednja učinkovita koncentracija
 ECHA: Evropska agencija za kemikalije
 EINECS: Evropski seznam obstoječih snovi.
 ES: Scenarij izpostavljenosti
 GefStoffVO: Odlok o nevarnih snoveh, Nemčija.
 GHS: Globalno poenoten sistem razvrščanja in označevanja nevarnih kemikalij.
 IARC: Mednarodna agencija za raziskovanje raka
 IATA: Mednarodno združenje za zračni transport.
 IC50: Srednja inhibitorna koncentracija
 IMDG: Mednarodni kodeks za prevoz nevarnega blaga po morju
 LC50: Letalna koncentracija za 50 odstotkov testne populacije.
 LD50: Letalna doza za 50 odstotkov testne populacije.
 LDLo: Najnižja smrtna doza
 N.A.: Se ne uporablja
 N/A: Se ne uporablja
 N/D: Ni opredeljeno/Ni razpoložljiv
 N.D.: Ni razpoložljiv
 NIOSH: Nacionalni inštitut za varnost in zdravje pri delu
 NOAEL: Raven brez opaznih negativnih vplivov
 OSHA: Upravljanje varnosti in zdravja pri delu
 PBT: Obstojne, se kopičijo v organizmih in so strupene
 PGK: Navodila za embalažo nevarnih snovi
 PNEC: Predvidena koncentracija brez učinka.
 PSG: Potniki
 RID: Pravilnik o mednarodnem prevozu nevarnega blaga po železnici.
 STEL: Meja za kratkotrajno izpostavljenost.
 STOT: Specifično strupeno za ciljne organe.
 TLV: Mejna vrednost izpostavljenosti.
 TLV-TWA: Mejna vrednost izpostavljenosti v časovnem obdobju po 8 ur dnevno (ACGIH standard).
 vPvB: Telo obstojno, se zelo lahko kopiči v organizmih.
 WGK: Nemški razred nevarnosti za vodo.

Odstavki spremenjeni od prejšnje revizije:

- Varnostni list
- ODDELEK 1: Identifikacija snovi/zmesi in družbe/podjetja
- ODDELEK 2: Določitev nevarnosti
- ODDELEK 3: Sestava/podatki o sestavinah
- ODDELEK 7: Ravnanje in skladiščenje
- ODDELEK 8: Nadzor izpostavljenosti/osebna zaščita
- ODDELEK 9: Fizikalne in kemijske lastnosti
- ODDELEK 11: Toksikološki podatki
- ODDELEK 12: Ekološki podatki
- ODDELEK 14: Podatki o prevozu
- ODDELEK 15: Zakonsko predpisani podatki
- ODDELEK 16: Drugi podatki

3-aminomethyl-3,5,5-trimethylcyclohexylamine

Substance identification

Chemical Name: 3-aminomethyl-3,5,5-trimethylcyclohexylamine

CAS number: 2855-13-2

EU index number: 612-067-00-9

EINECS number: 220-666-8

ES1 Formulation or repackaging - INDUSTRIAL USES

1. TITLE SECTION

Exposure scenario name: Preparation and repackaging of substances and mixtures

Date - Version: 15/07/2020 - 1.0

Life cycle stage: Formulation or repackaging

Main user group: Industrial uses

Sector(s) of use: Industrial uses (SU3) - Large-scale production of basic chemicals (including petroleum products) (SU8) - Formulation [blending] of preparations and/or repackaging (SU10)

Contributing scenario - Environment

CS1 Wet formulation: ERC2

Contributing scenario - Worker

CS2 Use in closed systems: PROC3

CS3 Material Transfers: PROC8a

CS4 Material Transfers: PROC8b

CS5 Material Transfers: PROC9

CS6 Blend Operations: PROC5

2. CONDITIONS OF USE AFFECTING EXPOSURE

2.1. CS1 Environment Contributing Scenario: Wet Formulation (ERC2)

Environmental release categories: Formulation of mixtures (ERC2)

Product features (article)

Physical form of the product: Liquid

Vapor pressure: 1.57 Pa

Amount used, frequency and duration of use

Amounts used: Annual amount per site 2500 t

Release Type: Continuous release

Issue days: 300 days/year

Further environmental conditions:

Wet formulation

Air - minimum efficiency of: 0.25 %

Ground - minimum efficiency of: 0.01 %

Water - minimum efficiency of: 0.5 %

Measures and technical-organizational conditions

Control measures to prevent releases:

Air - minimum efficiency of: 0.25 %

Ground - minimum efficiency of: 0.01 %

Water - minimum efficiency of: 0.5 %

Conditions and measures for the municipal sewage treatment plant

Type of sewage treatment plant (STP): Municipal STP

STP effluent (m³/day): 8640

Conditions and measures for waste treatment (including the product waste)

Waste treatment: Do not spread industrial sludge on natural soils.

Other operational conditions affecting environmental exposure

Local seawater dilution factor: 100

Local fresh water dilution factor: 11

Flow rate of receiving surface water: 86400

Indoor use

2.2. CS2 Worker Contributing Scenario: Use in Closed Systems (PROC3)

Process categories: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment conditions (PROC3)

Product features (article)

Physical form of the product: Liquid

Vapor pressure: 1.57 Pa

Amount used, frequency and duration of use/exposure

Duration: 480 min

Frequency: 5 days/week

Measures and technical-organizational conditions

Technical organizational measures: For further data, see section 8 of the safety data sheet.

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

Personal protective equipment:

Wear suitable gloves, tested according to EN347.

Dermal - minimum efficiency of: 95 %

Other operational conditions affecting worker exposure

Indoor use

Ventilation Rate: Provide a basic level of general ventilation (1 to 3 air changes per hour). 90%

Body parts exposed: Palm of a hand.

Learn more about good practices. The requirements set out in the REACH Regulation Article 37(4) do not apply.

Further information on good practices: Wear waterproof clothing. Ensure regular inspection, cleaning and maintenance of machines and systems. Wear a suitable apron to avoid skin exposure.

2.3. CS3 Worker Contributing Scenario: Material Transfers (PROC8a)

Process categories: Transfer of a substance or a preparation (filling/emptying) at non-dedicated facilities (PROC8a)

Product features (article)

Physical form of the product: Liquid

Vapor pressure: 1.57 Pa

Amount used, frequency and duration of use/exposure

Duration: 240 min

Frequency: 5 days/week

Measures and technical-organizational conditions

Technical organizational measures: For further data, see section 8 of the safety data sheet.

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

Personal protective equipment: Wear suitable gloves, tested according to EN347. Dermal - minimum efficiency of: 98 %

Other operational conditions affecting worker exposure

Indoor use

Ventilation Rate: Provide a basic level of general ventilation (1 to 3 air changes per hour). 90%

Body parts exposed: Palm of a hand.

Learn more about good practices. The requirements set out in the REACH Regulation Article 37(4) do not apply.

Further information on good practices: Wear waterproof clothing. Ensure regular inspection, cleaning and maintenance of machines and systems. Wear a suitable apron to avoid skin exposure.

2.4. CS4 orker Contributing Scenario: Material Transfers (PROC8b)

Process categories: Transfer of a substance or a preparation (filling/emptying) at dedicated facilities (PROC8b)

Product features (article)

Physical form of the product: Liquid

Vapor pressure: 1.57 Pa

Amount used, frequency and duration of use/exposure

Duration: 480 min

Frequency: 5 days/week

Measures and technical-organizational conditions

Technical organizational measures: For further data, see section 8 of the safety data sheet.

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

Personal protective equipment: Wear suitable gloves, tested according to EN347.

Dermal - minimum efficiency of: 98 %

Other operational conditions affecting worker exposure

Indoor use

Ventilation Rate: Provide a basic level of general ventilation (1 to 3 air changes per hour). 97%

Body parts exposed: Palm of a hand. Possible skin contact is believed to be limited to the hands.

Learn more about good practices. The requirements set out in the REACH Regulation Article 37(4) do not apply.

Further information on good practices: Wear waterproof clothing. Ensure regular inspection, cleaning and maintenance of machines and systems. Wear a suitable apron to avoid skin exposure. Wear suitable face protection.

2.5. CS5 Worker Contributing Scenario: Material Transfers (PROC9)

Process categories: Transfer of a substance or preparation (filling/emptying) (dedicated filling line, including weighing) (PROC9)

Product features (article)

Physical form of the product: Liquid

Vapor pressure: 1.57 Pa

Amount used, frequency and duration of use/exposure

Duration: 480 min

Frequency: 5 days/week

Measures and technical-organizational conditions

Technical organizational measures: For further data, see section 8 of the safety data sheet.

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

Personal protective equipment: Wear suitable gloves, tested according to EN347.

Dermal - minimum efficiency of: 98 %

Other operational conditions affecting worker exposure

Indoor use

Ventilation Rate: Provide a basic level of general ventilation (1 to 3 air changes per hour). 90%

Body parts exposed: Palm of a hand. Possible skin contact is believed to be limited to the hands.

Learn more about good practices. The requirements set out in the REACH Regulation Article 37(4) do not apply.

Further information on good practices: Wear waterproof clothing. Ensure regular inspection, cleaning and maintenance of machines and systems. Wear a suitable apron to avoid skin exposure. Wear suitable face protection.

2.6. CS6 Worker Contributing Scenario: Mixing Operations (PROC5)

Process categories: Mixing or Blending in Batch Processes (PROC5)

Product features (article)

Physical form of the product: Liquid

Vapor pressure: 1.57 Pa

Amount used, frequency and duration of use/exposure

Duration: 480 min

Frequency: 5 days/week

Measures and technical-organizational conditions

Technical organizational measures: For further data, see section 8 of the safety data sheet.

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

Personal protective equipment: Wear suitable gloves, tested according to EN347. Dermal - minimum efficiency of: 98 %

Other operational conditions affecting worker exposure

Indoor use

Ventilation Rate: Provide a basic level of general ventilation (1 to 3 air changes per hour). 90%

Body parts exposed: Palm of a hand.

Learn more about good practices. The requirements set out in the REACH Regulation Article 37(4) do not apply.

Further information on good practices: Wear waterproof clothing. Ensure regular inspection, cleaning and maintenance of machines and systems. Wear a suitable apron to avoid skin exposure.

3. EXPOSURE ESTIMATION AND REFERENCE TO ITS SOURCE

3.1. CS1 Environment Contributing Scenario: Wet Formulation (ERC2)

Protection target	Degree of exposure	Calculation method	Risk characterization ratio (RCR)
sea water	1,025 kg/day	ECETOC TRA environment v2.0	0.81

3.2. CS2 Worker Contributing Scenario: Use in Closed Systems (PROC3)

Route of Exposure, Impact on Health, Exposure Indicator	Degree of exposure	Calculation method	Risk characterization ratio (RCR)
by inhalation, local, short-term	4,258 mg/m ³	ECETOC TRA worker v2.0	0.212

3.3. CS3 Worker Contributing Scenario: Material Transfers (PROC8a)

Route of Exposure, Impact on Health, Exposure Indicator	Degree of exposure	Calculation method	Risk characterization ratio (RCR)
by inhalation, local, short-term	14,192 mg/m ³	ECETOC TRA worker v2.0	0.706
by inhalation, systemic, short-term	14,192 mg/m ³	ECETOC TRA worker v2.0	0.706

3.4. CS4 orker Contributing Scenario: Material Transfers (PROC8b)

Route of Exposure, Impact on Health, Exposure Indicator	Degree of exposure	Calculation method	Risk characterization ratio (RCR)
by inhalation, local, short-term	2,129 mg/m ³	ECETOC TRA worker v2.0	0.106
by inhalation, systemic, short-term	2,129 mg/m ³	ECETOC TRA worker v2.0	0.106

3.5. CS5 Worker Contributing Scenario: Material Transfers (PROC9)

Route of Exposure, Impact on Health, Exposure Indicator	Degree of exposure	Calculation method	Risk characterization ratio (RCR)
by inhalation, local, short-term	7,096 mg/m ³	ECETOC TRA worker v2.0	0.353
by inhalation, systemic, short-term	7,096 mg/m ³	ECETOC TRA worker v2.0	0.353

3.6. CS6 Worker Contributing Scenario: Mixing Operations (PROC5)

Route of Exposure, Impact on Health, Exposure Indicator	Degree of exposure	Calculation method	Risk characterization ratio (RCR)
by inhalation, local, short-term	7,096 mg/m ³	ECETOC TRA worker v2.0	0.353
by inhalation, systemic, short-term	7,096 mg/m ³	ECETOC TRA worker v2.0	0.353

4. GUIDANCE FOR DOWNSTREAM USERS TO ASSESS WHETHER THEY COMPLY WITH THE LIMITS SET BY THE EXPOSURE SCENARIO

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.

ES2 Formulation or repackaging - PROFESSIONAL USES

1. TITLE SECTION

Exposure scenario name: Preparation and repackaging of substances and mixtures

Date - Version: 10/03/2020 - 1.0

Life cycle stage: Formulation or repackaging

Main user group: Professional uses

Sector(s) of use: Manufacture of bulk, large scale chemicals (including petroleum products) (SU8) - Formulation [mixing] of preparations and/or re-packaging (SU10) - Professional uses (SU22)

Contributing scenario - Environment

CS1 Wet formulation: ERC2

Contributing scenario - Worker

CS2 Use in closed systems: PROC3

CS3 Material Transfers: PROC8a

CS3 Material Transfers: PROC8b

CS3 Material Transfers: PROC9

CS6 Blend Operations: PROC5

2. CONDITIONS OF USE AFFECTING EXPOSURE

2.2. CS1 Environment Contributing Scenario: Wet Formulation (ERC2)

Environmental release categories: Formulation of mixtures (ERC2)

Product features (article)

Physical form of the product: Liquid

Vapor pressure: 1.57 Pa

Amount used, frequency and duration of use

Amounts used: Annual amount per site 2500 t

Release Type: Continuous release

Issue days: 300 days/year

Further environmental conditions:

Wet formulation

Air - minimum efficiency of: 0.25 %

Ground - minimum efficiency of: 0.01 %

Water - minimum efficiency of: 0.5 %

Measures and technical-organizational conditions

Control measures to prevent releases:

Air - minimum efficiency of: 0.25 %

Ground - minimum efficiency of: 0.01 %

Water - minimum efficiency of: 0.5 %

Conditions and measures for the municipal sewage treatment plant

Type of sewage treatment plant (STP): Municipal STP

STP effluent (m³/day): 8640

Conditions and measures for waste treatment (including the product waste)

Waste treatment: Do not spread industrial sludge on natural soils.

Other operational conditions affecting environmental exposure

Local seawater dilution factor: 100

Local fresh water dilution factor: 11

Flow rate of receiving surface water: 86400

Indoor use

2.2. CS2 Worker Contributing Scenario: Use in Closed Systems (PROC3)

Process categories: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment conditions (PROC3)

Product features (article)

Physical form of the product: Liquid

Vapor pressure: 1.57 Pa

Amount used, frequency and duration of use/exposure

Duration: 480 min

Frequency: 5 days/week

Measures and technical-organizational conditions

Technical organizational measures: For further data, see section 8 of the safety data sheet.

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

Personal protective equipment: Wear suitable gloves, tested according to EN347. Dermal - minimum efficiency of: 95 %

Other operational conditions affecting worker exposure

Indoor use

Ventilation Rate: Provide a basic level of general ventilation (1 to 3 air changes per hour). 90%

Body parts exposed: Palm of a hand.

Learn more about good practices. The requirements set out in the REACH Regulation Article 37(4) do not apply.

Further information on good practices: Wear waterproof clothing. Ensure regular inspection, cleaning and maintenance of machines and systems. Wear a suitable apron to avoid skin exposure.

2.3. CS3 Worker Contributing Scenario: Material Transfers (PROC8a)

Process categories: Transfer of a substance or a preparation (filling/emptying) at non-dedicated facilities (PROC8a)

Product features (article)

Physical form of the product: Liquid

Vapor pressure: 1.57 Pa

Amount used, frequency and duration of use/exposure

Duration: 240 min

Frequency: 5 days/week

Measures and technical-organizational conditions

Technical organizational measures: For further data, see section 8 of the safety data sheet.

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

Personal protective equipment: Wear suitable gloves, tested according to EN347. Dermal - minimum efficiency of: 98 %

Other operational conditions affecting worker exposure

Indoor use

Ventilation Rate: Provide a basic level of general ventilation (1 to 3 air changes per hour). 90%

Body parts exposed: Palm of a hand.

Learn more about good practices. The requirements set out in the REACH Regulation Article 37(4) do not apply.

Further information on good practices: Wear waterproof clothing. Ensure regular inspection, cleaning and maintenance of machines and systems. Wear a suitable apron to avoid skin exposure.

2.4. CS4 orker Contributing Scenario: Material Transfers (PROC8b)

Process categories: Transfer of a substance or a preparation (filling/emptying) at dedicated facilities (PROC8b)

Product features (article)

Physical form of the product: Liquid

Vapor pressure: 1.57 Pa

Amount used, frequency and duration of use/exposure

Duration: 240 min

Frequency: 5 days/week

Measures and technical-organizational conditions

Technical organizational measures: For further data, see section 8 of the safety data sheet.

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

Personal protective equipment: Wear suitable gloves, tested according to EN347. Dermal - minimum efficiency of: 98 %

Other operational conditions affecting worker exposure

Indoor use

Ventilation Rate: Provide a basic level of general ventilation (1 to 3 air changes per hour). 90%

Body parts exposed: Palm of a hand. Possible skin contact is believed to be limited to the hands.

Learn more about good practices. The requirements set out in the REACH Regulation Article 37(4) do not apply.

Further information on good practices: Wear waterproof clothing. Ensure regular inspection, cleaning and maintenance of machines and systems. Wear a suitable apron to avoid skin exposure. Wear suitable face protection.

2.5. CS5 Worker Contributing Scenario: Material Transfers (PROC9)

Process categories: Transfer of a substance or preparation (filling/emptying) (dedicated filling line, including weighing) (PROC9)

Product features (article)

Physical form of the product: Liquid

Vapor pressure: 1.57 Pa

Amount used, frequency and duration of use/exposure

Duration: 240 min

Frequency: 5 days/week

Measures and technical-organizational conditions

Technical organizational measures: For further data, see section 8 of the safety data sheet.

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

Personal protective equipment: Wear suitable gloves, tested according to EN347. Dermal - minimum efficiency of: 98 %

Other operational conditions affecting worker exposure

Indoor use

Ventilation Rate: Provide a basic level of general ventilation (1 to 3 air changes per hour). 90%

Body parts exposed: Palm of a hand. Possible skin contact is believed to be limited to the hands.

Learn more about good practices. The requirements set out in the REACH Regulation Article 37(4) do not apply.

Further information on good practices: Wear waterproof clothing. Ensure regular inspection, cleaning and maintenance of machines and systems. Wear a suitable apron to avoid skin exposure. Wear suitable face protection.

2.6. CS6 Worker Contributing Scenario: Mixing Operations (PROC5)

Process categories: Mixing or Blending in Batch Processes (PROC5)

Product features (article)

Physical form of the product: Liquid

Vapor pressure: 1.57 Pa

Amount used, frequency and duration of use/exposure

Duration: 60 min

Frequency: 5 days/week

Measures and technical-organizational conditions

Technical organizational measures: For further data, see section 8 of the safety data sheet.

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

Personal protective equipment: Wear suitable gloves, tested according to EN347. Dermal - minimum efficiency of: 98 %

Other operational conditions affecting worker exposure

Indoor use

Ventilation Rate: Provide a basic level of general ventilation (1 to 3 air changes per hour). 90%

Body parts exposed: Palm of a hand. Possible skin contact is believed to be limited to the hands.

Learn more about good practices. The requirements set out in the REACH Regulation Article 37(4) do not apply.

Further information on good practices: Wear waterproof clothing. Ensure regular inspection, cleaning and maintenance of machines and systems. Wear a suitable apron to avoid skin exposure. Wear suitable face protection.

3. EXPOSURE ESTIMATION AND REFERENCE TO ITS SOURCE

3.1. CS1 Environment Contributing Scenario: Wet Formulation (ERC2)

Protection target	Degree of exposure	Calculation method	Risk characterization ratio (RCR)
sea water	1,025 kg/day	ECETOC TRA environment v2.0	0.81

3.2. CS2 Worker Contributing Scenario: Use in Closed Systems (PROC3)

Route of Exposure, Impact on Health, Exposure Indicator	Degree of exposure	Calculation method	Risk characterization ratio (RCR)
by inhalation, local, short-term	8,515 mg/m ³	ECETOC TRA worker v2.0	0.424

3.3. CS3 Worker Contributing Scenario: Material Transfers (PROC8a)

Route of Exposure, Impact on Health, Exposure Indicator	Degree of exposure	Calculation method	Risk characterization ratio (RCR)
by inhalation, local, short-term	7,096 mg/m ³	ECETOC TRA worker v2.0	0.353
by inhalation, systemic, short-term	7,096 mg/m ³	ECETOC TRA worker v2.0	0.353

3.4. CS4 orker Contributing Scenario: Material Transfers (PROC8b)

Route of Exposure, Impact on Health, Exposure Indicator	Degree of exposure	Calculation method	Risk characterization ratio (RCR)
by inhalation, local, short-term	14,192 mg/m ³	ECETOC TRA worker v2.0	0.706
by inhalation, systemic, short-term	14,192 mg/m ³	ECETOC TRA worker v2.0	0.706

3.5. CS5 Worker Contributing Scenario: Material Transfers (PROC9)

Route of Exposure, Impact on Health, Exposure Indicator	Degree of exposure	Calculation method	Risk characterization ratio (RCR)
by inhalation, local, short-term	14,192 mg/m ³	ECETOC TRA worker v2.0	0.706
by inhalation, systemic, short-term	14,192 mg/m ³	ECETOC TRA worker v2.0	0.706

3.6. CS6 Worker Contributing Scenario: Mixing Operations (PROC5)

Route of Exposure, Impact on Health, Exposure Indicator	Degree of exposure	Calculation method	Risk characterization ratio (RCR)
by inhalation, local, short-term	14,192 mg/m ³	ECETOC TRA worker v2.0	0.706

4. GUIDANCE FOR DOWNSTREAM USERS TO ASSESS WHETHER THEY COMPLY WITH THE LIMITS SET BY THE EXPOSURE SCENARIO

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.

Benzyl alcohol

Substance identification

Chemical Name: Benzyl alcohol

CAS number: 100-51-6

Date: 07/12/2012

INDUSTRIAL USE

Exposure scenario for industrial use in adhesives, sealants, coatings and paints, fillers, finger paints, metallic and non-metallic surface treatment products, inks and toners (PC1, PC9a, PC9b, PC9c, PC14, PC15, PC18)

1. TITLE

Systematic title based on the use descriptor: SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Processes, activities covered:

Mixing or dilution in batch processes

Processing by compression/pelletisation, calendaring or use during foam production

Transfer operations from/to large or small containers

Treatment of objects by brush/roller application, spraying or immersion/pouring

Lubrication at high energy conditions

Use as a laboratory agent

Handling of substances bound in materials/articles

Evaluation method:

ECETOC TRA (April 2010), EUSES (v.2.1)

2. OPERATING CONDITIONS AND RISK MANAGEMENT MEASURES

Process categories for human health and environmental release categories for exposure assessment:

PC1: PROC5, 7, 8a, 8b, 9, 10, 12, 13, 14 spERC ESVO 5 (related to ERC4)

PC9a/b/c: PROC5, 7, 8a, 8b, 9, 10, 13 spERC ESVO 5 (related to ERC4)

PC14: PROC5, 8a, 8b, 9, 15, 23, 24, 25 spERC ESVO 5 (related to ERC4)

PC15: PROC5, 8a, 8b, 9, 15 spERC ESVO 5 (related to ERC4)

PC18: PROC7, 8a, 8b, 9, 10, 13 spERC ESVO 5 (related to ERC4)

2.1 EXPOSURE SCENARIO CONTROLLING WORKER EXPOSURE FOR PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC12, PROC13, PROC14, PROC15

Product features

Concentration ≤ 40%

Physical state: liquid

Quantity used

Not applicable

Frequency and duration of use/exposure

Duration of exposure per day: 8h (full shift, indoors)

Duration of exposure per year: 230 days

Human factors not influenced by risk management

Breathing volume in the conditions of use: 10 m³/8h-day (light activity)

Body weight: 70kg (worker)

Other operational conditions affecting worker exposure

Internal use

Use at room temperature

Technical conditions and measures to control dispersion from source to the worker

Local vapor ventilation (efficiency > 90 %) or other adequate ventilation required

Organizational measures to prevent/limit releases, dispersion and exposure

Only properly trained and authorized personnel can handle the substance. Substance handling procedures must be well documented and controlled.

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

PROC7:

Respiratory protection recommended (95% efficiency) as described in section 8.

Wear safety goggles as described in section 8.

Wear protective clothing as described in section 8.

2.2 EXPOSURE SCENARIO CONTROLLING WORKER EXPOSURE FOR PROC23, PROC24, PROC25

Product features

Concentration ≤ 40%

Physical state: liquid

Quantity used

Not applicable

Frequency and duration of use/exposure

Duration of exposure per day: 8h (full shift, indoors and outdoors)

Duration of exposure per year: 230 days

Human factors not influenced by risk management

Breathing volume in the conditions of use: 10 m³/8h-day (light activity)

Body weight: 70kg (worker)

Other operational conditions affecting worker exposure

Indoor use.

Use at room temperature

Technical conditions and measures to control dispersion from source to the worker

Local vapor ventilation (efficiency > 90 %) or other adequate ventilation required.

Organizational measures to prevent/limit releases, dispersion and exposure

Only properly trained and authorized personnel can handle the substance. Substance handling procedures must be well documented and controlled.

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

Wear safety goggles as described in section 8.

Wear protective clothing as described in section 8.

2.3 EXPOSURE SCENARIO CONTROLLING ENVIRONMENTAL EXPOSURE FOR SPERC ESVOC 5 - RELATED TO ERC4

Product features

Not relevant

Quantity used

Number of sites: > 1

Yearly amount used in the region: PC 1, 9a, 9b, 9c, 14, 15, 18: 412 to: 570 to (10 % rule applies)

Frequency and duration of use

spERC ESVOC 5 (related to ERC4): 300 days/year

Environmental factors not influenced by risk management

Local fresh water dilution factor: 10

Receiving surface water flow: 18,000 m³/d

Local seawater dilution factor 100

Other operational conditions affecting environmental exposure

Indoor and outdoor use

Technical conditions and measures at process level (source) to prevent release

spERC ESVOC 5 (related to ERC4):

Fraction of tonnage released to air: 9,8 %

Fraction of tonnage released to wastewater: 2 %

Fraction of tonnage released into industrial ground: 0 %

Local technical conditions and measures to reduce and limit discharges, atmospheric emissions and soil release

Waste water must be sent to a dedicated treatment plant or treated with other suitable techniques. Floors should be waterproof and resistant to liquids.

Organizational measures to prevent/limit release from site

Only properly trained and authorized personnel can handle the substance. Substance handling procedures must be well documented and controlled.

Conditions and measures for the domestic sewage treatment plant

Dimensions of wastewater treatment plant: 2000 m³/d (removal rate: 87.4 %)

Conditions and measures for external treatment of waste for disposal

No specific measures. For general conditions and measures, see section 13.

Conditions and measures for external recovery of waste

No specific measures. For general conditions and measures, see section 13.

3. EXPOSURE ESTIMATION AND REFERENCE TO ITS SOURCE

Workers

Exposure assessment (human):

ECETOC TRA model (April 2010 version). Dermal exposure estimates of ECETOC TRA have been corrected for concentration.

Exposure estimation:

Individual and combined (skin and inhalation) exposure values are below the DNELs (RCR ratios < 1).

Environment

Exposure assessment (environment):

EUSES 2.1: ERC4 modified with ESVOC 5 (ESVOC SPERC 4.3a.v1)

Exposure estimation:

The predicted exposure concentrations for air, water and soil are lower than the derived PNECs, giving an RCR < 1.

4. GUIDANCE FOR DOWNSTREAM USERS TO ASSESS WHETHER THEY COMPLY WITH THE LIMITS SET BY THE EXPOSURE SCENARIO

Environment:

Under the conditions listed above the process is considered safe. Direct release to water and soil should be avoided, air emissions should be minimised. Other conditions should be considered only when adequate measurements or calculations demonstrate that the RCR remains < 1.

Health:

Under the conditions listed above the process is considered safe. Other conditions should be considered only when adequate measurements or calculations demonstrate that the RCR remains < 1.

Further good practice advice beyond the REACH CSA

Environment: Not applicable

Health: On possible contact with the product (sampling, use, spills, product leaks, cleaning): wear protective clothing. Wear protective gloves and safety goggles. See section 8 for information on appropriate personal protective equipment.

PROFESSIONAL USE

Exposure scenario for professional uses of benzyl alcohol consisting of mixing/loading and charging/discharging, roller, brush, spray or dip application (PC0, PC1, PC09a, 9b, 9c, PC14, PC15, PC18, PC21, PC26, PC31, PC32).

1. TITLE

Systematic title based on the use descriptor: SU22 - Professional uses: Generalized use

Processes, activities covered:

Mixing or dilution in batch processes BY HAND

Transfer operations from/to large or small containers

Treatment of objects by brush/roller application, spraying or immersion/pouring

Hand mixing with intimate contact and only PSD available

Handling of substances bound in materials/articles

Evaluation method:

ECETOC TRA (April 2010), EUSES (v.2.1)

2. OPERATING CONDITIONS AND RISK MANAGEMENT MEASURES

Process categories for human health and environmental release categories for exposure assessment:

PC0: PROC5, 8a, 8b, 9, 10, 11, 13, 19 - ERC8a, 8d

PC1: PROC5, 8a, 8b, 9, 10, 11, 13, 19 - ERC8a, 8d

PC9a, 9b, 9c: PROC5, 8a, 8b, 9, 10, 11, 13, 19 - ERC8a, 8d

PC14: PROC8a, 8b, 9, 10, 11, 13, 19, 23, 24, 25 - ERC8a, 8d

PC15: PROC8a, 8b, 9, 10, 11, 13, 19 - ERC8a, 8d

PC18: PROC5, 8a, 8b, 10, 11, 13, 19 - ERC8a, 8d

PC21: PROC8a, 8b, 15 - ERC8a, 8d

PC26: PROC5, 6, 8a, 8b, 11, 13, 14, 19, 21 - ERC8a, 8d

PC30: PROC8a, 8b - ERC8a, 8d

PC31: PROC8b, 10, 11 - ERC8a, 8d

PC32: PROC8a, 8b, 9, 10, 11 - ERC8a, 8d

Number of sites: > 1

2.1 EXPOSURE SCENARIO CONTROLLING WORKER EXPOSURE FOR PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC12, PROC13, PROC14, PROC15

Product features

Concentration ≤ 40%

Physical state: liquid

Quantity used

Not applicable

Frequency and duration of use/exposure

Duration of exposure per day: 8h (full shift, indoors and outdoors)

Duration of exposure per year: 230 days

Human factors not influenced by risk management

Breathing volume in the conditions of use: 10 m³/8h-day (light activity)

Body weight: 70kg (worker)

Other operational conditions affecting worker exposure

Internal use

Use at room temperature

Technical conditions and measures to control dispersion from source to the worker

No special measures are required.

Organizational measures to prevent/limit releases, dispersion and exposure

Only properly trained and authorized personnel can handle the substance. Substance handling procedures must be well documented and controlled.

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

Personal protection:

PROC8b, PROC9, PROC14, PROC15: concentration ≤ 40 %: no RMM required.

PROC5, PROC8a, PROC13: > 25 % - ≤ 40 %: gloves (90 % efficiency) are required as described in section 8.

PROC6: > 5 % - ≤ 40 %: gloves (90 % efficiency) are required as described in section 8.

PROC10: < 5 % (indoor and outdoor environment): No RMMs required.

> 5 - ≤ 40 % (indoor and outdoor environment): gloves (90 % efficiency) are required as described in point 8.

Wear safety goggles as described in section 8.

Wear protective clothing as described in section 8.

2.2 EXPOSURE SCENARIO CONTROLLING WORKER EXPOSURE FOR PROC11

Product features

Concentration ≤ 40 %

Physical state: liquid

Quantity used

Not applicable

Frequency and duration of use/exposure

Duration of exposure per day: 8h (full shift, indoors and outdoors)

Duration of exposure per year: 230 days

Human factors not influenced by risk management

Breathing volume in the conditions of use: 10 m³/8h-day (light activity)

Body weight: 70kg (worker)

Other operational conditions affecting worker exposure

Indoor and outdoor use

Use at room temperature

Technical conditions and measures to control dispersion from source to the worker

No special measures are required.

Organizational measures to prevent/limit releases, dispersion and exposure

Only properly trained and authorized personnel can handle the substance. Substance handling procedures must be well documented and controlled.

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

Personal protection:

≤ 5 % (indoor and outdoor environment): Respiratory protection (95 % efficiency) required as described in section 8.

> 5 % ≤ 40 % (indoor and outdoor environment): Respiratory protection (95 % efficiency) and gloves (90 % efficiency) required as described in section 8.

Wear safety goggles as described in section 8.

Wear protective clothing as described in section 8.

2.3 EXPOSURE SCENARIO CONTROLLING WORKER EXPOSURE FOR PROC19

Product features

Concentration ≤ 40 %

Physical state: liquid

Quantity used

Not applicable

Frequency and duration of use/exposure

Duration of exposure per day (concentration ≤ 25 %): 8 hours (indoors and outdoors)

Duration of exposure per day (concentration $>25\% \leq 40\%$): 4 hours (indoors and outdoors)

Duration of exposure per year: 230 days

Human factors not influenced by risk management

Breathing volume in the conditions of use: 10 m³/8h-day (light activity)

Body weight: 70kg (worker)

Other operational conditions affecting worker exposure

Indoor and outdoor use

Use at room temperature

Technical conditions and measures to control dispersion from source to the worker

No special measures are required.

Organizational measures to prevent/limit releases, dispersion and exposure

Only properly trained and authorized personnel can handle the substance. Substance handling procedures must be well documented and controlled.

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

Personal protection:

> 1 % (indoor): gloves (90 % efficiency) are required as described in section 8.

> 5% - 40% (outdoors): gloves (90 % efficiency) are required as described in section 8.

Wear safety goggles as described in section 8.

Wear protective clothing as described in section 8.

2.4 EXPOSURE SCENARIO CONTROLLING ENVIRONMENTAL EXPOSURE FOR ERC8a, ERC8d

Product features

Not relevant

Quantity used

Yearly amount used in the region: the 10% rule applies

ERC8a PC0, 1, 9a, 9b, 9c, 14, 15, 18, 21, 26, 30, 31, 32, 34, 35: 1,785t

ERC8d PC0, 1, 9a, 9b, 9c, 14, 15, 18, 21, 26, 31, 32, 34, 35: 1,775t

Fraction of main local source: 0.002 (default)

Issue days per site: 365 days/year (default)

Frequency and duration of use

Continuous release: 365 days/year

Environmental factors not influenced by risk management

Local fresh water dilution factor: 10

Receiving surface water flow: 18,000 m³/d

Local seawater dilution factor local: 100

Other operational conditions affecting environmental exposure

Indoor / outdoor environment

Technical conditions and measures at process level (source) to prevent release

No special measures are required.

Local technical conditions and measures to reduce and limit discharges, atmospheric emissions and soil release

Waste water must be sent to a dedicated treatment plant or treated with other suitable techniques.

Organizational measures to prevent release from site

Only properly trained and authorized personnel can handle the substance. Substance handling procedures must be well documented and controlled.

Conditions and measures for the domestic sewage treatment plant

Dimensions of wastewater treatment plant: 2000 m³/d (removal rate: 87.4 %)

Conditions and measures for external treatment of waste for disposal

No specific measures. For general conditions and measures, see section 13.

Conditions and measures for external recovery of waste

No specific measures. For general conditions and measures, see section 13.

3. EXPOSURE ESTIMATION AND REFERENCE TO ITS SOURCE

Workers

PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC14, PROC15, PROC19

Exposure assessment (human):

PROC5, PROC6, PROC8b, PROC9, PROC11, PROC13, PROC14, PROC15

ECETOC TRA model (April 2010 version). Dermal exposure estimates of ECETOC TRA have been linearly corrected for concentration.

PROC8a, PROC10

ECETOC TRA model (April 2010 version). Dermal exposure estimates of ECETOC TRA have been linearly corrected for concentration. Local and systemic exposure via inhalation of ECETOC TRA has been linearly scaled based on the concentration.

PROC19

ECETOC TRA model (April 2010 version). The dermal exposure estimates of ECETOC TRA have been linearly corrected for the concentration and according to the EMFs of CEFIC for the duration of exposure. Local exposure via inhalation of ECETOC TRA has been linearly scaled based on the concentration and in accordance with the CEFIC EMFs for the duration of exposure. Systemic exposure via inhalation has been linearly scaled for the duration of exposure.

Exposure estimation:

Individual and combined (skin and inhalation) exposure values are below the DNELs (RCR ratios < 1).

Environment

ERC8a, ERC8d

Exposure assessment (environment):

EUSES 2.1.

Exposure estimation:

The predicted exposure concentrations for air, water and soil are lower than the derived PNECs, giving an RCR < 1.

4. GUIDANCE FOR DOWNSTREAM USERS TO ASSESS WHETHER THEY COMPLY WITH THE LIMITS SET BY THE EXPOSURE SCENARIO

Environment:

Under the conditions listed above the process is considered safe. Direct release to water and soil should be avoided, air emissions should be minimised. Other conditions should be considered only when adequate measurements or calculations demonstrate that the RCR remains < 1.

Health:

Under the conditions listed above the process is considered safe. Other conditions should be considered only when adequate measurements or calculations demonstrate that the RCR remains < 1.

Further good practice advice beyond the REACH CSA

Environment: Not applicable

Health: On possible contact with the product (sampling, use, spills, product leaks, cleaning): wear protective clothing. Wear protective gloves and safety goggles. See section 8 for information on appropriate personal protective equipment.

PROFESSIONAL USE

Exposure scenario for professional use in photochemicals (PC30)

1. TITLE

Systematic title based on the use descriptor: SU22 - Professional uses: Generalized use

Processes, activities covered:

Transfer operations from/to large or small containers

Evaluation method:

ECETOC TRA (April 2010), EUSES (v.2.1)

2. OPERATING CONDITIONS AND RISK MANAGEMENT MEASURES

Human Health Exposure/Environmental Exposure:

PC30: PROC8a, 8b - ERC8a, 8d

Number of sites: > 1

2.1 EXPOSURE SCENARIO CONTROLLING WORKER EXPOSURE FOR PROC8a E PROC8b

Product features

Concentration ≤ 40%

Physical state: liquid

Quantity used

Not applicable

Frequency and duration of use/exposure

Duration of exposure per day: 8h (full shift, indoors and outdoors)

Duration of exposure per year: 230 days

Human factors not influenced by risk management

Breathing volume in the conditions of use: 10 m³/8h-day (light activity)

Body weight: 70kg (worker)

Other operational conditions affecting worker exposure

Internal use

Use at room temperature

Technical conditions and measures to control dispersion from source to the worker

No special measures are required.

Organizational measures to prevent/limit releases, dispersion and exposure

Only properly trained and authorized personnel can handle the substance. Substance handling procedures must be well documented and controlled.

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

Personal protection:

PROC8b: concentration ≤ 40 %: no RMM required.

PROC8a: > 25 % - ≤ 40 %: gloves (90 % efficiency) are required as described in section 8.

Wear safety goggles as described in section 8.

Wear protective clothing as described in section 8.

2.2 EXPOSURE SCENARIO CONTROLLING ENVIRONMENTAL EXPOSURE FOR ERC8a, ERC8b

Product features

Not relevant

Quantity used

Yearly amount used in the region: the 10% rule applies

ERC8a PC30: 1.785 t

ERC8d PC30: 190 t

Fraction of main local source: 0.002 (default)

Issue days per site: 365 days/year (default)

Frequency and duration of use

Continuous release: 365 days/year

Environmental factors not influenced by risk management

Local fresh water dilution factor: 10

Receiving surface water flow: 18,000 m³/d

Local seawater dilution factor local: 100

Other operational conditions affecting environmental exposure

No special measures are required.

Technical conditions and measures at process level (source) to prevent release

No special measures are required.

Local technical conditions and measures to reduce and limit discharges, atmospheric emissions and soil release

Waste water must be sent to a dedicated treatment plant or treated with other suitable techniques.

Organizational measures to prevent release from site

Only properly trained and authorized personnel can handle the substance. Substance handling procedures must be well documented and controlled.

Conditions and measures for the domestic sewage treatment plant

Dimensions of wastewater treatment plant: 2000 m³/d (removal rate: 87.4 %)

Conditions and measures for external treatment of waste for disposal

No specific measures. For general conditions and measures, see section 13.

Conditions and measures for external recovery of waste

No specific measures. For general conditions and measures, see section 13.

3. EXPOSURE ESTIMATION AND REFERENCE TO ITS SOURCE

Workers

PROC8a, PROC8b

Exposure assessment (human):

PROC8a

ECETOC TRA model (April 2010 version). Dermal exposure estimates of ECETOC TRA have been linearly corrected for concentration. Local and systemic exposure via inhalation of ECETOC TRA has been linearly scaled based on the concentration.

PROC8b

ECETOC TRA model (April 2010 version). Dermal exposure estimates of ECETOC TRA have been linearly corrected for concentration.

Exposure estimation:

Individual and combined (skin and inhalation) exposure values are below the DNELs (RCR ratios < 1).

Environment

ERC8a, ERC8b

Exposure assessment (environment):

EUSES 2.1.

Exposure estimation:

The predicted exposure concentrations for air, water and soil are lower than the derived PNECs, giving an RCR < 1.

4. GUIDANCE FOR DOWNSTREAM USERS TO ASSESS WHETHER THEY COMPLY WITH THE LIMITS SET BY THE EXPOSURE SCENARIO

Environment:

Under the conditions listed above the process is considered safe. Direct release to water and soil should be avoided, air emissions should be minimised. Other conditions should be considered only when adequate measurements or calculations demonstrate that the RCR remains < 1.

Health:

Under the conditions listed above the process is considered safe. Other conditions should be considered only when adequate measurements or calculations demonstrate that the RCR remains < 1.

Further good practice advice beyond the REACH CSA

Environment: Not applicable

Health: On possible contact with the product (sampling, use, spills, product leaks, cleaning): wear protective clothing. Wear protective gloves and safety goggles. See section 8 for information on appropriate personal protective equipment.

PROFESSIONAL USE

Exposure scenario for professional use in washing and cleaning products, cosmetics and personal care products (PC35, PC39)

1. TITLE

Systematic title based on the use descriptor: SU22 - Professional uses: Generalized use

Processes, activities covered:

Transfer operations from/to large or small containers
Treatment of objects by roller/brush, spray or dip/pour application
Mixing or dilution in batch processes or by hand

Evaluation method:

ECETOC TRA (April 2010), EUSES (v.2.1)

2. OPERATING CONDITIONS AND RISK MANAGEMENT MEASURES

Human Health Exposure/Environmental Exposure:

PC35: PROC8a, 8b, 9, 10, 11, 13, 19 - ERC8a, 8b, 8d, 8e

PC39: PROC13 - ERC8a, 8b, 8d, 8e

Number of sites: > 1

2.1 EXPOSURE SCENARIO CONTROLLING WORKER EXPOSURE FOR PROC8a, PROC8b, PROC9, PROC10, PROC13

Product features

Concentration ≤ 40%
Physical state: liquid

Quantity used

Not applicable

Frequency and duration of use/exposure

Duration of exposure per day: 8h (full shift, indoors and outdoors)
Duration of exposure per year: 230 days

Human factors not influenced by risk management

Breathing volume in the conditions of use: 10 m³/8h-day (light activity)
Body weight: 70kg (worker)

Other operational conditions affecting worker exposure

Internal use
Use at room temperature

Technical conditions and measures to control dispersion from source to the worker

No special measures are required.

Organizational measures to prevent/limit releases, dispersion and exposure

Only properly trained and authorized personnel can handle the substance. Substance handling procedures must be well documented and controlled.

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

Personal protection:

PROC8b, PROC9: concentration ≤ 40 %: no RMM required.

PROC8a, PROC13: > 25 % - ≤ 40 %: gloves (90 % efficiency) are required as described in section 8.

PROC10: < 5 % (indoor and outdoor environment): No RMMs required

> 5 - ≤ 40 % (indoor and outdoor environment): gloves (90 % efficiency) are required as described in section 8.

Wear safety goggles as described in section 8.

Wear protective clothing as described in section 8.

2.2 EXPOSURE SCENARIO CONTROLLING WORKER EXPOSURE FOR PROC11

Product features

Concentration $\leq 40\%$

Physical state: liquid

Quantity used

Not applicable

Frequency and duration of use/exposure

Duration of exposure per day: 8h (full shift, indoors and outdoors)

Duration of exposure per year: 230 days

Human factors not influenced by risk management

Breathing volume in the conditions of use: 10 m³/8h-day (light activity)

Body weight: 70kg (worker)

Other operational conditions affecting worker exposure

Internal use

Use at room temperature

Technical conditions and measures to control dispersion from source to the worker

No special measures are required.

Organizational measures to prevent/limit releases, dispersion and exposure

Only properly trained and authorized personnel can handle the substance. Substance handling procedures must be well documented and controlled.

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

Personal protection:

$\leq 5\%$ (indoor and outdoor environment): Respiratory protection (95 % efficiency) required as described in section 8.

$> 5\% - \leq 40\%$ (indoor and outdoor environment): Respiratory protection (95 % efficiency) and gloves (90 % efficiency) required as described in section 8.

Wear safety goggles as described in section 8.

Wear protective clothing as described in section 8.

2.3 EXPOSURE SCENARIO CONTROLLING WORKER EXPOSURE FOR PROC19

Product features

Concentration $\leq 40\%$

Physical state: liquid

Quantity used

Not applicable

Frequency and duration of use/exposure

Duration of exposure per day (concentration $\leq 25\%$): 8 h (indoor and outdoor)

Duration of exposure per day (concentration $>25\% - \leq 40\%$): 4 hours (indoors and outdoors)

Duration of exposure per year: 230 days

Human factors not influenced by risk management

Breathing volume in the conditions of use: 10 m³/8h-day (light activity)

Body weight: 70kg (worker)

Other operational conditions affecting worker exposure

Internal use

Use at room temperature

Technical conditions and measures to control dispersion from source to the worker

No special measures are required.

Organizational measures to prevent/limit releases, dispersion and exposure

Only properly trained and authorized personnel can handle the substance. Substance handling procedures must be well documented and controlled.

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

Personal protection:

> 1 % (indoor): gloves (90 % efficiency) are required as described in section 8.

> 5% - 40% (outdoors): gloves (90 % efficiency) are required as described in section 8..

Wear safety goggles as described in section 8.

Wear protective clothing as described in section 8.

2.4 EXPOSURE SCENARIO CONTROLLING ENVIRONMENTAL EXPOSURE FOR ERC8a, ERC8b, ERC8d, ERC8e

Product features

Not relevant

Quantity used

Yearly amount used in the region: the 10% rule applies

ERC8a PC35/PC39: 1,785 t

ERC8b PC35/PC39: 190 t

ERC8d PC35/PC39: 1,775 t

ERC8e PC35/PC39: 190 t

Fraction of main local source: 0.002 (default)

Issue days per site: 365 days/year (default)

Frequency and duration of use

Continuous release: 365 days/year

Environmental factors not influenced by risk management

Local fresh water dilution factor: 10

Receiving surface water flow: 18,000 m³/d

Local seawater dilution factor local: 100

Other operational conditions affecting environmental exposure

No special measures are required.

Technical conditions and measures at process level (source) to prevent release

No special measures are required.

Local technical conditions and measures to reduce and limit discharges, atmospheric emissions and soil release

Waste water must be sent to a dedicated treatment plant or treated with other suitable techniques.

Organizational measures to prevent release from site

Only properly trained and authorized personnel can handle the substance. Substance handling procedures must be well documented and controlled.

Conditions and measures for the domestic sewage treatment plant

Dimensions of wastewater treatment plant: 2000 m³/d (removal rate: 87.4 %)

Conditions and measures for external treatment of waste for disposal

No specific measures. For general conditions and measures, see section 13.

Conditions and measures for external recovery of waste

No specific measures. For general conditions and measures, see section 13.

3. EXPOSURE ESTIMATION AND REFERENCE TO ITS SOURCE

Workers

Exposure assessment (human):

PROC8b, PROC9, PROC11, PROC13

ECETOC TRA model (April 2010 version). Dermal exposure estimates of ECETOC TRA have been corrected for concentration.

PROC8a, PROC10

ECETOC TRA model (April 2010 version). Dermal exposure estimates of ECETOC TRA have been linearly corrected for concentration. Local and systemic exposure via inhalation of ECETOC TRA has been linearly scaled based on the concentration.

PROC19

ECETOC TRA model (April 2010 version). The dermal exposure estimates of ECETOC TRA have been linearly corrected for the concentration and according to the EMFs of CEFIC for the duration of exposure. Local exposure via inhalation of ECETOC TRA has been linearly scaled based on the concentration and in accordance with the CEFIC EMFs for the duration of exposure. Systemic exposure via inhalation has been linearly scaled for the duration of exposure.

Exposure estimation:

Individual and combined (skin and inhalation) exposure values are below the DNELs (RCR ratios < 1).

Environment

ERC8a, ERC8b, ERC8d, ERC8e

Exposure assessment (environment):

EUSES 2.1.

Exposure estimation:

The predicted exposure concentrations for air, water and soil are lower than the derived PNECs, giving an RCR < 1.

4. GUIDANCE FOR DOWNSTREAM USERS TO ASSESS WHETHER THEY COMPLY WITH THE LIMITS SET BY THE EXPOSURE SCENARIO

Environment:

Under the conditions listed above the process is considered safe. Direct release to water and soil should be avoided, air emissions should be minimised. Other conditions should be considered only when adequate measurements or calculations demonstrate that the RCR remains < 1.

Health:

Under the conditions listed above the process is considered safe. Other conditions should be considered only when adequate measurements or calculations demonstrate that the RCR remains < 1.

Further good practice advice beyond the REACH CSA

Environment: Not applicable

Health: On possible contact with the product (sampling, use, spills, product leaks, cleaning): wear protective clothing. Wear protective gloves and safety goggles. See section 8 for information on appropriate personal protective equipment.

m-phenylenebis(methylamine)

Substance identification

Chemical Name: m-phenylenebis(methylamine)

CAS number: CAS-1477-55-0

Date - Version: 10/03/2020 - 1.0

PROFESSIONAL USES - GENERALIZED USE BY PROFESSIONAL OPERATORS: VARIOUS PRODUCTS (PC9a, PC9b, PC1); CONSTRUCTION (SU19)

1. TITLE SECTION

Exposure scenario name: Professional use of coatings and paints - Use in composite and foundry materials

Life cycle stage: Professional uses

Sectors of use: Construction (SU19) - Professional uses (SU22)

Product categories: Coatings and paints, thinners, pickling solutions (PC9a) - Additives, fillers, plasters, modeling clay (PC9b) - Adhesives, Sealants (PC1)

CONTRIBUTION SCENARIO - ENVIRONMENT

CS1: Wet cure - Wet formulation ERC8c - ERC8f

CONTRIBUTION SCENARIO - WORKER

CS2: Application with rollers or brushes PROC10

CS3: Non-industrial spray application PROC11

CS4: Treatment of articles by dipping and pouring PROC13

CS5: Manual activities with direct contact PROC19

CS6: Low energy handling of substances included in or on materials and/or articles PROC21

2. CONDITIONS OF USE AFFECTING EXPOSURE

2.1. CS1: CONTRIBUTION SCENARIO - ENVIRONMENT: Wet cure - Wet formulation (ERC8c, ERC8f)

Environmental release categories

Widespread use resulting in inclusion in or on the surface of an article (indoor use) - Wide use leading to inclusion in/on article (outdoor use) (ERC8c, ERC8f)

Product features (article)

Physical form of the product: Liquid

Amount used, frequency and duration of use/(or duration of use)

Amounts used:

PROC10 ≤ 0,4 l/min

PROC11 ≤ 0,3 l/min

PROC13 ≤ 2 l/min

PROC19 ≤ 1 l/min

PROC21 ≤ 0,3 l/min

Measures and technical-organizational conditions

Control measures to prevent releases: No entry of substance into waste water.

Conditions and measures for waste treatment (including the product waste)

Waste treatment: This material and its container must be disposed of as hazardous.

Dispose of waste product or used containers according to local regulations.

Incineration of hazardous waste.

2.2. CS2: CONTRIBUTION SCENARIO - WORKER: Application with rollers or brushes (PROC10)

Product features (article)

Physical form of the product: Liquid.

Concentration of the substance in the product: Includes substance shares in the product up to 5%.

Amount used, frequency and duration of use/(or duration of use)

Amounts used: Quantity per use 0.4 l/min

Duration: ≤ 5 h/day

Frequency: 365 days/year

Technical organizational measures

Ensure that direct skin contact is avoided.

Avoid direct contact with the product, even with contaminated hands.

Ensure operating personnel are trained to minimize exposure.

See main part of the safety data sheet, Sections 7 and/or 8, for measures mitigating the risks deriving from the physical-chemical properties.

Ensure a sufficient amount of general ventilation (1 to 3 air changes per hour).

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

Personal protective equipment:

Wear suitable face protection.

Use adequate eye protection.

Wear a suitable apron to avoid skin exposure.

Wear suitable gloves, tested according to EN347.

Use a respiratory protective device according to EN140.

Dermal: minimum efficiency of 80%.

Inhalation: minimum efficiency of 95%.

2.3. CS3: CONTRIBUTION SCENARIO - WORKER: Non-industrial spray application (PROC11)

Product features (article)

Physical form of the product: Liquid.

Concentration of the substance in the product: Includes substance shares in the product up to 5%.

Amount used, frequency and duration of use/(or duration of use)

Amounts used: Quantity per use 0.3 l/min

Duration: ≤ 6 h/day

Frequency: 365 days/year

Technical organizational measures

Ensure that direct skin contact is avoided.

Avoid direct contact with the product, even with contaminated hands.

Ensure operating personnel are trained to minimize exposure.

See main part of the safety data sheet, Sections 7 and/or 8, for measures mitigating the risks deriving from the physical-chemical properties.

Ensure a sufficient amount of general ventilation (1 to 3 air changes per hour).

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

Personal protective equipment:

Wear suitable face protection.

Use adequate eye protection.

Wear a suitable apron to avoid skin exposure.

Wear suitable gloves, tested according to EN347.

Use a respiratory protective device according to EN140.

Dermal: minimum efficiency of 80%.

Inhalation: minimum efficiency of 95%.

2.4. CS4: CONTRIBUTION SCENARIO - WORKER: Treatment of articles by dipping and pouring (PROC13)

Product features (article)

Physical form of the product: Liquid.

Concentration of the substance in the product: Includes substance shares in the product up to 5%.

Amount used, frequency and duration of use/(or duration of use)

Amounts used: Quantity per use 2 l/min

Duration: ≤ 1 h/day

Frequency: 365 days/year

Technical organizational measures

Ensure that direct skin contact is avoided.

Avoid direct contact with the product, even with contaminated hands.

Ensure operating personnel are trained to minimize exposure.

See main part of the safety data sheet, Sections 7 and/or 8, for measures mitigating the risks deriving from the physical-chemical properties.

Ensure a sufficient amount of general ventilation (1 to 3 air changes per hour).

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

Personal protective equipment:

Wear suitable face protection.

Use adequate eye protection.

Wear a suitable apron to avoid skin exposure.

Wear suitable gloves, tested according to EN347.

Use a respiratory protective device according to EN140.

Dermal: minimum efficiency of 80%.

Inhalation: minimum efficiency of 95%.

2.5. CS5: CONTRIBUTION SCENARIO - WORKER: Manual activities with direct contact (PROC19)

Product features (article)

Physical form of the product: Liquid.

Concentration of the substance in the product: Includes substance shares in the product up to 40%.

Amount used, frequency and duration of use/(or duration of use)

Amounts used: Quantity per use 1 l/min

Duration: ≤ 2 h/day

Frequency: 365 days/year

Technical organizational measures

Ensure that direct skin contact is avoided.

Avoid direct contact with the product, even with contaminated hands.

Ensure operating personnel are trained to minimize exposure.

See main part of the safety data sheet, Sections 7 and/or 8, for measures mitigating the risks deriving from the physical-chemical properties.

Ensure a sufficient amount of general ventilation (1 to 3 air changes per hour).

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

Personal protective equipment:

Wear suitable face protection.

Use adequate eye protection.

Wear a suitable apron to avoid skin exposure.

Wear suitable gloves, tested according to EN347.

Use a respiratory protective device according to EN140.

Dermal: minimum efficiency of 80%.

Inhalation: minimum efficiency of 95%.

2.6. CS6: CONTRIBUTION SCENARIO - WORKER: Low energy handling of substances included in or on materials and/or articles (PROC21)

Product features (article)

Physical form of the product: Liquid.

Concentration of the substance in the product: Includes substance shares in the product up to 5%.

Amount used, frequency and duration of use/(or duration of use)

Amounts used: Quantity per use 0.3 l/min

Duration: ≤ 6 h/day

Frequency: 365 days/year

Technical organizational measures

Ensure that direct skin contact is avoided.

Avoid direct contact with the product, even with contaminated hands.

Ensure operating personnel are trained to minimize exposure.

See main part of the safety data sheet, Sections 7 and/or 8, for measures mitigating the risks deriving from the physical-chemical properties.

Ensure a sufficient amount of general ventilation (1 to 3 air changes per hour).

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

Personal protective equipment:

Wear suitable face protection.

Use adequate eye protection.

Wear a suitable apron to avoid skin exposure.

Wear suitable gloves, tested according to EN347.

Use a respiratory protective device according to EN140.

Dermal: minimum efficiency of 80%.

Inhalation: minimum efficiency of 95%.

3. EXPOSURE ESTIMATION AND REFERENCE TO ITS SOURCE

3.1. CS1: CONTRIBUTION SCENARIO - ENVIRONMENT: Wet cure - Wet formulation (ERC8c, ERC8f)

Protection goal	Degree of exposure	Calculation method	Risk Characterization Ratio (RCR)
fresh water	N.d.	ECETOC TRA environment v2.0	0.169
fresh water sediment	N.d.	ECETOC TRA environment v2.0	0.411
sea water	N.d.	ECETOC TRA environment v2.0	0.089
Marine sediment	N.d.	ECETOC TRA environment v2.0	0.412
Agricultural land	N.d.	ECETOC TRA environment v2.0	0.004

3.2. CS2: CONTRIBUTION SCENARIO - ENVIRONMENT: Application with rollers or brushes (PROC10)

Route of exposure, Impact on health, Exposure indicator	Degree of exposure	Calculation method	Risk Characterization Ratio (RCR)
skin contact, systemic, long-term	N.d.	RISKOFDERM v2.1	0.83
by inhalation, systemic, long-term	N.d.	ECETOC TRA worker v2.0	0.2

3.3. CS3 CONTRIBUTION SCENARIO - ENVIRONMENT: Non-industrial spray application (PROC11)

Route of exposure, Impact on health, Exposure indicator	Degree of exposure	Calculation method	Risk Characterization Ratio (RCR)
skin contact, systemic, long-term	N.d.	RISKOFDERM v2.1	0.83
by inhalation, systemic, long-term	N.d.	ECETOC TRA worker v2.0	0.2

3.4. CS4 CONTRIBUTION SCENARIO - ENVIRONMENT: Treatment of articles by dipping and pouring (PROC13)

Route of exposure, Impact on health, Exposure indicator	Degree of exposure	Calculation method	Risk Characterization Ratio (RCR)
skin contact, systemic, long-term	N.d.	RISKOFDERM v2.1	0.83
by inhalation, systemic, long-term	N.d.	ECETOC TRA worker v2.0	0.2

3.5. CS5 CONTRIBUTION SCENARIO - ENVIRONMENT: Manual activities with direct contact (PROC19)

Route of exposure, Impact on health, Exposure indicator	Degree of exposure	Calculation method	Risk Characterization Ratio (RCR)
skin contact, systemic, long-term	N.d.	RISKOFDERM v2.1	0.83
by inhalation, systemic, long-term	N.d.	ECETOC TRA worker v2.0	0.2

3.6. CS6 CONTRIBUTION SCENARIO - ENVIRONMENT: Low energy handling of substances included in or on materials and/or articles (PROC21)

Route of exposure, Impact on health, Exposure indicator	Degree of exposure	Calculation method	Risk Characterization Ratio (RCR)
skin contact, systemic, long-term	N.d.	RISKOFDERM v2.1	0.83
by inhalation, systemic, long-term	N.d.	ECETOC TRA worker v2.0	0.2

4. GUIDANCE FOR DOWNSTREAM USERS TO ASSESS WHETHER THEY COMPLY WITH THE LIMITS SET BY THE EXPOSURE SCENARIO

Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.