



KÄYTTÖTURVALLISUUSTIEDOTE

Asetuksen (EY) N:o 1907/2006 mukaisesti

SDS n° : 33826

POLYLITE® 440-M850

Sivu 1 / 19

Edellinen päiväys 30-Dec-2020

Uusintapäivämäärä 23-Nov-2021

Versio: 1

KOHTA 1: Aineen tai seoksen ja yhtiön tai yrityksen tunnistetiedot

1.1 Tuotetunniste

Kauppanimi	POLYLITE® 440-M850
Kemiallinen nimi	POLYESTERIHARTSI
Puhdas aine/seos	Seoksella
Yksilöllinen koostumustunniste (UFI)	9170-U091-Y00H-9K0C

1.2 Aineen tai seoksen merkitykselliset tunnistetut käytöt ja käytöt, joita ei suositella

Tunnistetut käyttötavat (Matala styreeni päästöt) polyesterihartsia. Laminointihartsia.

1.3. Käyttöturvallisuustiedotteen toimittajan tiedot

Valmistaja, maahantuojaja, muu toiminnanharjoittaja

Polynt Composites France S.A.
Route d'Arras CS 50019 62320 Drocourt, France
Tel : (+33) 3 21 74 84 00 - Fax : (+33) 3 21 49 55 84

Polynt S.p.A.
Via Enrico Fermi, 51 24020 Scanzorosciate (BG), Italy
Tel : (+39) 035 652 111 - Fax : (+39) 035 652 421

Polynt Composites Spain, S.L.U.
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ul. Grabska 11d, 32-005 Niepolomice, Poland
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Polynt Composites Norway AS
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Polynt Composites Stallingborough UK Ltd.
Laporte Road, Stallingborough - Near Grimsby North East Lincolnshire DN41 8DR,
United Kingdom
Tel : (+44) 1469 552 570 - Fax : (+44) 1469 552 597

Tuotteen valmistaja on yllä mainittujen joukossa sekä etiketissä ja/tai myyntidokumentissa mainittu

Lisätietojen saamiseksi ottakaa yhteyttä

Sähköpostiosoite sdsregulatory@polynt.com
Internet-osoite http://www.polynt.com

1.4. Häätäpuhelinnumero

Tämä puhelinnumero on käytettävissä 24 h vuorokaudessa, 7 päivänä viikossa

Europe :	+44 1235 239 670
Middle East/Africa :	+44 1235 239 671
East/South East Asia :	+65 3158 1412
America :	+1 215 207 0061

**Myrkytystietokeskuksen
puhelinnumero**

Euroopan hätänumero : 112
Myrkytystietokeskus (Avoimna 24 t / vrk)
Haartmaninkatu 4, 00290 Helsinki
puh : 09 471 977

KOHTA 2: Vaaran yksilöinti

2.1. Aineen tai seoksen luokitus

Aineen tai seoksen luokitus - GHS/CLP (n° 1272/2008)

Ihon syöpyminen/ärsytys	Luokka 2 - (H315)
Vakava silmävaurio / silmien ärsytys	Luokka 2 - (H319)
Lisääntymiskykyyn vaikuttava myrkyllisyys	Luokka 2 - (H361d)
Systeeminen myrkyllisyys tietylle kohde-elimelle (kerta-altistuminen)	Luokka 3 - (H335)
Elinkohtainen myrkyllisyys - toistuva altistuminen	Luokka 1 - (H372)
Pitkäaikaismyrkyllisyys vesieliöille	Luokka 3 - (H412)
Syttyvät nesteet	Luokka 3 - (H226)

2.2. Merkinnät

Sisältää Styreeni



Huomiosana

Vaaralausekkeet

Fysikaaliset vaarat

EU H-lausekkeet

Vaara

H315 - Ärsyttää ihoa
H319 - Ärsyttää voimakkaasti silmiä
H335 - Saattaa aiheuttaa hengitysteiden ärsytystä
H361d - Epäilläään vaurioittavan sikiötä
H372 - Vahingoittaa elimiä pitkäaikaisessa tai toistuvassa altistumisessa hengitettynä
H412 - Haitallista vesieliöille, pitkäaikaisia haittavaikutuksia
H226 - Syttyvä neste ja höyry

EUH208 - sisältää kobolttioktoaattia. Voi aiheuttaa allergisen reaktion.

Turvalausekkeet

P210 - Suojaa lämmöltä, kuumilta pinnoilta, kipinöiltä, avotulelta ja muilta sytytyslähteiltä.
 Tupakointi kielletty
 P243 - Estä staattisen sähkön aiheuttama kipinöinti
 P260 - Älä hengitä höyryä
 P273 - Vältettävä päästämistä ympäristöön
 P280 - Käytä suojakäsineitä/suojavaatetusta/silmiensuojainta/kasvosuojainta
 P302 + P352 - JOS KEMIKAALIA JOUTUU IHOLLE: Pese runsaalla vedellä ja saippualla
 P304 + P340 - JOS KEMIKAALIA ON HENGITETTY: Siirrä henkilö raittiiseen ilmaan ja varmista vaivaton hengitys
 P305 + P351 + P338 - JOS KEMIKAALIA JOUTUU SILMIIN: Huuhto huolellisesti vedellä usean minuutin ajan. Poista mahdolliset piilolinssit, jos sen voi tehdä helposti. Jatka huuhtomista
 P403 + P233 - Varastoi paikassa, jossa on hyvä ilmanvaihto. Säilytä tiiviisti suljettuna

2.3. Muut vaarat

PBT/αΑαΒ βλέπε παρ. 12.5.

KOHTA 3: Koostumus ja tiedot aineosista**3.2. Seokset****Vaaraa aiheuttavat aineosat**

Kemiallinen nimi	EY-Nro	REACH-rekisteröinti numero	CAS-Nro	Paino%	Luokitus (Asetus 1272/2008)
Styreeni	202-851-5	01-2119457861-32	100-42-5	40 - 45	Flam. Liq. 3 (H226) Repr. 2 (H361d) Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Asp. Tox. 1 (H304) STOT SE 3 (H335) STOT RE 1 (H372) Aquatic Chronic 3 (H412)
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated	297-629-8	01-2120752626-49	93685-81-5	0.5 - 1.5	Flam. Liq. 3 (H226) Asp. Tox. 1 (H304) Aquatic Chronic 4 (H413) (EUH066)
Silica, amorphous, fumed, crystalline-free	231-545-4	01-2119379499-16	112945-52-5	> 0.1	-
kobolttioktoaattia	205-250-6	01-2119524678-29	136-52-7	0.01 - < 0.1	Skin Sens. 1A (H317) Eye Irrit. 2 (H319) Repr. 1B (H360Fd) Aquatic Acute 1 (H400) Aquatic Chronic 3 (H412)

Tässä kohdassa mainittujen H-lausekkeiden täydelliset tekstit ovat kohdassa 16

KOHTA 4: Ensiaputoimenpiteet**4.1. Ensiaputoimenpiteiden kuvaus****Erityiset ohjeet**

Näytettävä tätä käyttöturvallisuustiedotetta hoitavalle lääkärille
 Vältettävä pölyn/savun/kaasun/huurun/höyryjen/sumun hengittämistä

Roiskeet silmiin

Roiskeet huuhteltava huolellisesti runsaalla vedellä, myös silmäluomien alta
 Silmä pidettävä kunnolla auki huuhtelun aikana.
 Otettava yhteys lääkäriin mikäli oireet jatkuvat

Ihokosketus	Roiskeet huuhteltava välittömästi saippualla ja runsaalla vedellä sekä riisuttava tahriintuneet vaatteet ja kengät Mikäli ihoärsytys jatkuu, ota yhteys lääkäriin
Hengitys	Siirrettävä raittiiseen ilmaan Ellei hengitä on elvytettävä Otettava yhteys lääkäriin
Nieleminen	Ei saa oksennuttaa Huuhteltava suu Otettava yhteys lääkäriin
Ensiapua antavien henkilöiden suojaaminen	Käytettävä henkilökohtaista suojaruustusta Lisätietoja on kohdassa 8

4.2. Tärkeimmät oireet ja vaikutukset, sekä välittömät että viivästyneet

Roiskeet silmiin	Ärsyttää silmiä
Ihokosketus	Ärsyttää ihoa Voi aiheuttaa allergisen reaktion.
Hengitys	Terveydelle haitallista: pitkäaikainen altistus voi aiheuttaa vakavaa haittaa terveydelle hengitettynä Ärsyttää hengityselimiä
Nieleminen	Nieleminen voi aiheuttaa vatsalaukun ja ohutsuolistoseudun ärsytystä, pahoinvointia, oksentelua ja ripulia

4.3. Mahdollisesti tarvittavaa välitöntä lääketieteellistä apua ja erityishoitoa koskevat ohjeet

Tietoja lääkärille	Tietoa ei ole käytettävissä
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KOHTA 5: Palontorjuntatoimenpiteet

5.1. Sammutusaineet

Sopivat sammutusaineet	Jauhe, Vaahto, Hiilidioksidi (CO ₂), (suljetut järjestelmät)
Sammutusaineet, joita ei pidä käyttää turvallisuussyistä	Älä käytä suuritehoista paloruiskua, koska se voi hajoittaa ja levittää tulipaloa.

5.2. Aineesta tai seoksesta johtuvat erityiset vaarat

Erityiset altistumisvaarat, jotka johtuvat aineesta tai valmisteesta itsestään, palamistuotteista tai tuloksena syntyvistä kaasuista	Höyryt muodostavat ilman kanssa räjähtäviä seoksia. Useimmat höyryt ovat raskaampia kuin ilma. Ne leviävät maata pitkin ja kerääntyvät mataliin tai ahtaisiin tiloihin (viemärit, kellarit, tankit) Kuumennus tai palo voivat vapauttaa myrkyllistä kaasua : Hiilimonoksidi
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5.3. Palontorjuntaa koskevat ohjeet

Erityiset palomiesten suojaruusteet	Käytettävä paineilmalaitetta ja suojaapukua.
Muut tiedot	Säiliöt jäähdytettävä vesisuihkulla. Tulipalon jäännöksiä ja saastuneen sammutusveden jatkokäsittely on hoidettava paikallisten viranomaisten määräysten mukaan.

KOHTA 6: Toimenpiteet onnettomuuspäästöissä**6.1. Varotoimenpiteet, henkilönsuojaimet ja menettely hätätilanteessa****Muu kuin pelastushenkilökunta****Henkilökohtaiset suojatoimet**

Poistettava kaikki sytytyslähteet
Kuumuus, liekit ja kipinät.
Estä staattiset sähkövaraukset
Huolehdittava riittävästä ilmanvaihdosta
Käytettävä henkilökohtaista suojavarustusta

Pelastushenkilökunta

Vältettävä höyryjen ja sumujen hengittämistä Vältettävä tulipalossa ja/tai räjähdyksessä syntyvän savun hengittämistä. Käytettävä henkilökohtaista suojavarustusta

6.2. Ympäristöön kohdistuvat varotoimet**Ympäristöön kohdistuvat varotoimet**

Tuotetta ei saa antaa päästä viemäreihin, vesistöihin tai maaperään.
Ei saa huuhdella pintaveteen tai jätevesiviemäristöön

6.3. Suojarakenteita ja puhdistusta koskevat menetelmät ja -välineet**Puhdistusohjeet**

Vuoto pysäytetään ja kerätään palamattoman imeytysaineen (esim. hiekka, multa, piimaa, vermikuliitti) avulla, siirretään astiaan hävitettäväksi paikallisten ja kansallisten säännösten mukaisesti (katso kohta 13)
Käytä puhtaita, kipinöitä aiheuttamattomia työkaluja imeytyneen aineen keräämiseen

6.4. Viittaukset muihin kohtiin

Lisätietoja on kohdassa 8
Katso lisätietoja Kohdasta 12: Tiedot vaarallisuudesta ympäristölle

KOHTA 7: Käsittely ja varastointi**7.1. Turvallisen käsittelyn edellyttämät toimenpiteet**

Turvallisen käsittelyn edellyttämät toimenpiteet Vältettävä staattisen sähkön muodostuminen maadoituksen avulla.

Käytettävä ainoastaan tiloissa, joissa on riittävä ilmanvaihto
Käytettävä sopivaa hengityssuojainta jos tuuletus on riittämätön
Henkilökohtainen suojaus, katso kohta 8

Tulipalon ja räjähdysen torjunta Eristettävä avoliekeistä, kuumista pinnoista ja sytytyslähteistä Tyhjä säilytystankit voivat sisältää syttyviä tai räjähtäviä höyryjä

Erityisiä suojautumis- ja hygieniaohteita Syöminen, juominen ja tupakointi kielletty ainetta käsiteltäessä Kädet pestävä ennen taukoja ja työpäivän jälkeen Säännöllinen laitteiston, työalueen ja vaatteiden puhdistus

7.2. Turvallisen varastoinnin edellyttämät olosuhteet, mukaan luettuina yhteensopimattomuudet

Tekniset toimenpiteet/Varasto-olosuhteet Säilytettävä kuivassa, viileässä ja hyvin ilmastoidussa paikassa.
Säilytettävä lämpötilassa, joka ei ylitä 30°C
Säilytettävä suojassa lämmöltä ja sytytyslähteistä.

Vältettävät materiaalit Voimakkaat hapettimet, Peroksidit, Pelkistävät aineet

Pakkausmateriaali metallinen GRP-säiliöt (vahvistettu lasipolyesteri)

Sopimattomia materiaaleja säiliöihin kuparinvärinen, Kuparilejeeringit, Pronssi, Sinkki

7.3. Erityinen loppukäyttö

Erityiset käyttötavat

Tietoa ei ole käytettävissä

KOHTA 8: Altistumisen ehkäiseminen ja henkilösuojaimet

8.1. Valvontaa koskevat muuttujat

Raja-arvot

Kemiallinen nimi	Euroopan Unioni	ACGIH OEL (Ceiling)	Suomi
Styreeni 100-42-5	-	ACGIH (2020): TLV-TWA: 10 ppm TLV-STEL/C: 20 ppm Notes: OTO, A3, BEI Critical effects: CNS and hearing impairment, URT irr, peripheral neuropathy visual disorders	TWA 20 ppm TWA 86 mg/m ³ STEL 100 ppm STEL 430 mg/m ³
kobolttioktoattia 136-52-7		0.02 mg/m ³	Emme ole tietoisia mistään kansallisista raja-arvoista.

Aineesta tai seoksesta johtuvat erityiset vaarat

Biologiset raja-arvot

Johdettu vaikutukseton taso (DNEL)

Johdettu vaikutukseton taso (DNEL)				
Styreeni (100-42-5)				
Tyyppi	DNEL suun kautta	DNEL ihon kautta	DNEL hengitys	Huomautuksia
Workers - Long Term - Systemic effect		406 mg/Kg bw/day	85 mg/m ³	
Workers - Acute Short Term - Local effect			306 mg/m ³	
Workers - Acute Short term - Systemic effect			289 mg/m ³	
General Population - Acute Short Term - Local effect			182.7 mg/m ³	
General Population - Acute Short Term - Systemic effect			174.2 mg/m ³	
General Population - Long Term - Systemic effect	2.1 mg/Kg bw/day	343 mg/Kg bw/day	10.2 mg/m ³	

Silica, amorphous, fumed, crystalline-free (112945-52-5)				
Tyyppi	DNEL suun kautta	DNEL ihon kautta	DNEL hengitys	Huomautuksia
Workers - Long Term - Systemic effect			4 mg/m ³	

kobolttioktoattia (136-52-7)				
Tyyppi	DNEL suun kautta	DNEL ihon kautta	DNEL hengitys	Huomautuksia
Workers - Long Term - Local effect			235.1 µg/m ³	
General Population - Long Term - Systemic effect	175 µg/kg bw/day			
General Population - Long Term - Local effect			37 µg/m ³	

Todennäköinen vaikutukseton pitoisuus (PNEC)

PNEC Component

Styreeni (100-42-5)		
Altistuminen	Tyyppi	PNEC
Makea vesi	PNEC Aqua	0.028 mg/L
Merivesi	PNEC Aqua	0.014 mg/L
Ajoittainen käyttö/vapautuminen	PNEC Aqua	0.04 mg/L
Makea vesi	PNEC Sediment	0.614 mg/Kg.dw
Merivesi	PNEC Sediment	0.307 mg/Kg.dw
Maaperä	PNEC Soil	0.2 mg/Kg.dw
STP mikro-organismeille	PNEC STP	5 mg/L

Silica, amorphous, fumed, crystalline-free (112945-52-5)		
Altistuminen	Tyyppi	PNEC
Sekundaarinen myrkyllisyys	PNEC Oral	60000 mg/kg

kobolttioktoaattia (136-52-7)		
Altistuminen	Tyyppi	PNEC
Makea vesi	PNEC Aqua	0.62 µg/L
Merivesi	PNEC Aqua	2.36 µg/L
STP mikro-organismeille	PNEC STP	0.37 mg/L
Makea vesi	PNEC Sediment	53.8 mg/kg sediment dw
Merivesi	PNEC Sediment	69.8 mg/kg sediment dw
Maaperä	PNEC Soil	10.9 mg/kg soil dw

8.2. Altistumisen ehkäiseminen

Työperäisen altistumisen torjunta

Tekniset toimenpiteet

Käytettävä teknisiä menetelmiä työpaikan ilman raja-arvojen noudattamiseksi. Työskennellessä pienissä tiloissa (tankit, säiliöt), varmistettava riittävän hengitysilman saanti ja käytettävä suositeltuja varusteita

Henkilökohtaiset suojaimet

Yleiset tiedot

Hengityksensuojaus

Käytettävä henkilökohtaista suojavarustusta.

Huolehdi hyvästä yleisen ilmanvaihdon tasosta (ilman vaihtuvuus vähintään 3 - 5 kertaa tunnissa).

Jos raja-arvo todennäköisesti ylitetään / Käytettävä sopivaa hengityslaitetta, mikäli ilmasto on riittämätön :

Suodattimella varustettu hengityslaitte Tyyppi A (Orgaanisten kaasujen ja höyryjen standardin EN 14387 mukainen suodatin , APF 40 < 1 tunti, APF 200 > 1 tunti) / Tyyppi A(2)/P3 yhdistelmänä kanssa Standardin EN 143 täyttävä hiukkassuodatin , Jos alttiina pölylle

Silmiensuojaus

Ihonsuojaus / Kehon suojaus

Sivusuojilla varustetut suojalasit. Ei saa käyttää piilolinsejä.

Antistaattiset saappaat. suojakengät tai saappaat. Käytä palosuojattua/paloturvallista vaatetusta.

Käsien suojaus

Käytä kemikaalinkestäviä käsineitä (testattu EN 374 mukaisesti) sekä järjestä työntekijöiden peruskoulutus

Käsinemateriaali : Neopreeni , Nitrilit , Viton (R) tai Polyvinyylialkoholi

Suojakäsineet on riisuttava ja vaihdettava, jos esiintyy merkkejä hajoamisesta tai kemikaalin läpäisystä

Ympäristöaltistumisen torjuminen

Ympäristöaltistumisen torjuminen Ei saa päästää ympäristöön likaamaan pohjavesistöä.

KOHTA 9: Fysikaaliset ja kemialliset ominaisuudet

9.1. Fysikaalisia ja kemiallisia perusominaisuuksia koskevat tiedot

Ominaisuus

Arvoihin

Huomautuksia

Olomuoto

Neste

Väri	sininen	
Olomuoto		Tietoja ei saatavissa
Hiukkaskoko		Tietoja ei saatavissa
Haju	Pistävä	
Hajukynnys	0.15 ppm	(Styreeni) Arvot liittyvät styreeniin
pH		Tietoja ei saatavissa
pH (vesiliuoksena)		Tietoja ei saatavissa
Sulamispiste/sulamisalue	-30 °C	(Styreeni)
Jäätymispiste		Tietoja ei saatavissa
Pehmenemispiste		Tietoja ei saatavissa
Kiehumispiste	146 °C	(Styreeni)
Leimahduspiste	31 °C	Seta closed cup
Syttyvyysraja ilmassa		
Ylin	6.1%	(Styreeni)
Alin	1.1%	(Styreeni)
Höyrynpaine	6.7 hPa	(Styrene) @ 20°C
Suhteellinen höyryntiheys	3.6 (Air = 1)	(Styreeni)
Tiheys	1.08 - 1.12 g/cm3	23°C
Ominaispaino		Tietoja ei saatavissa
Bulkkitiheys		Tietoja ei saatavissa
Vesiliukoisuus	liukenematon (Vesi)	
Liukoisuus muihin liuottimiin		Tietoja ei saatavissa
Jakaantumiskerroin: n-oktanoli/vesi	3	Arvot liittyvät styreeniin
Itsesyttymislämpötila	490 °C	(Styreeni)
Hajoamislämpötila		Tietoja ei saatavissa
Viskositeetti, kinemaattinen	1000 - 1183 mm ² /s	Tietoja ei saatavissa
Viskositeetti, dynaaminen	1100 - 1300 mPa.s	23 °C Brookfield Testausmenetelmä

9.2. Muut tiedot

Fyysikaalisia vaaraluokkia koskevat tiedot

<u>Ominaisuus</u>	<u>Arvoihin</u>	<u>Huomautuksia</u>
Räjähteet		Tietoja ei saatavissa
Syttyvät kaasut		Tietoja ei saatavissa
Aerosolit		Tietoja ei saatavissa
Hapettavat kaasut		Tietoja ei saatavissa
Paineen alaiset kaasut		Tietoja ei saatavissa
Syttyvät nesteet		Tietoja ei saatavissa
Syttyvät kiinteät aineet		Tietoja ei saatavissa
Pyroforiset nesteet		Tietoja ei saatavissa
Pyroforiset kiinteät aineet		Tietoja ei saatavissa
Itsestään kuumenevat aineet ja seokset		Tietoja ei saatavissa
Aineet ja seokset, jotka veden kanssa kosketuksiin joutuessaan kehittävät syttyviä kaasuja		Tietoja ei saatavissa
Hapettavat nesteet		Tietoja ei saatavissa
Hapettavat kiinteät aineet		Tietoja ei saatavissa
Hapettavuus		Tietoja ei saatavissa
Orgaaniset peroksidit		Tietoja ei saatavissa
Metalleja syövyttävä		Tietoja ei saatavissa
Epäherkistetyt räjähdysaineet		Tietoja ei saatavissa
Muut turvallisuusominaisuudet		
Herkkyyks mekaanisille iskuille		Tietoja ei saatavissa

SAPT (itseään kiihdyttävän polymeroitumisen lämpötila)		Tietoja ei saatavissa
Räjähävien pöly/ilma -seosten muodostuminen		Tietoja ei saatavissa
Happo/emäs varanto		Tietoja ei saatavissa
Haihtumisnopeus	0.49	(BuAc = 1) (Styreeni)
Sekoittuva		Tietoja ei saatavissa
Johtavuus		Tietoja ei saatavissa
Syövyttävyys		Tietoja ei saatavissa
Kaasuryhmä		Tietoja ei saatavissa
Hapetus-pelkistyspotentiaali		Tietoja ei saatavissa
Fotokatalyyttiset ominaisuudet		Tietoja ei saatavissa

KOHTA 10: Stabiilisuus ja reaktiivisuus

10.1. Reaktiivisuus

Reaktiivisuus Tuote voi syttyä ja palaa leimahduspisteen ylittävissä lämpötiloissa

10.2. Kemiallinen stabiilisuus

Stabiilisuus Stabiili suositeltavissa varasto-olosuhteissa.

10.3. Vaarallisten reaktioiden mahdollisuus

Vaaralliset reaktiot Käytössä voi muodostua syttyvä/räjähävä höyry-ilma-seos.

Vaarallinen polymeroituminen Polymerisaatio saattaa tapahtua.

10.4. Vältettävät olosuhteet

Vältettävät olosuhteet Kuumuus, liekit ja kipinät.
Altistuminen valolle.
Estä staattiset sähkövaraukset

10.5. Yhteensopimattomat materiaalit

Vältettävät materiaalit Voimakkaat hapettimet, Peroksidit, Pelkistävät aineet

10.6. Vaaralliset hajoamistuotteet

Vaaralliset hajoamistuotteet Epätavallinen palaminen ja termolyysi aiheuttavat potentiaalisesti toksisten kaasujen vapautumista (kuten hiilimonoksidi, häkä, ja hiilidioksidi)

KOHTA 11: Myrkyllisyyteen liittyvät tiedot

11.1. Tiedot myrkyllisistä vaikutuksista

Välitön myrkyllisyys

Hengitys	Terveydelle haitallista: pitkäaikainen altistus voi aiheuttaa vakavaa haittaa terveydelle hengitettynä Ärsyttää hengityselimiä
Nieleminen	Nieleminen voi aiheuttaa vatsalaukun ja ohutsuolistoseudun ärsytystä, pahoinvointia, oksentelua ja ripulia

Kemiallinen nimi	LC50, suun kautta	LD50, ihon kautta	LC50 Hengitys	Rakenteeltaan samankaltaiset (analogiset)
Styreeni 100-42-5	5000 mg/kg (Rat)	> 2000 mg/kg bw (Rat) 24h OECD 402	11.8 mg/L (Rat) 4h CSR	
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	> 5000 mg/kg bw (Rat) Read across with : C9-C14 aliphatic, <2% aromatic hydrocarbons Similar to OECD 401	> 5000 mg/kg bw (Rabbit) Read across with : C9-C14 aliphatic, <2% aromatic hydrocarbons Similar to OECD 402	> 5000 mg/m ³ air (Rat) 4h Read across with : C9-C14 aliphatic, <2% aromatic hydrocarbons Similar to OECD 403	
Silica, amorphous, fumed, crystalline-free 112945-52-5	> 5000 mg/kg bw (Rat) OECD 401	> 5000 mg/kg (Rabbit)	> 0.14 mg/L air (Rat) 4h (analytical) OECD 403	

kobolttioktoattia 136-52-7	3129 mg/kg/bw (Rat) OECD 425	> 2000 mg/kg bw (Rat) OECD 402		
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Ihosyövyttävyyssihoärsytys

Kemiallinen nimi	ihosyövyttävyyssihoärsytys	Rakenteeltaan samankaltaiset (analogiset)
Styreeni 100-42-5	Ärsyttää ihoa in vivo -analyysi (elävässä elimistössä) kani	
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	Ei ärsytä ihoa in vivo -analyysi (elävässä elimistössä) kani Similar to OECD 404	C9-C14 aliphatic, <2% aromatic hydrocarbons
Silica, amorphous, fumed, crystalline-free 112945-52-5	Ei ärsytä ihoa kani OECD 404	
kobolttioktoattia 136-52-7	Ei ihosyövyttävyyssihoärsytys In vitro -tutkimus OECD 431 EU Method B. 40	

Vakava silmävaurio / silmien ärsytys

Kemiallinen nimi	Vakava silmävaurio / silmien ärsytys	Rakenteeltaan samankaltaiset (analogiset)
Styreeni 100-42-5	Ärsyttää silmiä in vivo -analyysi (elävässä elimistössä) kani	
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	Ei aiheuta silmien ärsytystä in vivo -analyysi (elävässä elimistössä) (kani) OECD 405	C9-C14 aliphatic, <2% aromatic hydrocarbons
Silica, amorphous, fumed, crystalline-free 112945-52-5	Ei aiheuta silmien ärsytystä kani OECD 405	
kobolttioktoattia 136-52-7	Ärsyttää silmiä kohtalaisesti OECD 437 EU Method B.47 Ärsyttää silmiä kani OECD 405	

Hengityselinten tai ihon herkistyminen

Voi aiheuttaa allergisen reaktion.

Kemiallinen nimi	Hengityselinten tai ihon herkistyminen	Rakenteeltaan samankaltaiset (analogiset)
Styreeni 100-42-5	Ei aiheuta ihon herkistymistä Ei aiheuta hengityselinten herkistymistä CSR	
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	Ei aiheuta ihon herkistymistä in vivo -analyysi (elävässä elimistössä) marsut Similar to OECD 406	C9-C14 aliphatic, <2% aromatic hydrocarbons
Silica, amorphous, fumed, crystalline-free 112945-52-5	Ei aiheuta ihon herkistymistä Ei aiheuta hengityselinten herkistymistä	
kobolttioktoattia 136-52-7	Ihokosketus voi aiheuttaa herkistymistä in vivo -analyysi (elävässä elimistössä) hiiri OECD 429	

perimää vaurioittavat**In vitro -tutkimus**

Kemiallinen nimi	Ames-testi	Rakenteeltaan samankaltaiset (analogiset)

Styreeni 100-42-5	Epäselvä In vitro -geenimutaatiokoe bakteereilla (S. typhimurium G46, TA1530, TA 1535, TA100, TA98, TA1538, TA 1537) OECD 471	
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	negatiivinen In vitro -geenimutaatiokoe bakteereilla (S. typhimurium TA 1535, TA 1537, TA 98, TA100 and TA 102) OECD 471	C9-C14 aliphatic, <2% aromatic hydrocarbons
Silica, amorphous, fumed, crystalline-free 112945-52-5	negatiivinen In vitro -geenimutaatiokoe bakteereilla OECD 471	
kobolttioktoattia 136-52-7	negatiivinen In vitro -geenimutaatiokoe bakteereilla (S. typhimurium TA 1535, TA 1537, TA 98, TA100 and TA 102) OECD 471	Cas N°: 68956-82-1, 14024-48-7

Kemiallinen nimi	Nisäkässolun geenimutaatiotesti in vitro	Rakenteeltaan samankaltaiset (analogiset)
Styreeni 100-42-5	Epäselvä In vitro -geenimutaatiotutkimus nisäkässoluilla hamsteri OECD 476	
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	negatiivinen In vitro -geenimutaatiotutkimus nisäkässoluilla hamsteri Similar to OECD 476	C9-C14 aliphatic, <2% aromatic hydrocarbons
Silica, amorphous, fumed, crystalline-free 112945-52-5	negatiivinen In vitro -geenimutaatiotutkimus nisäkässoluilla OECD 476	
kobolttioktoattia 136-52-7	negatiivinen In vitro -geenimutaatiotutkimus nisäkässoluilla hiiri OECD 476	Cas N°: 7440-48-4, 1308-06-1, 10124-43-3, 12016-80-7
Kemiallinen nimi	Nisäkkäiden kromosomipoikkeavuuksien testi in vitro	Rakenteeltaan samankaltaiset (analogiset)
Styreeni 100-42-5	positiivinen Kromosomipoikkeamakoe in vitro OECD 473 OECD 479	
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	negatiivinen Kromosomipoikkeamakoe in vitro Ihmisen lymfositit Similar to OECD 473	C9-C14 aliphatic, <2% aromatic hydrocarbons
Silica, amorphous, fumed, crystalline-free 112945-52-5	negatiivinen Kromosomipoikkeamakoe in vitro OECD 473	

in vivo -analyysi (elävässä elimistössä)

Kemiallinen nimi	UDS-testi nisäkkään maksasoluilla in vivo	Rakenteeltaan samankaltaiset (analogiset)
Styreeni 100-42-5	negatiivinen hiiri OECD 486 OECD 474	
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	negatiivinen hiiri Similar to OECD 474	C9-C14 aliphatic, <2% aromatic hydrocarbons
Silica, amorphous, fumed, crystalline-free 112945-52-5	negatiivinen rotta	

kobolttioktaattia 136-52-7	negatiivinen rotta OECD 474 OECD 475	Cas N°: 68956-82-1, 14024-48-7, 10026-24-1
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Syöpää aiheuttavat vaikutukset**Syöpää aiheuttavat vaikutukset****Styreeni (100-42-5)**

Altistumisreitit	Menetelmä	Laji	Dose	Arviointi
Hengitys	OECD 453	rotta	NOAEC systemic (carcinogenicity) \geq 4.34 mg/L air (nominal)	negatiivinen
Hengitys	OECD 453	hiiri	LOAEC (carcinogenicity) female/male = 0.09 - 0.18 mg/L air resp., NOAEC (carcinogenicity) male = 0.09 mg/L air	positiivinen
Suun kautta	Tietoa ei ole käytettävissä	rotta	NOAEL (carcinogenicity) \geq 2000 mg/kg bw /day	positiivinen
Suun kautta	Tietoa ei ole käytettävissä	hiiri	LOAEL (carcinogenicity) = 150 mg/kg bw /day	positiivinen

Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated (93685-81-5)

Altistumisreitit	Menetelmä	Laji	Dose	Arviointi
Hengitys	Rakenteeltaan samankaltaiset (analogiset) CAS N°: 64742-88-7 Similar to OECD 453	rotta	NOAEC (105 weeks) \geq 2200 mg/m ³ air	negatiivinen

Silica, amorphous, fumed, crystalline-free (112945-52-5)

Altistumisreitit	Menetelmä	Laji	Dose	Arviointi
Suun kautta	OECD 453	rotta	NOAEL = 1800 - 3200 mg/kg bw/day	negatiivinen

Lisääntymiselle vaarallinen**Lisääntymiselle vaarallinen****Styreeni (100-42-5)**

Altistumisreitit	Menetelmä	Laji	Dose	Arviointi
Hengitys	Tietoa ei ole käytettävissä	rotta	NOAEL/LOAEL (fertility) 60d = 100 - 200 mg/kg bw/day	positiivinen
Suun kautta	OECD 422	rotta	NOAEL/LOAEL (fertility) 60d = 200 - 400 mg/kg bw/day	positiivinen
Hengitys	OECD 416	rotta	NOAEC (P, F1) = 0.64 mg/L air LOAEC (P, F1) = 2.13 mg/L air NOAEC (F2) = 0.21 mg/L air LOAEC (F2) = 0.64 mg/L air (70d)	negatiivinen

Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated (93685-81-5)

Altistumisreitit	Menetelmä	Laji	Dose	Arviointi
Suun kautta	Rakenteeltaan samankaltaiset (analogiset) C9-C16 Aliphatics, 25% aromatics OECD 421 OECD 422	rotta	NOAEL (reproductive & developmental toxicity) = 1000 mg/kg/day	negatiivinen

Silica, amorphous, fumed, crystalline-free (112945-52-5)

Altistumisreitit	Menetelmä	Laji	Dose	Arviointi
Suun kautta	OECD 415	rotta	NOAEL = 497 mg/kg bw/day	negatiivinen

kobolttioktoaatia (136-52-7)				
Altistumisreitit	Menetelmä	Laji	Dose	Arviointi
Suun kautta	Rakenteeltaan samankaltaiset (analogiset) Cas N°: 7440-48-4 OECD 422	rotta	NO(A)EL (P&F1) 28d = 30 mg/kg bw/day	positiivinen

Kehitysmyrkyllisyys Epäillään vaurioittavan sikiötä.

Kehitysmyrkyllisyys				
Styreeni (100-42-5)				
Altistumisreitit	Menetelmä	Laji	Dose	Arviointi
Hengitys	Tietoa ei ole käytettävissä	rotta	NOAEC/LOAEC (maternal toxicity + developmental toxicity) >50d = 1.08 - 2.15 mg/L air	positiivinen
Hengitys	OECD 414	rotta	LOAEC (maternal toxicity) 6-15d = 1.28 mg/L air	positiivinen
Hengitys	OECD 414	rotta	NOAEC (developmental toxicity) 6-15d >= 2.56 mg/L air	negatiivinen
Hengitys	OECD 414	kani	NOAEC (maternal toxicity + developmental toxicity) 6-18d = 2.56 mg/L air	negatiivinen

Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated (93685-81-5)				
Altistumisreitit	Menetelmä	Laji	Dose	Arviointi
Suun kautta	Rakenteeltaan samankaltaiset (analogiset) C9-14 aliphatics (2-25% aromatic) OECD 414	rotta	NOAEL (reproductive toxicity) male >= 3000 mg/kg/day NOAEL (reproductive toxicity) female >= 1500 mg/kg/day NOAEL (F1) = 750 mg/kg/day	negatiivinen

Silica, amorphous, fumed, crystalline-free (112945-52-5)				
Altistumisreitit	Menetelmä	Laji	Dose	Arviointi
Suun kautta	OECD 414	rotta	NOAEL (maternal toxicity) = 1350 mg/kg bw/day NOAEL (teratogenicity) = 1350 mg/kg bw/day	negatiivinen

Elinkohtainen myrkyllisyys - kerta-altistuminen Saattaa ärsyttää hengityselimiä

Elinkohtainen myrkyllisyys - toistuva altistuminen Vahingoittaa elimiä pitkäaikaisessa tai toistuvassa altistumisessa , kohde-elimet : Keskushermosto , Korvat

STOT - toistuva altistuminen				
Styreeni (100-42-5)				
Altistumisreitit	Menetelmä	Laji	Dose	Huomautuksia
Hengitys	OECD 412	rotta hiiri	NOAEC male (28d) = 3.47 mg/L air NOAEC (ototoxicity) 28d = 2.13 mg/L air NOAEC (28d) = 0.181 mg/L air NOAEC (28d) = 0.688 mg/L air	

Hengitys	Tietoa ei ole käytettävissä	rotta	NOAEC (nasal tract) = 0.85 mg/L air NOAEC (overall) = 2.13 mg/L air NOAEC (ototoxicity) = 0.85 mg/L air LOAEC (ototoxicity) = 3.41 mg/L air NOAEC (overall) = 2.13 mg/L air	
Suun kautta	Tietoa ei ole käytettävissä	rotta	NOAEL (toxicity) = 1000 mg/kg bw/day LOAEL (toxicity) = 2000 mg/kg bw/day	
Suun kautta	Tietoa ei ole käytettävissä	hiiri	NOAEL (toxicity) = 150 mg/kg bw /day LOAEL (toxicity) = 300 mg/kg bw /day	
Hengitys	OECD 453	rotta	LOAEC local (toxicity) = 0.21 mg/L air	

Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated (93685-81-5)

Altistumisreitit	Menetelmä	Laji	Dose	Huomautuksia
Suun kautta	Rakenteeltaan samankaltaiset (analogiset) Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics Similar to OECD 408	rotta	NOAEL (90d) >= 5000 mg/kg bw/day	
Hengitys	Rakenteeltaan samankaltaiset (analogiset) Hydrocarbons, C10-C12, isoalkanes, < 2% aromatics Similar to OECD 413	rotta	NOAEL (90d) > 10400 mg/m ³ air	

Silica, amorphous, fumed, crystalline-free (112945-52-5)

Altistumisreitit	Menetelmä	Laji	Dose	Huomautuksia
Suun kautta	OECD 408	rotta	NOEL (highest dose) 4000 <= 4500 mg/kg bw/day 90d	
Hengitys	OECD 413	rotta	NOEC = 1.3 mg/m ³ air NOEC < 1.3 mg/m ³ air 90d	
Ihon kautta	Tietoa ei ole käytettävissä	kani	NOAEL >= 10000 mg/kg bw/day	

kobolttioktoaattia (136-52-7)

Altistumisreitit	Menetelmä	Laji	Dose	Huomautuksia
Suun kautta	Rakenteeltaan samankaltaiset (analogiset) cobalt dichloride hexahydrate OECD 408	rotta	NOAEL (90d) = 3 mg/kg bw/day	

Aspiraatiovaara

Viskositeetin johdosta tämä tuote ei aiheuta aspiraation vaaraa.

Muut tiedot

Ei mitään

KOHTA 12: Tiedot vaarallisuudesta ympäristölle12.1. Myrkyllisyys

Haitallista vesieliöille, voi aiheuttaa pitkäaikaisia haittavaikutuksia vesiympäristössä. Ei saa huuhdella pintaveteen tai jätevesiviemäristöön

Välitön myrkyllisyys vesieliöille - Tietoja aineosista

Kemiallinen nimi	Myrkyllisyys leville	Myrkyllisyys Daphnialle ja muille veden selkärangattomille.	Myrkyllisyys kalalle	Myrkyllisyys mikro-organismeille
Styreeni 100-42-5	EC50 (72h) = 4.9 mg/L (Pseudokirchnerella subcapitata) EPA OTS 797.1050	EC50 (48h) = 4.7 mg/L (Daphnia magna) NOEC = 1.9 mg/L (Daphnia magna) OECD 202	LC50 (96h) = 4.02 - 10 mg/L (Pimephales promelas) OECD 203	EC (30min) = 500 mg/L (Activated sludge of a predominantly domestic sewage) OECD 209
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	EL50 (72h) > 1000 mg/L (Pseudokirchneriella subcapitata) Read across with : Hydrocarbons, C10-C12, isoalkanes, <2% aromatics OECD 201	LL50 (48h) > 3000 mg/L (Daphnia magna) OECD 202	LL50 (96h) > 1000 mg/L (Oncorhynchus mykiss) Read across with : Hydrocarbons, C10-C12, isoalkanes, <2% aromatics OECD 203	EC50 (3h) > 100 mg/L (Activated sludge of a predominantly domestic sewage) Read across with : Hydrocarbons, C14-C18, n-alkanes, isoalkanes, cyclics, <2% aromatics OECD 209
Silica, amorphous, fumed, crystalline-free 112945-52-5		EL50 (24h) >= 1000 mg/L (Daphnia magna) OECD 202	LC50 (96h) > 10000 mg/L (Brachydanio rerio) OECD 203	
kobolttioktoaattia 136-52-7	EC50 (72h) = 144 µg Codiss./L (Pseudokirchneriella subcapitata) NOEC (72h) = 32.2 µg./L (Pseudokirchneriella subcapitata) LOEC (72h) = 52.7 µg Codiss./L (Pseudokirchneriella subcapitata) OECD 201		LC50 (96h) = 1.512 mg/L (Oncorhynchus mykiss) NOEC (96h) = 0.939 mg/L (Oncorhynchus mykiss) LOEC (96h) = 1.577 mg/L (Oncorhynchus mykiss) ASTM guideline (1996)	EC10 (30 min) = 3.73 mg/L (Activated sludge) EC50 (30 min) = 120 mg/L (Activated sludge) Read across with Cas N°: 7646-79-9 OECD 209

Krooninen myrkyllisyys vesieliöille - Tietoja aineosista

Kemiallinen nimi	Myrkyllisyys leville	Myrkyllisyys Daphnialle ja muille veden selkärangattomille.	Myrkyllisyys kalalle	Myrkyllisyys mikro-organismeille
Styreeni 100-42-5		NOEC (21d) = 1.01 mg/L (Daphnia magna) LOEC (21d) = 2.06 mg/L (Daphnia magna) EC50 (21d) = 1.88 mg/L (Daphnia magna) OECD 203		
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5		NOELR (21d) = 1 mg/l (Daphnia magna) OECD 211		
kobolttioktoaattia 136-52-7	EC50 (7d) = 90.1 µg./L (Lemna minor) NOEC (7d) = 3.0 µg/L (Lemna minor) LOEC (7d) = 8.8 µg/L (Lemna minor) OECD 221	NOECR (21d) = 60.8 µg./L (Daphnia magna) LC50 (21d) = 121.3 mg/L (Daphnia magna) LOECR (21d) = 93.3 µg Codiss./L (Daphnia magna) OECD 211		

Vaikutukset maaliöstöön - Tietoja aineosista

Krooninen myrkyllisyys				
Styreeni (100-42-5)				
Krooninen myrkyllisyys	Menetelmä	Laji	Arvoihin	Huomautuksia

Myrkyllisyys selkärangattomille	OECD 207	Eisenia foetida	LC50 (14d) = 120 mg/kg soil dw LOEC (burrowing time and mean percent weight change) = 65 mg/kg soil dw LOEC (survival) = 180 mg/kg soil dw NOEC (mean percent weight change) = 34 mg/kg soil dw
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12.2. Pysyvyys ja hajoavuus

Kemiallinen nimi	Biologinen hajoaminen	Arviointi
Styreeni 100-42-5	87% (20d) similar to OECD 301D	Helposti biologisesti hajoava
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	68-89.8% (28d) Activated sludge, domestic, non-adapted Read across with : Hydrocarbons, C10-C13, isoalkanes, cyclics, <2% aromatics, Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics, Hydrocarbons, C11-C12, n-alkanes, <2% aromatics, Hydrocarbons, C12-C16, n-alkanes, isoalkanes, cyclics, <2% aromatics OECD 301 F	Helposti biologisesti hajoava
kobolttioktaattia 136-52-7	60% (> 10d), OECD 301 B	Helposti biologisesti hajoava

12.3. Biokertyvyys

Biokertyvyystekijä (BCF)		
Styreeni (100-42-5)		
Menetelmä	Laji	Biokertyvyystekijä (BCF)
Laskentamenetelmä		74

Kemiallinen nimi	log Pow
Styreeni 100-42-5	3
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	6.96

12.4. Liikkuvuus maaperässä

Kemiallinen nimi	LogKoc	Koc
Styreeni 100-42-5	2.55	352

12.5. PBT- ja vPvB-arvioinnin tulokset

Kemiallinen nimi	PBT	vPvB
Styreeni 100-42-5	Tämän aineen ei katsota olevan pysyvä, kertyvä ja myrkyllinen (PBT).	Tämän aineen ei katsota olevan erittäin pysyvä ja erittäin kertyvä (vPvB).
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	Tämän aineen ei katsota olevan pysyvä, kertyvä ja myrkyllinen (PBT).	Tämän aineen ei katsota olevan erittäin pysyvä ja erittäin kertyvä (vPvB).
Silica, amorphous, fumed, crystalline-free 112945-52-5	Tämän aineen ei katsota olevan pysyvä, kertyvä ja myrkyllinen (PBT).	Tämän aineen ei katsota olevan erittäin pysyvä ja erittäin kertyvä (vPvB).

12.6. Muut haitalliset vaikutukset

Ei tunnetta.

KOHTA 13: Jätteen käsittelyyn liittyvät näkökohdat

13.1. Jätteiden käsittelymenetelmät

Jätteet jäännöksistä / käyttämättömistä tuotteista	Hävitetään jätteitä ja vaarallisia jätteitä koskevien eurodirektiivien mukaisesti. Ei saa huuhdella pintaveteen tai jätevesiviemäristöön
Likaantunut pakkaus	Tyhjät säiliöt on toimitettava hyväksytyyn jätteenkäsittelylaitokseen kierrätystä tai hävittämistä varten.
Muut tiedot	EWC:n (European Waste Catalogue) mukaan jättekoodit eivät ole tiettyä tuotetta, vaan tiettyä käyttötarkoitusta vastaavia. Käyttäjän tulee määrittellä jättekoodit sillä perusteella, millä menetelmällä tuotetta on käsitelty.

KOHTA 14: Kuljetustiedot

14.1. YK-numero tai ID numero

ADR/RID	UN1866
IMDG/IMO	UN1866
ICAO/IATA	UN1866
ADN	UN1866

14.2. Kuljetuksessa käytettävä virallinen nimi

ADR/RID	RESIN SOLUTION UN1866, RESIN SOLUTION, 3, PG III, (D/E)
IMDG/IMO	RESIN SOLUTION UN1866, RESIN SOLUTION, 3, PG III, (31°C c.c.)
ICAO/IATA	RESIN SOLUTION UN1866, RESIN SOLUTION, 3, PG III
ADN	Resin solution UN1866, RESIN SOLUTION, 3, PG III

14.3. Kuljetuksen vaaraluokka

ADR/RID	Vaaraluokalla	3
IMDG/IMO	Vaaraluokalla	3
ICAO/IATA	Vaaraluokalla	3
ADN	Vaaraluokalla	3

14.4. Pakkausryhmä

ADR/RID	III
IMDG/IMO	III
ICAO/IATA	III
ADN	III

14.5. Ympäristövaarat

ADR/RID	Ei
IMDG/IMO	Ei
Meriä saastuttava aine	Ei
ICAO/IATA	Ei
ADN	Ei

14.6. Erityiset varotoimet käyttäjälle

ADR/RID	
Luokitustunnus	F1
Tunnelirajoituskoodi	D/E
Rajoitettu määrä	5 L
IMDG/IMO	
EmS	F-E, S-E
Rajoitettu määrä	5 L
ICAO/IATA	
ERG-numero	3L
Rajoitettu määrä	10 L
ADN	
Luokitustunnus	F1
Rajoitettu määrä	5 L
ilmanvaihto	VE01

Erityiset varotoimet käyttäjiä varten

Erityiset varotoimet Tietoa ei ole käytettävissä

14.7. Merikuljetus irtolastina IMO:n asiakirjojen mukaisesti

Kuljetus irtolastina Marpol 73/78 -sopimuksen II liitteen ja IBC-säännösten mukaisesti ei määritettävissä

KOHTA 15: Lainsäädäntöä koskevat tiedot

15.1. Nimenomaisesti ainetta tai seosta koskevat turvallisuus-, terveys- ja ympäristösäännökset tai -lainsäädäntö

Asetus (EY) N:o 1907/2006 (REACH)
Asetus (EY) N:o 1272/2008 (CLP)
Asetus (EU) N:o 830/2015
Direktiivi 88/642/ETY
Direktiivi 98/24/EY
Direktiivi 1999/92/EY
Direktiivi 2012/18/EU

Seoksen käyttöön sovelletaan rajoituksia: ks. Liite XVII asetus 1907/2006/EY (REACH): sarake 1, nro 3; sarake 1, nro 40.

Euroopan Unioni

Tietoja kansallisista määräyksistä
Suomi

Vältettävä annettujen enimmäisyyspitoisuusrajojen ylittämistä (katso kohta 8).

15.2. Kemikaaliturvallisuusarviointi

Kemikaaliturvallisuusarviointi
Altistumisskenaario

Kyllä
Οι πληροφορίες που σχετίζονται με τον έλεγχο των κινδύνων κοινοποιούνται υπό μορφή σεναρίου έκθεσης το οποίο επισυνάπτεται στο δελτίο δεδομένων ασφαλείας.

KOHTA 16: Muut tiedotKohdissa 2 ja 3 mainittujen H-lausekkeiden täydelliset tekstit

H226 - Syttyvä neste ja höyry
H304 - Voi olla tappavaa nieltynä ja joutuessaan hengitysteihin
H315 - Ärsyttää ihoa
H317 - Voi aiheuttaa allergisen ihoreaktion
H319 - Ärsyttää voimakkaasti silmiä
H332 - Haitallista hengitettynä
H335 - Saattaa aiheuttaa hengitysteiden ärsytystä
H360Fd - Saattaa heikentää hedelmällisyyttä. Epäillään vaurioittavan sikiötä
H361d - Epäillään vaurioittavan sikiötä
H372 - Vahingoittaa elimiä pitkäaikaisessa tai toistuvassa altistumisessa hengitettynä
H400 - Erittäin myrkyllistä vesielioille
H410 - Erittäin myrkyllistä vesielioille, pitkäaikaisia haittavaikutuksia
H412 - Haitallista vesielioille, pitkäaikaisia haittavaikutuksia
EUH208 - Voi aiheuttaa allergisen reaktion.

Koulutukseen liittyviä ohjeita

Käsiteltävä hyvän työhygienian ja turvallisuuskäytännön mukaisesti. Noudata käyttöohjeita ihmisille ja ympäristölle aiheutuvien vaarojen välttämiseksi
ECHA

Tietolhteet, joita on käytetty tiedotetta laadittaessa**Edellinen päiväys**

30-Dec-2020

Uusintapäivämäärä

23-Nov-2021

Muutoshuomautus

Päivitetyt käyttöturvallisuustiedotteen kohdat : Kaikki Kohdat

Tämä käyttöturvallisuustiedote täyttää Asetuksen (EY) N:o 1907/2006 vaatimukset**Vastuuvapauslauseke**

Tämän käyttöturvallisuustiedotteen tiedot ovat parhaan tietämyksemme mukaan oikeita laatimispäivänä. Annetut tiedot ovat ainoastaan ohjeellisia turvallista käsittelyä, käyttöä, työstöä, varastointia, kuljetusta, jätteidenkäsittelyä ja päästöjä varten, eikä niitä saa käsittää takuuksi tai laatuspesifikaatioksi. Tiedot koskevat vain mainittua tuotetta, eivätkä välttämättä pidä paikkaansa, jos tuotetta käytetään yhdessä toisen tuotteen kanssa tai prosessissa, ellei erikseen mainittu tekstissä.

Turvallisuustiedotteen loppu

Scenario 1: Manufacturing of UP/VE resins and formulated resins (Gelcoat, Colour Paste, Putty, Bonding paste/Adhesive) (ES1)

This scenario is described by the following combinations of use descriptors. The corresponding contributing scenarios are described in the respective subchapters.

An overall exposure scenario may be described by a number of contributing scenarios which may be subdivided into environmental exposure, worker exposure and consumer exposure.

The following scenarios contribute to the scenario *Manufacturing of UP/VE resins and formulated resins (Gelcoat, Colour Paste, Putty, Bonding paste/Adhesive)*.

This document has been prepared using REACH-Practical-Guide-on-Safe-Use-Information-for-Mixtures-under-REACH-The-LCID-Methodology, considering exposure scenario of relevant raw materials contained in the mixture.

The corresponding release to the environment, exposure of workers resulting from these contributing scenarios is summarized below.

Table 1. Description of ES 1

Free short title	Manufacturing of UP/VE resins and formulated resins (Gelcoat, Colour Paste, Putty, Bonding paste/Adhesive) (ES1)
Systematic title based on use descriptor	ERC 2; PROC 1, 3, 4, 5, 8a, 8b, 9, 15
Name of contributing environmental scenario and corresponding ERC	ERC 2 – Formulation into mixture
Name(s) of contributing worker scenarios and corresponding PROCs	<p>PROC 1 - Chemical production in closed process</p> <p>PROC 3 - Use in closed batch process (synthesis or formulation)</p> <p>PROC 4 - Chemical production where opportunity for exposure arises</p> <p>PROC 5 - Mixing or blending in batch processes (multistage and/or significant contact)</p> <p>PROC 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities</p> <p>PROC 8b - Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC 9 - Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p> <p>PROC 15 - Use of laboratory reagents in small scale laboratories</p>
Contributing Scenario (1) controlling environmental exposure for ERC 2	
Operational conditions (referred to styrene)	
Daily amount used at site	45700 kg/day (referred to styrene)

Release times per year	300 days/year (<i>justification: Continuous release</i>)
Local freshwater dilution factor	41
Local marine water dilution factor	100
Release fraction to air from process	0.102 %
Release fraction to wastewater from process	0.00063 %
Release fraction to soil from process	0.0025 %
Fraction tonnage to region	10 %
Fraction used at main source	60 %
STP	yes
River flow rate	18000 m ³ /day
Municipal sewage treatment plant discharge	2000000 L/day
Other modified EUSES values (referred to styrene)	
Fraction released to agricultural soil (Femis.agric)	0 % (<i>justification: No direct release to soil (EU Risk Assessment Report on Styrene, European Communities, 2002)</i>)
Fraction released to industrial soil (Femis.ind)	0 % (<i>justification: No direct release to soil (EU Risk Assessment Report on Styrene, European Communities, 2002)</i>)
Fraction released to waste water (Femis.water)	0.00063 % (<i>justification: EU Risk Assessment Report, 2002</i>)
Fraction released to air (Femis.air)	0.102 % (<i>justification: EU Risk Assessment Report, 2002</i>)
Fraction used at main source	60 % (<i>justification: Value adopted to account for Worst-case European manufacturing site</i>)
Fraction of emission directed to water by local STP (Fstp.water)	0.081 - (<i>justification: Efficiency STP 91.9%</i>)
Contributing Scenario (2) controlling industrial worker exposure for PROC 1	
Name of contributing scenario	1 - Use in closed process, no likelihood of exposure
Scenario subtitle	Use in contained batch processes. Closed processes
Qualitative Risk Assessment	
General	Use in semi-automated and predominantly enclosed filling lines. Provide a good standard of general ventilation. Natural ventilation is from windows and doors etc. Controlled ventilation means air is supplied or removed by a powered fan. Ensure good work practices are implemented. Provide basic employe training to prevent/minimize exposures. Use suitable chemically resistant gloves, tested to EN374. Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %

Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	240 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	enhanced (>30%)
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	no
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	no
Contributing Scenario (3) controlling industrial worker exposure for PROC 3	
Name of contributing scenario	3 - Use in closed batch process (synthesis or formulation)
Scenario subtitle	Bulk transfers. Receipt and storage of raw materials in bulk or as packed goods, indoor and outdoor; Raw material assembly and charging; dispensing of liquids and solids via pipeline;
Qualitative Risk Assessment	
General	Use in semi-automated and predominantly enclosed filling lines; Use bulk or semi-bulk handling systems. Drain down and flush system prior to equipment break-in or maintenance. Provide extract ventilation to points where emissions occur. Ensure good work practices are implemented. Provide basic employe training to prevent/minimize exposures. Use suitable chemically resistant gloves, tested to EN374. Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	15 min.-1 hour
Frequency of use	5 days / week

Human factors not influenced by risk management	
Exposed skin surface	240 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	enhanced (>30%)
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	Yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	no
Local exhaust ventilation	Use local exhaust ventilation with adequate effectiveness
Contributing Scenario (4) controlling industrial worker exposure for PROC 3	
Name of contributing scenario	3 - Use in closed batch process (synthesis or formulation)
Scenario subtitle	Dissolving linear UP/VE polymer in blending vessel (or dissolver)
Qualitative Risk Assessment	
General	Use in semi-automated and predominantly enclosed filling lines; Drain down and flush system prior to equipment break-in or maintenance. Apply vessel entry procedures including use of forced supplied air. Ensure good work practices are implemented. Provide basic employe training to prevent/minimize exposures. Use suitable chemically resistant gloves, tested to EN374. Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	240 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	good (30%)

Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	no
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	no
Contributing Scenario (5) controlling industrial worker exposure for PROC 3	
Name of contributing scenario	3 - Use in closed batch process (synthesis or formulation)
Scenario subtitle	Equipment cleaning and maintenance. Cleaning and maintenance of blending vessel, roadtankers etc.
Qualitative Risk Assessment	
General	Use in semi-automated and predominantly enclosed filling lines. Drain or remove substance from equipment prior to break-in or maintenance. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. Ensure good work practices are implemented. Provide basic employe training to prevent/minimize exposures. Use suitable chemically resistant gloves, tested to EN374. Use suitable eye protection. In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	240 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	good (30%)
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes

Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure might occur
Local exhaust ventilation	Use local exhaust ventilation with adequate effectiveness
Contributing Scenario (6) controlling industrial worker exposure for PROC 4	
Name of contributing scenario	4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Scenario subtitle	Material transfers. All internal transport. Raw material assembly and charging / raw material dispensing of liquids and solids manually from bulk storage or packed goods into blending tank.
Qualitative Risk Assessment	
General	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Provide extract ventilation to points where emissions occur. Ensure good work practices are implemented. Provide basic employee training to prevent/minimize exposures. Use suitable chemically resistant gloves, tested to EN374. Use suitable eye protection. In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	480 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	Good (>30%)
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure might occur

Local exhaust ventilation	Use local exhaust ventilation with adequate effectiveness
Contributing Scenario (7) controlling industrial worker exposure for PROC 4	
Name of contributing scenario	4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Scenario subtitle	Process sampling.
Qualitative Risk Assessment	
General	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour): Avoid dip sampling. Ensure good work practices are implemented. Provide basic employe training to prevent/minimize exposures. Use suitable chemically resistant gloves, tested to EN374. Use suitable eye protection. In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	15 min.-1 hour
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	480 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	Good (>30%)
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure might occur
Local exhaust ventilation	Use local exhaust ventilation with adequate effectiveness
Contributing Scenario (8) controlling industrial worker exposure for PROC 5	
Name of contributing scenario	5 - Mixing or blending in batch processes (multistage and/or significant contact)

Scenario subtitle	Drum/batch transfers; Pouring from small containers; Transfer from/pouring from containers; Mixing operations (open systems). Mixing liquid and solid components / into final formulated resin in blending vessel
Qualitative Risk Assessment	
General	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Keep lids of containers closed during blending. Ensure good work practices are implemented. Provide basic employe training to prevent/minimize exposures. Use suitable chemically resistant gloves, tested to EN374. Use suitable eye protection. Wear suitable coveralls to prevent exposure to the skin. In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	
Physical state	liquid
Concentration in substance	100%
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	480 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure occurs
Local exhaust ventilation	inhalation: 90 % (<i>justification: Use local exhaust ventilation with adequate effectiveness</i>)
Contributing Scenario (9) controlling industrial worker exposure for PROC 8A	
Name of contributing scenario	8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Scenario subtitle	Equipment cleaning and maintenance. Cleaning and maintenance of pipes, pumps, filters, etc.
Qualitative Risk Assessment	

General	<p>Drain down system prior to equipment break-in or maintenance.</p> <p>Drain or remove substance from equipment prior to break-in or maintenance.</p> <p>Ensure good work practices are implemented</p> <p>Provide basic employe training to prevent/minimize exposures</p> <p>Wear suitable coveralls to prevent exposure to the skin.</p> <p>Use suitable eye protection.</p> <p>Use suitable chemically resistant gloves, tested to EN374.</p> <p>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.</p>
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure occurs
Local exhaust ventilation	inhalation: 70 % (<i>justification: Use local exhaust ventilation with adequate effectiveness</i>)
Contributing Scenario (10) controlling industrial worker exposure for PROC 8A	
Name of contributing scenario	8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Scenario subtitle	<p>Disposal of wastes.</p> <p>Handling of non cured waste;</p> <p>Waste management / handling and storage of waste for removal for off-site treatment or for on-site treatment like incineration and/or biological waste water treatment</p>
Qualitative Risk Assessment	

General	<p>Provide a good standard of general ventilation. Controlled ventilation means air is supplied or removed by a powered fan.</p> <p>Ensure good work practices are implemented</p> <p>Provide basic employe training to prevent/minimize exposures</p> <p>Dispose of empty containers and wastes safely.</p> <p>Dispose of waste in accordance with environmental legislation.</p> <p>Use suitable chemically resistant gloves, tested to EN374.</p> <p>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.</p> <p>Use suitable eye protection.</p>
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	<1 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm ²
Other given operational conditions affecting workers exposure	
Location	Indoors/outdoor
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	no
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure might occur
Contributing Scenario (11) controlling industrial worker exposure for PROC 8b	
Name of contributing scenario	8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities
Scenario subtitle	<p>Bulk transfers.</p> <p>All activities related to transport finished product to customer.</p> <p>Dispensing final UP/VE resin (linear UP/VE polymer + styrene + additives) into roadtanker</p>
Qualitative Risk Assessment	

General	<p>Fill containers/cans at dedicated fill points supplied with local extract ventilation.</p> <p>Ensure good work practices are implemented</p> <p>Provide basic employe training to prevent/minimize exposures</p> <p>Use suitable chemically resistant gloves, tested to EN374.</p> <p>Use suitable eye protection.</p> <p>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.</p>
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure might occur
Local exhaust ventilation	inhalation: 70 % (<i>justification: Use local exhaust ventilation with adequate effectiveness</i>)
Contributing Scenario (12) controlling industrial worker exposure for PROC 9	
Name of contributing scenario	9 -Transfer of chemicals into small containers (dedicated filling line)
Scenario subtitle	<p>Bulk transfers.</p> <p>All activities related to transport finished product to customer.</p> <p>Dispensing final UP/VE resin (linear UP/VE polymer + styrene + additives) / into storage tank, IBC, drum or pail.</p>
Qualitative Risk Assessment	

General	Fill containers/cans at dedicated fill points supplied with local extract ventilation. Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Use suitable chemically resistant gloves, tested to EN374. Use suitable eye protection.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	480 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	no
Local exhaust ventilation	inhalation: 90 % (<i>justification: Use local exhaust ventilation with adequate effectiveness</i>)
Contributing Scenario (13) controlling industrial worker exposure for PROC 15	
Name of contributing scenario	15 - Use of laboratory reagents in small scale laboratories
Scenario subtitle	Laboratory activities. All laboratory activities. Quality control work of samples from reactor and blending vessel. R&D work including handling of samples from 1 kg to 1 drum.
Qualitative Risk Assessment	
General	Carry out in a vented booth or extracted enclosure. Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Use suitable eye protection. Use suitable chemically resistant gloves, tested to EN374.
Product characteristics	

Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	240 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	no
Local exhaust ventilation	inhalation: 90 % (<i>justification: Use local exhaust ventilation with adequate effectiveness</i>)

Scenario 2: FRP manufacturing in an industrial setting, using UP/VE resins and/or formulated resins (gelcoat, bonding paste, putty etc.) (ES2)

This scenario is described by the following combinations of use descriptors. The corresponding contributing scenarios are described in the respective subchapters.

An overall exposure scenario may be described by a number of contributing scenarios which may be subdivided into environmental exposure, worker exposure and consumer exposure.

The following scenarios contribute to the scenario *FRP manufacturing in an industrial setting, using UP/VE resins and/or formulated resins (gelcoat, bonding paste, putty etc.)*.

This document has been prepared using REACH-Practical-Guide-on-Safe-Use-Information-for-Mixtures-under-REACH-The-LCID-Methodology, considering exposure scenario of relevant raw materials contained in the mixture.

The corresponding release to the environment, exposure of workers resulting from these contributing scenarios is summarized below.

Table 2. Description of ES 2

Free short title	FRP manufacturing in an industrial setting, using UP/VE resins and/or formulated resins (gelcoat, bonding paste, putty etc.) (ES2)
Systematic title based on use descriptor	ERC 6D; PROC 3, 5, 7, 8A, 10, 13, 14, 15
Name of contributing environmental scenario and corresponding ERC	ERC 6d Production of resins
Name(s) of contributing worker scenarios and corresponding PROCs	<p>PROC 3 - Use in closed batch process (synthesis or formulation)</p> <p>PROC 5 - Mixing or blending in batch processes (multistage and/or significant contact)</p> <p>PROC 7 - Industrial spraying</p> <p>PROC 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities</p> <p>PROC 10 - Roller application or brushing</p> <p>PROC 13 - Treatment of articles by dipping and pouring</p> <p>PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation</p> <p>PROC 15 - Use of laboratory reagents in small scale laboratories</p>
Contributing Scenario (1) controlling environmental exposure for ERC 6D	
Operational conditions (referred to styrene)	
Daily amount used at site	161000 kg/day (referred to styrene)
Release times per year	300 days/year (justification: Continuous release)
Local freshwater dilution factor	10

Local marine water dilution factor	100
Release fraction to air from process	0.102 %
Release fraction to wastewater from process	0.00063 %
Release fraction to soil from process	0.025 %
Fraction tonnage to region	10 %
Fraction used at main source	60 %
STP	yes
River flow rate	18000 m ³ /day
Municipal sewage treatment plant discharge	2000000 L/day
Other modified EUSES values	
Fraction released to agricultural soil (Femis.agric)	0 % (<i>justification: No direct release to soil (EU Risk Assessment Report on Styrene, European Communities, 2002)</i>)
Fraction released to industrial soil (Femis.ind)	0 % (<i>justification: No direct release to soil (EU Risk Assessment Report on Styrene, European Communities, 2002)</i>)
Fraction released to waste water (Femis.water)	0.00063 % (<i>justification: EU Risk Assessment Report, 2002</i>)
Fraction released to air (Femis.air)	0.102 % (<i>justification: EU Risk Assessment Report, 2002</i>)
Fraction used at main source	60 % (<i>justification: Value adopted to account for Worst-case European manufacturing site</i>)
Fraction of emission directed to water by local STP (Fstp.water)	0.081 - (<i>justification: Efficiency STP 91.9%</i>)
Contributing Scenario (2) controlling industrial worker exposure for PROC 3	
Name of contributing scenario	3 - Use in closed batch process (synthesis or formulation)
Scenario subtitle	Material transfers; Automated process with (semi) closed systems; Use in contained batch processes. Resin injection and transfer processes, such as vacuum infusion, RTM, impregnation of sewer relining sleeves
Qualitative Risk Assessment	
General	Put lids on containers immediately after use. Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Use suitable eye protection. Use suitable chemically resistant gloves, tested to EN374.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)

Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	240 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	good (30%)
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	no
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	no
Contributing Scenario (3) controlling industrial worker exposure for PROC 3	
Name of contributing scenario	3 - Use in closed batch process (synthesis or formulation)
Scenario subtitle	Material transfers. Product delivery/storage - delivery of bulk and packaged products - outdoor / indoor
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Use suitable eye protection. Use suitable chemically resistant gloves, tested to EN374.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	240 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	good (30%)
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	no

Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	no
Contributing Scenario (4) controlling industrial worker exposure for PROC 5	
Name of contributing scenario	5 - Mixing or blending in batch processes (multistage and/or significant contact)
Scenario subtitle	Drum/batch transfers; Pouring from small containers; Transfer from/pouring from containers; Mixing operations (open systems). Loading of mixing equipment; Preparation of material for application; (liquid products) - batch, indoor
Qualitative Risk Assessment	
General	Put lids on containers immediately after use. Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Use suitable eye protection. Use suitable chemically resistant gloves, tested to EN374. Wear suitable coveralls to prevent exposure to the skin. In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	480 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure occurs
Local exhaust ventilation	inhalation: 90 % (<i>justification: Use local exhaust ventilation with adequate effectiveness</i>)

Contributing Scenario (5) controlling industrial worker exposure for PROC 5	
Name of contributing scenario	5 - Mixing or blending in batch processes (multistage and/or significant contact)
Scenario subtitle	Casting operations; Mixing operations (open systems). Casting and mixing operations in (semi-) open containers. Examples are centrifugal casting, casting of polymer concrete and artificial marble and the manufacturing of SMC / BMC/ TMC, etc
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Use suitable eye protection. Use suitable chemically resistant gloves, tested to EN374. Wear suitable coveralls to prevent exposure to the skin. In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	
Physical state	liquid
Concentration in substance	5-60%
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	480 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure occur
Local exhaust ventilation	inhalation: 90 % (<i>justification: Use local exhaust ventilation with adequate effectiveness</i>)
Contributing Scenario (6) controlling industrial worker exposure for PROC 5	
Name of contributing scenario	5 - Mixing or blending in batch processes (multistage and/or significant contact)

Scenario subtitle	General exposures (closed systems). Mixing liquid and solid components / into final formulated resin in blending vessel; Examples are gelcoat blending and compounding, formulation of repair putties, bonding pastes, chemical anchoring, etc
Qualitative Risk Assessment	
General	Put lids on containers immediately after use. Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Use suitable eye protection. Use suitable chemically resistant gloves, tested to EN374. Wear suitable coveralls to prevent exposure to the skin. In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	480 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	enhanced (70%)
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	Yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure occurs
Local exhaust ventilation	inhalation: 70 % (<i>justification: Use local exhaust ventilation with adequate effectiveness</i>)
Contributing Scenario (7) controlling industrial worker exposure for PROC 7	
Name of contributing scenario	7 - Industrial spraying
Scenario subtitle	Spraying; Spraying (automatic/robotic) All open mould applications where resins is applied by automated spraying or by robot in a spray cabin without direct worker involvement. Examples are spray lamination, gelcoat spraying and “chop-hoop” filament winding

Qualitative Risk Assessment	
General	<p>Ensure the ventilation system is regularly maintained and tested</p> <p>Dispose of empty containers and wastes safely</p> <p>Ensure good work practices are implemented</p> <p>Provide basic employee training to prevent/minimize exposures</p> <p>Wear suitable coveralls to prevent exposure to the skin</p> <p>Use suitable eye protection.</p> <p>Wear suitable face shield</p> <p>Wear chemically resistant gloves tested to EN374, in combination with intensive management supervision control.</p> <p>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.</p>
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	1,500 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	Yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure might occur
Carry out in a vented booth or extracted enclosure	inhalation: 95 % (<i>justification: Carry out in a vented booth or extracted enclosure</i>)
Contributing Scenario (8) controlling industrial worker exposure for PROC 7	
Name of contributing scenario	7 - Industrial spraying
Scenario subtitle	<p>Spraying;</p> <p>Spraying (manually)</p> <p>All open mould applications where resins is applied by manual spraying in an open work environment. Examples are spray lamination, gelcoat spraying and “chop-hoop” filament winding</p>
Qualitative Risk Assessment	

General	Carefully pour from containers Use long handled tools where possible Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Use suitable eye protection. Wear suitable face shield. Wear suitable coveralls to prevent exposure to the skin Wear chemically resistant gloves tested to EN374 in combination with intensive management supervision control. Wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	1,500 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	good (30%)
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	Yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Yes
Local exhaust ventilation	inhalation: 95 % (<i>justification: Use local exhaust ventilation with adequate effectiveness</i>)
Contributing Scenario (9) controlling industrial worker exposure for PROC 8A	
Name of contributing scenario	8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Scenario subtitle	Equipment maintenance; Maintenance of small items. Equipment cleaning and maintenance
Qualitative Risk Assessment	

General	<p>Drain or remove substance from equipment prior to break-in or maintenance.</p> <p>Ensure good work practices are implemented</p> <p>Provide basic employe training to prevent/minimize exposures</p> <p>Use suitable eye protection.</p> <p>Use suitable chemically resistant gloves, tested to EN374.</p> <p>Wear suitable coveralls to prevent exposure to the skin.</p> <p>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.</p>
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	Yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure might occur
Local exhaust ventilation	inhalation: 70 % (<i>justification: Use local exhaust ventilation with adequate effectiveness</i>)
Contributing Scenario (10) controlling industrial worker exposure for PROC 8A	
Name of contributing scenario	8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Scenario subtitle	<p>Disposal of wastes.</p> <p>Handling of non cured waste; Waste management / handling and storage of waste for removal for off-site treatment or for on-site treatment like incineration and/or biological waste water treatment</p>
Qualitative Risk Assessment	

General	Put lids on containers immediately after use. Contain and dispose of waste according to local regulations Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Use suitable eye protection. Use suitable chemically resistant gloves, tested to EN374. Wear suitable coveralls to prevent exposure to the skin. In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm ²
Other given operational conditions affecting workers exposure	
Location	Indoors/outdoor
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	Yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure might occur
Local exhaust ventilation	inhalation: 90 % (<i>justification: Use local exhaust ventilation with adequate effectiveness</i>)
Contributing Scenario (11) controlling industrial worker exposure for PROC 10	
Name of contributing scenario	10 - Roller application or brushing
Scenario subtitle	Rolling, Brushing; Roller, spreader, flow application All open mould applications where resins is applied by brushing, rolling and other low energy spreading operations; Examples are handlamination, gelcoatbrushing, filament winding
Qualitative Risk Assessment	

General	Use long handled brushes and rollers where possible Ensure the ventilation system is regularly maintained and tested Dispose of empty containers and wastes safely Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Use suitable eye protection. Use suitable chemically resistant gloves, tested to EN374. Wear suitable coveralls to prevent exposure to the skin In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	enhanced (70%)
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	Yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure occur
Local exhaust ventilation	inhalation: 70 % (<i>justification: Use local exhaust ventilation with adequate effectiveness</i>)
Contributing Scenario (12) controlling industrial worker exposure for PROC 10	
Name of contributing scenario	10 - Roller application or brushing
Scenario subtitle	Dipping, immersion and pouring; Rolling, Brushing; Roller, spreader, flow application Application of repair putties; Application of bonding pastes / adhesives.
Qualitative Risk Assessment	

General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Use suitable eye protection. Use suitable chemically resistant gloves, tested to EN374. Wear suitable coveralls to prevent exposure to the skin. Wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	
Physical state	liquid
Concentration in substance	100%
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	enhanced (70%)
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	Yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	yes
Local exhaust ventilation	inhalation: 70 % (<i>justification: Use local exhaust ventilation with adequate effectiveness</i>)
Contributing Scenario (13) controlling industrial worker exposure for PROC 13	
Name of contributing scenario	13 - Treatment of articles by dipping and pouring
Scenario subtitle	Dipping, immersion and pouring; Continuous process. Continuous processes with open impregnation steps, such as pultrusion with open impregnation baths and (semi-) continuous production of flat laminates
Qualitative Risk Assessment	

General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Use suitable eye protection. Use suitable chemically resistant gloves, tested to EN374. Wear suitable coveralls to prevent exposure to the skin. In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	480 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure occurs
Local exhaust ventilation	inhalation: 90 % (<i>justification: Use local exhaust ventilation with adequate effectiveness</i>)
Contributing Scenario (14) controlling industrial worker exposure for PROC 14	
Name of contributing scenario	14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation
Scenario subtitle	Material transfers; Production or preparation or articles by tableting, compression, extrusion or pelletisation; Treatment by heating; Batch processes at elevated temperatures. Processes where curing of UP / VE resins takes place at high temperature. Examples are pultrusion with injection dies and processing of SMC / BMC / TMC, etc
Qualitative Risk Assessment	

General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures In case of potential exposure: Use suitable eye protection. Use suitable chemically resistant gloves, tested to EN374. In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	
Physical state	liquid
Concentration in substance	100%
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	480 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	enhanced (70%)
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	Yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure occurs
Local exhaust ventilation	inhalation: 70 % (<i>justification: Use local exhaust ventilation with adequate effectiveness</i>)
Contributing Scenario (15) controlling industrial worker exposure for PROC 15	
Name of contributing scenario	15 - Use of laboratory reagents in small scale laboratories
Scenario subtitle	Laboratory activities. Quality control work of samples from blending vessel; R&D work including handling of samples from 1 kg to 1 drum
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Use suitable eye protection. Use suitable chemically resistant gloves, tested to EN374.
Product characteristics	
Physical state	liquid

Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	240 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Domain	industrial
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	Yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	No
Local exhaust ventilation	inhalation: 90 % (<i>justification: Use local exhaust ventilation with adequate effectiveness</i>)

Scenario 3: FRP manufacturing in a professional setting, using UP/VE resins and/or formulated resins (gelcoat, bonding paste, putty etc.) (ES3)

This scenario is described by the following combinations of use descriptors. The corresponding contributing scenarios are described in the respective subchapters.

An overall exposure scenario may be described by a number of contributing scenarios which may be subdivided into environmental exposure, worker exposure and consumer exposure.

The following scenarios contribute to the scenario *FRP manufacturing in a professional setting, using UP/VE resins and/or formulated resins (gelcoat, bonding paste, putty etc.)*.

This document has been prepared using REACH-Practical-Guide-on-Safe-Use-Information-for-Mixtures-under-REACH-The-LCID-Methodology, considering exposure scenario of relevant raw materials contained in the mixture.

The corresponding release to the environment, exposure of workers resulting from these contributing scenarios is summarized below.

Table 2. Description of ES 3

Free short title	FRP manufacturing in a professional setting, using UP/VE resins and/or formulated resins (gelcoat, bonding paste, putty etc.) (ES8)
Systematic title based on use descriptor	ERC 6C; PROC 3, 4, 5, 8A, 10, 11
Name of contributing environmental scenario and corresponding ERC	ERC 6c Production of plastics
Name(s) of contributing worker scenarios and corresponding PROCs	<p>PROC 3 - Use in closed batch process (synthesis or formulation)</p> <p>PROC 4 - Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC 5 - Mixing or blending in batch processes (multistage and/or significant contact)</p> <p>PROC 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities</p> <p>PROC 10 - Roller application or brushing</p> <p>PROC 11 - Non industrial spraying</p>
Contributing Scenario (1) controlling environmental exposure for ERC 6C	
Operational conditions (<i>referred to styrene</i>)	
Daily amount used at site	48300 kg/day (<i>referred to styrene</i>)
Release times per year	300 days/year (<i>justification: Continuous release</i>)
Local freshwater dilution factor	10
Local marine water dilution factor	100
Release fraction to air from process	0.102 %
Release fraction to wastewater from process	0.000012 %

Release fraction to soil from process	0 %
Fraction tonnage to region	10 %
Fraction used at main source	60 %
STP	Yes
River flow rate	18000 m ³ /day
Municipal sewage treatment plant discharge	2000000 L/day
Other modified EUSES values	
Fraction released to agricultural soil (Femis.agric)	0 % (justification: No direct release to soil (EU Risk Assessment Report on Styrene, European Communities, 2002))
Fraction released to industrial soil (Femis.ind)	0 % (justification: No direct release to soil (EU Risk Assessment Report on Styrene, European Communities, 2002))
Fraction released to waste water (Femis.water)	0.000012 % (justification: EU Risk Assessment Report, 2002)
Fraction released to air (Femis.air)	0.102 % (justification: EU Risk Assessment Report, 2002)
Fraction used at main source	60 % (justification: Value adopted to account for worst-case European manufacturing site)
Fraction of emission directed to water by local STP (Fstp.water)	0.081 - (justification: Efficiency STP 91.9%)
Contributing Scenario (2) controlling professional worker exposure for PROC 3	
Name of contributing scenario	3 - Use in closed batch process (synthesis or formulation)
Scenario subtitle	Use in contained batch processes. Application of chemical anchoring
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures In case of potential exposure: Use suitable eye protection. Use suitable chemically resistant gloves, tested to EN374. In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	
Physical state	liquid
Concentration in substance	100%
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	240 cm ²

Other given operational conditions affecting workers exposure	
Location	outdoors (30%)
Domain	professional
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	No
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure might occur
Contributing Scenario (3) controlling professional worker exposure for PROC 4	
Name of contributing scenario	4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Scenario subtitle	Use in contained batch processes. Sewer relining operation
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Use suitable eye protection. Use suitable chemically resistant gloves, tested to EN374. Wear suitable coveralls to prevent exposure to the skin. In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	480 cm ²
Other given operational conditions affecting workers exposure	
Location	outdoors (30%)
Domain	professional
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	No
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure occurs

Contributing Scenario (4) controlling professional worker exposure for PROC 5

Name of contributing scenario	5 - Mixing or blending in batch processes (multistage and/or significant contact)
Scenario subtitle	Material transfers; Pouring from small containers. Preparation of material for application (liquids) - transfer of material from one container to another; Formulating / blending resins, gelcoats, bonding pastes, putties etc. in blending vessels
Qualitative Risk Assessment	
General	Use drum pumps. Put lids on containers immediately after use. Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Use suitable eye protection. Use suitable chemically resistant gloves, tested to EN374. Wear suitable coveralls to prevent exposure to the skin. In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	480 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	good (30%)
Domain	professional
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	Yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure occurs
Local exhaust ventilation	Use local exhaust ventilation with adequate effectiveness

Contributing Scenario (5) controlling professional worker exposure for PROC 8A

Name of contributing scenario	8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Scenario subtitle	Equipment maintenance; Maintenance of small items. Equipment cleaning and maintenance
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Use suitable eye protection. Use suitable chemically resistant gloves, tested to EN374. Wear suitable coveralls to prevent exposure to the skin. In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	15 mins to 1 hour
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	good (30%)
Domain	professional
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	Yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure might occur
Local exhaust ventilation	Use local exhaust ventilation with adequate effectiveness
Contributing Scenario (6) controlling professional worker exposure for PROC 8A	
Name of contributing scenario	8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities
Scenario subtitle	Disposal of wastes. Handling of non cured waste; Waste management / handling and storage of waste for removal for off-site treatment or for on-site treatment like incineration and/or biological waste water treatment
Qualitative Risk Assessment	

General	Dispose of empty containers and wastes safely Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Use suitable eye protection. Use suitable chemically resistant gloves, tested to EN374. Wear suitable coveralls to prevent exposure to the skin. In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	15 mins to 1 hour
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	good (30%)
Domain	professional
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure occurs
Local exhaust ventilation	Use local exhaust ventilation with adequate effectiveness
Contributing Scenario (7) controlling professional worker exposure for PROC 10	
Name of contributing scenario	10 - Roller application or brushing
Scenario subtitle	Rolling, Brushing; Roller, spreader, flow application All open mould applications where resins is applied by brushing, rolling and other low energy spreading operations; Examples are handlamination, gelcoatbrushing, semi-continuous production of flat panels and laminates
Qualitative Risk Assessment	

General	Use long handled brushes and rollers where possible Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Use suitable eye protection. Use suitable chemically resistant gloves, tested to EN374. Wear suitable coveralls to prevent exposure to the skin. In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	
Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	good (30%)
Domain	professional
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	Use respiratory protection when exposure occurs
Local exhaust ventilation	Use local exhaust ventilation with adequate effectiveness
Contributing Scenario (8) controlling professional worker exposure for PROC 10	
Name of contributing scenario	10 - Roller application or brushing
Scenario subtitle	Dipping, immersion and pouring; Rolling, Brushing; Roller, spreader, flow application Application of repair putties; Application of bonding pastes / adhesives.
Qualitative Risk Assessment	

General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Use suitable eye protection. Use suitable chemically resistant gloves, tested to EN374. Wear suitable coveralls to prevent exposure to the skin. Wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	
Physical state	liquid
Concentration in substance	100%
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	good (30%)
Domain	professional
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	no
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	yes
Contributing Scenario (9) controlling professional worker exposure for PROC 10	
Name of contributing scenario	10 - Roller application or brushing
Scenario subtitle	Dipping, immersion and pouring; Rolling, Brushing; Roller, spreader, flow application Application of floorings, mastics, coatings, castings
Qualitative Risk Assessment	
General	Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Use suitable eye protection. Use suitable chemically resistant gloves, tested to EN374. Wear suitable coveralls to prevent exposure to the skin. Wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	

Physical state	liquid
Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	>4 hours (default)
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	960 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	good (30%)
Domain	professional
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	yes
Local exhaust ventilation	Use local exhaust ventilation with adequate effectiveness
Contributing Scenario (10) controlling professional worker exposure for PROC 11	
Name of contributing scenario	11 - Non industrial spraying
Scenario subtitle	Spraying; Spraying (manually) All open mould applications where resins is applied by manual spraying in an open work environment. Examples are spray lamination, gelcoat spraying and “chop-hoop” filament winding
Qualitative Risk Assessment	
General	Keep people not involved in the activity, away from the operation Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Use suitable eye protection. Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin. Wear chemically resistant gloves, tested to EN374, in combination with intensive management supervision control. Wear a suitable respiratory protection with adequate effectiveness.
Product characteristics	
Physical state	liquid

Concentration in substance	100 %
Fugacity / Dustiness	medium
Frequency and duration of use	
Duration of activity	1 - 4 hours
Frequency of use	5 days / week
Human factors not influenced by risk management	
Exposed skin surface	1,500 cm ²
Other given operational conditions affecting workers exposure	
Location	indoors
Ventilation	good (30%)
Domain	professional
Technical conditions and measures to control dispersion and exposure	
Local exhaust ventilation	yes
Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS	
Protective gloves	Gloves APF 5 80 %
Respiratory protection	yes
Local exhaust ventilation	Use local exhaust ventilation with adequate effectiveness