VEILIGHEIDSINFORMATIEBLAD

volgens Verordening (EG) Nr. 1907/2006

SDS n° : FP17778

NORSODYNE H 23101 TAE

Eerdere datum 11-Oct-2018 **Herzieningsdatum** 23-Aug-2019 **Versie:** 3

RUBRIEK 1: Identificatie van de stof of het mengsel en van de vennootschap/onderneming

1.1. Productidentificatie

Productbenaming	**NORSODYNE H 23101 TAE**
Chemische naam	**Onverzadigd polyesterhars**
Zuivere stof/mengsel	Mengsel

1.2. Relevant geïdentificeerd gebruik van de stof of het mengsel en ontraden gebruik

Geïdentificeerd gebruik Harsen voor composiet-kunststoffen. Voor gebruik in contact met etenswaren, gelieve ons te benaderen.

1.3. Details betreffende de verstrekker van het veiligheidsinformatieblad

Leverancier

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.
Avenida República Argentina S/N 09200 Miranda de Ebro - Burgos, Spain
Tel : (+34) 947 027 202 - Fax : (+34) 947 31 45 40

Polynt Composites Poland Sp. z o.o.
ul. Grabska 11d, 32-005 Niepołomice, Poland
Tel : (+48) 12 281 42 00 - Fax : (+48) 12 281 42 01

Polynt Composites Norway AS
Lilleborggata 4, 1630 Gamle Fredrikstad, Norway
Tel : (+47) 693 570 00 - Fax : (+47) 693 570 01

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

De leverancier van het product, is samen met de hierboven genoemde fabrieken, degene aangegeven op het etiket en/of in de verkoop documenten

Voor verdere gegevens, contacteer

E-mailadres	sdsregulatory@polynt.com
Internet-adres	http://www.polynt.com

1.4. Telefoonnummer voor noodgevallen

Dit telefoonnummer is bereikbaar gedurende 24 uur per dag , 7 dagen per week	
Europe :	+44 1235 239 670

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

Telefoonnummer van het gifinformatiecentrum

Europees noodnummer : 112
Nationaal Vergiftigingen Informatie Centrum (NVIC) : 030-274 8888
(24 uur per dag en 7 dagen in de week)

RUBRIEK 2: Identificatie van de gevaren

2.1. Indeling van de stof of het mengsel

Classificatie van de stof of het preparaat - GHS/CLP (n° 1272/2008)

Huidcorrosie/-irritatie	Categorie 2
Ernstig oogletsel/oogirritatie	Categorie 2
Huidsensibilisering	Categorie 1 Subcategorie 1A
Voortplantingstoxiciteit	Categorie 2
Specifieke doelorgaan systemische toxiciteit (enkelvoudige blootstelling)	Categorie 3
Specifieke doelorgaantoxiciteit - herhaalde blootstelling	Categorie 1
Chronische aquatische toxiciteit	Categorie 3
Ontvlambare vloeistoffen	Categorie 3

2.2. Etiketteringselementen

Bevat Kobaltoctoaat, styreen

Signaalwoord

Gevaar

Gevarenaanduidingen

H315 - Veroorzaakt huidirritatie
H317 - Kan een allergische huidreactie veroorzaken
H319 - Veroorzaakt ernstige oogirritatie
H335 - Kan irritatie van de luchtwegen veroorzaken
H361d - Wordt ervan verdacht het ongeboren kind te schaden
H372 - Veroorzaakt schade aan organen bij langdurige of herhaalde blootstelling bij inademing
H412 - Schadelijk voor in het water levende organismen, met langdurige gevolgen

Fysische gevaren
H226 - Ontvlambare vloeistof en damp

EU H-zin(nen)

EUH208 - bevat ftaalzuuranhydride- Kan een allergische reactie veroorzaken.

Veiligheidsaanbevelingen

P210 - Verwijderd houden van warmte, hete oppervlakken, vonken, open vuur en andere ontstekingsbronnen. Niet roken
P243 - Maatregelen treffen om ontladingen van statische elektriciteit te voorkomen
P260 - Damp niet inademen
P273 - Voorkom lozing in het milieu
P280 - Beschermende handschoenen/beschermende kleding/oogbescherming/gelaatsbescherming dragen
P302 + P352 - BIJ CONTACT MET DE HUID: met veel water en zeep wassen
P304 + P340 - NA INADEMING: de persoon in de frisse lucht brengen en ervoor zorgen dat deze gemakkelijk kan ademen
P305 + P351 + P338 - BIJ CONTACT MET DE OGEN: voorzichtig afspoelen met water gedurende een aantal minuten; contactlenzen verwijderen, indien mogelijk; blijven spoelen
P403 + P233 - Op een goed geventileerde plaats bewaren. In goed gesloten verpakking bewaren

2.3. Andere gevaren

PBT/zPzB zie punt 12.5.

RUBRIEK 3: Samenstelling en informatie over de bestanddelen

3.2. Mengsels

Gevaarlijke bestanddelen

Chemische naam	EG-Nr	REACH registratienummer	CAS-Nr	Gewicht%	GHS Classificatie
styreen	202-851-5	01-2119457861-32	100-42-5	~ 40	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)
ftaalzuuranhydride	201-607-5	01-2119457017-41	85-44-9	0.1 - < 1	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Skin Sens. 1 (H317) Eye Dam. 1 (H318) Resp. Sens. 1 (H334) STOT SE 3 (H335)
propane-1,2-diol	200-338-0	01-2119456809-23	57-55-6	< 1	-
Silica, amorphous, fumed, crystalline-free	231-545-4	01-2119379499-16	112945-52-5	< 1	-
Kobaltoctoaat	205-250-6	01-2119524678-29	136-52-7	~ 0.1	Skin Sens. 1A (H317) Eye Irrit. 2 (H319) Repr. 1B (H360Fd) Aquatic Acute 1 (H400) Aquatic Chronic 3 (H412)
hydrochinon	204-617-8	01-2119524016-51	123-31-9	~ 0.01	Acute Tox. 4 (H302) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Muta. 2 (H341) Carc. 2 (H351) Aquatic acute 1 (H400) Aquatic Chronic 1 (H410)

Voor de volledige text van H-zinnen zoals vermeld in deze paragraaf, zie paragraaf 16

RUBRIEK 4: Eerstehulpmaatregelen

4.1. Beschrijving van de eerstehulpmaatregelen

Algemeen advies	Dit veiligheidsinformatieblad aan de dienstdoende arts tonen Voorkom inademen van stof/rook/gas/nevel/dampen/sproeinevel
Aanraking met de ogen	Grondig spoelen met veel water, ook onder de oogleden Tijdens spoelen ogen goed open houden. Indien symptomen aanhouden, een arts raadplegen
Aanraking met de huid	Onmiddellijk langdurig met zeep en veel water afwassen; alle verontreinigde kleding en schoenen uittrekken Als de huidirritatie voortduurt, een arts raadplegen
Inademing	In de frisse lucht brengen Als de ademhaling is gestopt kunstmatige ademhaling toedienen Een arts raadplegen
Inname	GEEN braken opwekken Mond spoelen Een arts raadplegen
Bescherming van EHBO'ers	Persoonlijke beschermingsmiddelen gebruiken Zie Rubriek 8 voor meer informatie

4.2. Belangrijkste acute en uitgestelde symptomen en effecten

Aanraking met de ogen	Irriterend voor de ogen
Aanraking met de huid	Irriterend voor de huid Kan overgevoeligheid veroorzaken bij contact met de huid
Inademing	Schadelijk: gevaar voor ernstige schade aan de gezondheid bij langdurige blootstelling bij inademing Irriterend voor de ademhalingswegen Kan een allergische reactie veroorzaken.
Inname	Inslikken kan irritatie van maag-darmkanaal, misselijkheid, braken en diarree veroorzaken

4.3. Vermelding van de vereiste onmiddellijke medische verzorging en speciale behandeling

Opmerkingen voor de arts	Geen gegevens beschikbaar

RUBRIEK 5: Brandbestrijdingsmaatregelen

5.1. Blusmiddelen

Geschikte blusmiddelen	Droogpoeder, Schuim, Kooldioxide (CO_2), (gesloten systemen)
Blusmiddelen die om veiligheidsredenen niet gebruikt mogen worden	Geen vaste waterstroom gebruiken omdat dit uiteen kan spatten en het vuur kan verspreiden.

5.2. Speciale gevaren die door de stof of het mengsel worden veroorzaakt

Speciale blootstellingsgevaren die veroorzaakt worden door de stof of het preparaat zelf, verbrandingsproducten of vrijkomende gassen

Dampen kunnen explosieve mengsels vormen met lucht. De meeste dampen zijn zwaarder dan lucht. Ze verplaatsen zich dicht langs het vloeroppervlak en in lage of afgesloten ruimten (riolen, kelders, tanks) vindt ophoping plaats van deze dampen Bij verwarming of verbranding kan giftig gas worden gevormd : Koolmonoxide

5.3. Advies voor brandweerlieden

Speciale beschermende uitrusting voor brandweerlieden

Draag onafhankelijk ademhalingsapparaat en beschermende kleding.

Overige informatie

Containers/tanks afkoelen met waternevel.
Verbrandingsresten en verontreinigd bluswater moeten verwijderd worden volgens plaatselijke regelgeving.

RUBRIEK 6: Maatregelen bij het accidenteel vrijkomen van de stof of het mengsel

6.1. Persoonlijke voorzorgsmaatregelen, beschermde uitrusting en noodprocedures

Voor andere personen dan de hulpdiensten

Persoonlijke voorzorgsmaatregelen

Alle ontstekingsbronnen verwijderen
Warmte, vlammen en vonken.
Neem voorzorgsmaatregelen tegen statische ladingen.
Zorg voor voldoende ventilatie
Persoonlijke beschermingsmiddelen gebruiken

Voor de hulpdiensten

Vermijd inademing van dampen en nevels Bij brand en/of explosie inademen van rook vermijden. Persoonlijke beschermingsmiddelen gebruiken

6.2. Milieuvoorzorgsmaatregelen

Milieuvoorzorgsmaatregelen

Het product mag niet wegvloeien in riool, waterstroom of bodem.
Niet naar het oppervlaktewater of de riolering laten afvloeien

6.3. Insluitings- en reinigingsmethoden en -materiaal

Reinigingsmethoden

Gemorst product indammen en vervolgens verzamelen met niet-brandbaar absorberend materiaal (bijv. zand, aarde, diatomeeënaarde, vermiculiet) en in container plaatsen voor verwijdering in overeenstemming met de lokale/nationale regelgeving (zie paragraaf 13)
Verzamel geabsorbeerd product met behulp van schone, vonkvrije gereedschappen

6.4. Verwijzing naar andere rubrieken

Zie Rubriek 8 voor meer informatie
Zie rubriek 12 voor aanvullende ecologische informatie

RUBRIEK 7: Hantering en opslag

7.1. Voorzorgsmaatregelen voor het veilig hanteren van de stof of het mengsel

Voorzorgsmaatregelen voor het veilig hanteren van de stof of het mengsel

Vermijd opbouw van statische elektriciteit door een aarding aan te brengen

Uitsluitend op plaatsen met voldoende afzuiging gebruiken
Bij ontoereikende ventilatie een geschikt ademhalingsapparaat dragen
Voor persoonlijke bescherming zie paragraaf 8

Brand- en explosiepreventie

Verwijderd houden van open vuur, hete oppervlakken en ontstekingsbronnen Lege verpakkingen/containers kunnen ontvlambare of explosieve dampen bevatten

Hygiënische maatregelen Niet eten, drinken of roken tijdens gebruik Handen wassen voor elke werkonderbreking en aan het einde van de werkdag Uitrusting, werkplaats en kleding regelmatig reinigen

7.2. Voorwaarden voor een veilige opslag, met inbegrip van incompatibele producten

Technische maatregelen/Opslagomstandigheden Op een droge, koele en goed geventileerde plaats bewaren.
Bewaren bij een temperatuur beneden 30°C
Verwijderd houden van warmte en ontstekingsbronnen.

Te vermijden materialen Sterke oxidatiemiddelen, Peroxiden, Reductiemiddelen

Verpakkingsmateriaal metaalglans PRV-reservoirs (Met Polyester Versterkt Glas)

Ongeschikte materialen voor containers koper, Koperlegeringen, Bronskleurig, Zìnk

7.3. Specifiek eindgebruik

Specifiek gebruik Geen gegevens beschikbaar

RUBRIEK 8: Maatregelen ter beheersing van blootstelling/persoonlijke bescherming

8.1. Controleparameters

Blootstellingslimieten

Chemische naam	Europese Unie	ACGIH OEL (Ceiling)	Nederland
styreen 100-42-5	-	TLV-8h TWA: 20 ppm - 85 mg/m³ TLV-15min STEL: 40 ppm - 170 mg/m³	Wij zijn niet op de hoogte van een landelijke blootstellinggrens.
ftaalzuuranhydride 85-44-9		TWA 1 ppm	Wij zijn niet op de hoogte van een landelijke blootstellinggrens.
Kobaltoctoaat 136-52-7		0.02 mg/m³	Wij zijn niet op de hoogte van een landelijke blootstellinggrens.
hydrochinon 123-31-9		TWA 1 mg/m³	Wij zijn niet op de hoogte van een landelijke blootstellinggrens.

Speciale gevaren die door de stof of het mengsel worden veroorzaakt

Biologische normen

Afgeleide doses zonder effect (DNEL)

Afgeleide doses zonder effect (DNEL)				
styreen (100-42-5)				
Type	DNEL oraal	DNEL dermaal	DNEL inademing	Opmerkingen
Workers - Long Term - Systemic effect		406 mg/Kg bw/day	85 mg/m³	
Workers - Acute Short Term - Local effect			306 mg/m³	
Workers - Acute Short term - Systemic effect			289 mg/m³	
General Population - Acute Short Term - Local effect			182.7 mg/m³	
General Population - Acute Short Term - Systemic effect			174.2 mg/m³	
General Population - Long Term - Systemic effect	2.1 mg/Kg bw/day	343 mg/Kg bw/day	10.2 mg/m³	

ftaalzuuranhydride (85-44-9)				
Type	DNEL oraal	DNEL dermaal	DNEL inademing	Opmerkingen

Workers - Long Term - Systemic effect		10 mg/kg bw/day	32.2 mg/m³	
General Population - Long Term - Systemic effect	5 mg/kg bw/day	5 mg/kg bw/day	8.6 mg/m³	

propane-1,2-diol (57-55-6)				
Type	DNEL oraal	DNEL dermaal	DNEL inademing	Opmerkingen
Workers - Long Term - Systemic effect			168 mg/m³	
Workers - Long Term - Local effect			10 mg/m³	
General Population - Long Term - Systemic effect			50 mg/m³	
General Population - Long Term - Local effect			10 mg/m³	

Silica, amorphous, fumed, crystalline-free (112945-52-5)				
Type	DNEL oraal	DNEL dermaal	DNEL inademing	Opmerkingen
Workers - Long Term - Systemic effect			4 mg/m³	

Kobaltoctoaat (136-52-7)				
Type	DNEL oraal	DNEL dermaal	DNEL inademing	Opmerkingen
Workers - Long Term - Local effect			235.1 µg/m³	
General Population - Long Term - Systemic effect	175 µg/kg bw/day			
General Population - Long Term - Local effect			37 µg/m³	

hydrochinon (123-31-9)				
Type	DNEL oraal	DNEL dermaal	DNEL inademing	Opmerkingen
Workers - Long Term - Systemic effect		128 mg/kg bw/day	7 mg/m³	
Workers - Long Term - Local effect			1 mg/m³	
General Population - Long Term - Systemic effect		64 mg/kg bw/day	1.74 mg/m³	
General Population - Long Term - Local effect			0.5 mg/m³	

Voorspelde geen effect-concentratie (PNEC)

PNEC Component		
styreen (100-42-5)		
Blootstelling	Type	PNEC
Zoetwater	PNEC Aqua	0.028 mg/L
Zeewater	PNEC Aqua	0.014 mg/L
Intermitterend gebruik/intermitterende emissie	PNEC Aqua	0.04 mg/L
Zoetwater	PNEC Sediment	0.614 mg/Kg.dw
Zeewater	PNEC Sediment	0.307 mg/Kg.dw
Terrestrisch compartiment	PNEC Soil	0.2 mg/Kg.dw
STP micro-organismen	PNEC STP	5 mg/L

ftaalzuuranhydride (85-44-9)		
Blootstelling	Type	PNEC
Zoetwater	PNEC Aqua	1 mg/L
Zeewater	PNEC Aqua	0.1 mg/L

Intermitterend gebruik/intermitterende emissie	PNEC Aqua	5.6 mg/L
	PNEC STP	10 mg/L
Zoetwater	PNEC Sediment	3.8 mg/kg sediment dw
Zeewater	PNEC Sediment	0.38 mg/kg sediment dw
Terrestrisch compartiment	PNEC Soil	0.173 mg/kg soil dw

propane-1,2-diol (57-55-6)		
Blootstelling	Type	PNEC
Zoetwater	PNEC Aqua	260 mg/L
Zeewater	PNEC Aqua	26 mg/L
Intermitterend gebruik/intermitterende emissie	PNEC Aqua	183 mg/L
	PNEC STP	20000 mg/L
Zoetwater	PNEC Sediment	572 mg/kg sediment dw
Zeewater	PNEC Sediment	57.2 mg/kg sediment dw
	PNEC Soil	50 mg/kg soil dw
Doorvergiftiging	PNEC Oral	1133 mg/kg

Silica, amorphous, fumed, crystalline-free (112945-52-5)		
Blootstelling	Type	PNEC
Doorvergiftiging	PNEC Oral	60000 mg/kg

Kobaltoctoaat (136-52-7)		
Blootstelling	Type	PNEC
Zoetwater	PNEC Aqua	0.62 µg/L
Zeewater	PNEC Aqua	2.36 µg/L
STP micro-organismen	PNEC STP	0.37 mg/L
Zoetwater	PNEC Sediment	53.8 mg/kg sediment dw
Zeewater	PNEC Sediment	69.8 mg/kg sediment dw
Terrestrisch compartiment	PNEC Soil	10.9 mg/kg soil dw

hydrochinon (123-31-9)		
Blootstelling	Type	PNEC
Zoetwater	PNEC Aqua	0.114 µg/L
Zeewater	PNEC Aqua	0.0114 µg/L
Zoetwater	PNEC Sediment	0.98 µg/kg sediment dw
Zeewater	PNEC Sediment	0.097 µg/kg sediment dw
	PNEC Soil	0.129 µg/kg soil dw
	PNEC STP	0.71 mg/L
Intermitterend gebruik/intermitterende emissie	PNEC Aqua	1.34 µg/L

8.2. Maatregelen ter beheersing van blootstelling

Beheersing van beroepsmatige blootstelling

Technische maatregelen Pas technische maatregelen toe om te voldoen aan de MAC-waarden.
Bij het werken in besloten ruimten (tanks, containers enz.), moet u ervoor zorgen dat er voldoende inadembare lucht wordt toegevoerd en de aanbevolen uitrusting dragen

Persoonlijke beschermingsmiddelen

Algemene informatie Persoonlijke beschermingsmiddelen gebruiken.

Bescherming van de ademhalingswegen Zorg voor een goed niveau van algemene ventilatie (niet minder dan 3 tot 5 luchtwisselingen per uur).
Als blootstellingslimieten waarschijnlijk overtreden gaan worden / Bij ontoereikende ventilatie een geschikt ademhalingsapparaat dragen :
Ademhalingsapparaat met filter Type A (Filter voor organische gassen en dampen conform EN 14387 , APF 40 < 1 uur, APF 200 > 1 uur) / Type A(2)/P3 in combinatie met Deeltjesfilter conform EN 143 , bij blootstelling aan stof

Bescherming van de ogen Veiligheidsbril met zijkleppen. Geen contactlenzen dragen.

Huid- en lichaamsbescherming Antistatische laarzen. Veiligheidsschoenen of -laarzen.
Vuur/vlambestendige/brandwerende kleding dragen.

Bescherming van de handen Chemicaliënbestendige handschoenen dragen (die voldoen aan EN 374) in combinatie met basistraining voor werknemers
Handschoenenmateriaal : Neopreen , Nitrillen , Viton (R) of Polyvinylalcohol
Handschoenen moeten weggegooid en vervangen worden bij tekenen van degradatie of chemische doorbraak

Beheersing van milieublootstelling
Beheersing van milieublootstelling Laat product niet het grondwater verontreinigen.

RUBRIEK 9: Fysische en chemische eigenschappen

9.1. Informatie over fysische en chemische basiseigenschappen

Eigenschap	Waarden	Opmerkingen
Voorkomen	amber	
Fysische toestand	Vloeistof	
Deeltjesgrootte		geen gegevens beschikbaar
Geur	styreen	
Geurdrempelwaarde	0.15 ppm	Deze referentiewaarden betreffen het Styreen
pH		geen gegevens beschikbaar
pH (als waterige oplossing)		geen gegevens beschikbaar
Smeltpunt/-traject	- 30 °C	Deze referentiewaarden betreffen het Styreen
Vriespunt		geen gegevens beschikbaar
Kookpunt	145 °C	Deze referentiewaarden betreffen het Styreen
Vlampunt	31 °C	Deze referentiewaarden betreffen het Styreen
Verdampingssnelheid		geen gegevens beschikbaar
Ontvlambaarheidgrenzen in lucht		
Bovenste	6,1 - 6,8%	Deze referentiewaarden betreffen het Styreen
onderste	0,9 -1,1%	Deze referentiewaarden betreffen het Styreen
Dampspanning	1 kPa	25°C Deze referentiewaarden betreffen het Styreen
Dampdichtheid	3.6	Deze referentiewaarden betreffen het Styreen
Dichtheid	1.09 g/cm3	20°C
Oplosbaarheid in water	Onoplosbaar in water	
Verdelingscoëfficiënt: n-octanol/water	3	Deze referentiewaarden betreffen het Styreen
Zelfontbrandingstemperatuur	490 °C	Deze referentiewaarden betreffen het Styreen
Ontledingstemperatuur		geen gegevens beschikbaar
Viscositeit, kinematisch	413 - 505 mm2/s	
Viscositeit, dynamisch	450 - 550 mPa.s	
Ontploffingsgevaar		niet van toepassing
Oxiderende eigenschappen		niet van toepassing

9.2. Overige informatie

Eigenschap	Waarden	Opmerkingen
Oplosbaarheid in andere oplosmiddelen	In het merendeel van organische solveermiddelen	

RUBRIEK 10: Stabiliteit en reactiviteit

10.1. Reactiviteit

Reactiviteit Het product kan ontbranden en branden bij temperaturen boven het vlampunt

10.2. Chemische stabiliteit

Stabiliteit Stabiel onder de aanbevolen opslagomstandigheden.

10.3. Mogelijke gevaarlijke reacties

Gevaarlijke reacties Kan bij gebruik een ontvlambaar/ontplofbaar damp-luchtmengsel vormen.

Gevaarlijke polymerisatie Polymerisatie kan voorkomen.

10.4. Te vermijden omstandigheden

Te vermijden omstandigheden Warmte, vlammen en vonken.
Blootstelling aan licht.
Neem voorzorgsmaatregelen tegen statische ladingen.

10.5. Chemisch op elkaar inwerkende materialen

Te vermijden materialen Sterke oxidatiemiddelen, Peroxiden, Reductiemiddelen

10.6. Gevaarlijke ontledingsproducten

Gevaarlijke ontledingsproducten Onvolledige verbranding en thermolyse produceren potentieel toxische gassen zoals koolstofmonoxide en koolstofdioxide

RUBRIEK 11: Toxicologische informatie

11.1. Informatie over toxicologische effecten

Acute toxiciteit

Inademing Schadelijk: gevaar voor ernstige schade aan de gezondheid bij langdurige blootstelling bij inademing Irriterend voor de ademhalingswegen Kan een allergische reactie veroorzaken.

Inname Inslikken kan irritatie van maag-darmkanaal, misselijkheid, braken en diarree veroorzaken

Chemische naam	LD50 oraal	LD50 huid	LC50 Inademen	Read across
styreen 100-42-5	5000 mg/kg (Rat)	> 2000 mg/kg bw (Rat) 24h OECD 402	11.8 mg/L (Rat) 4h CSR	
ftaalzuuranhydride 85-44-9	1530 mg/kg bw (Rat)	> 3160 mg/kg bw (Rabbit)	> 2.14 mg/L (Rat) 4h OECD 403	
propane-1,2-diol 57-55-6	22000 mg/kg bw (Rat) Study predates GLP and OECD guidelines	LD50 (24h) > 2000 mg/kg bw (Rabbit)	LC50 (2h) aerosol > 317042 mg/m³ air (Rabbit)	
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	
Kobaltoctoaat 136-52-7	3129 mg/kg/bw (Rat) OECD 425	> 2000 mg/kg bw (Rat) OECD 402		
hydrochinon 123-31-9	367 mg/kg bw (Rat) OECD 401	> 2000 mg/kg bw (Rabbit) OECD 402		

Huidcorrosie/-irritatie

Chemische naam	huidcorrosie/-irritatie	Read across
styreen 100-42-5	Irriterend voor de huid in vivo proef konijn	
ftaalzuuranhydride 85-44-9	Irriterend voor de huid in vivo proef konijn OECD 404	

propane-1,2-diol 57-55-6	Geen huidirritatie in vivo proef konijn OECD 404	
Silica, amorphous, fumed, crystalline-free 112945-52-5	Geen huidirritatie konijn OECD 404	
Kobaltoctoaat 136-52-7	Geen Huidcorrosie in vitro proef OECD 431 EU Method B. 40	
hydrochinon 123-31-9	Geen huidirritatie	

Ernstig oogletsel/oogirritatie

Chemische naam	Ernstig oogletsel/oogirritatie	Read across
styreen 100-42-5	Irriterend voor de ogen in vivo proef konijn	
ftaalzuuranhydride 85-44-9	Irriterend voor de ogen in vivo proef konijn Draize proef	
propane-1,2-diol 57-55-6	Geen oogirritatie in vivo proef konijn OECD 405	
Silica, amorphous, fumed, crystalline-free 112945-52-5	Geen oogirritatie konijn OECD 405	
Kobaltoctoaat 136-52-7	Matige oogirritatie OECD 437 EU Method B.47 Irriterend voor de ogen konijn OECD 405	
hydrochinon 123-31-9	Risico op ernstig oogletsel Ernstige oogirritatie	

Sensibilisatie van de luchtwegen of de huid Kan overgevoeligheid veroorzaken bij contact met de huid

Chemische naam	Sensibilisatie van de luchtwegen of de huid	Read across
styreen 100-42-5	Veroorzaakt geen overgevoeligheid van de huid Veroorzaakt geen overgevoeligheid van de ademwegen CSR	
ftaalzuuranhydride 85-44-9	Kan sensibilisering veroorzaken door inademing en aanraking met de huid in vivo proef cavia OECD 406	
propane-1,2-diol 57-55-6	Veroorzaakt geen overgevoeligheid van de huid Veroorzaakt geen overgevoeligheid van de ademwegen in vivo proef cavia OECD 406 muis OECD 429	
Silica, amorphous, fumed, crystalline-free 112945-52-5	Veroorzaakt geen overgevoeligheid van de huid Veroorzaakt geen overgevoeligheid van de ademwegen	
Kobaltoctoaat 136-52-7	Kan overgevoeligheid veroorzaken bij contact met de huid in vivo proef muis OECD 429	

hydrochinon 123-31-9	Kan overgevoeligheid veroorzaken bij contact met de huid muis OECD 429 cavia OECD 406	

mutagene effecten

in vitro proef

Chemische naam	Ames-test	Read across
styreen 100-42-5	Dubbelzinnig In-vitrotest naar genmutatie bij bacteriën (S. typhimurium G46, TA1530, TA 1535, TA100, TA98, TA1538, TA 1537) OECD 471	
ftaalzuuranhydride 85-44-9	negatief In-vitrotest naar genmutatie bij bacteriën (S. typhimurium TA 1535, TA 1537, TA 98, TA100 and TA 102) (Escherichia coli WP2 uvrA) OECD 471	
propane-1,2-diol 57-55-6	negatief In-vitrotest naar genmutatie bij bacteriën Salmonella typhimurium (S. typhimurium, other: TA 92, TA 94, TA 98, TA 100, TA 1535, TA 1537)	
Silica, amorphous, fumed, crystalline-free 112945-52-5	negatief In-vitrotest naar genmutatie bij bacteriën OECD 471	
Kobaltoctoaat 136-52-7	negatief In-vitrotest naar genmutatie bij bacteriën (S. typhimurium TA 1535, TA 1537, TA 98, TA100 and TA 102) OECD 471	Cas N°: 68956-82-1, 14024-48-7
hydrochinon 123-31-9	negatief In-vitrotest naar genmutatie bij bacteriën OECD 471	

Chemische naam	In vitro-test m.b.t. genmutatie bij zoogdieren	Read across
styreen 100-42-5	Dubbelzinnig In-vitrotest naar genmutatie bij zoogdiercellen hamster OECD 476	
ftaalzuuranhydride 85-44-9	negatief In-vitrotest naar genmutatie bij zoogdiercellen hamster OECD 476	
Silica, amorphous, fumed, crystalline-free 112945-52-5	negatief In-vitrotest naar genmutatie bij zoogdiercellen OECD 476	
Kobaltoctoaat 136-52-7	negatief In-vitrotest naar genmutatie bij zoogdiercellen muis OECD 476	Cas N°: 7440-48-4, 1308-06-1, 10124-43-3, 12016-80-7
hydrochinon 123-31-9	positief In-vitrotest op chromosoomafwijkingen OECD 483	
Chemische naam	**In vitro test m.b.t. chromosoomafwijkingen bij zoogdieren**	**Read across**
styreen 100-42-5	positief In-vitrotest op chromosoomafwijkingen OECD 473 OECD 479	
ftaalzuuranhydride 85-44-9	Dubbelzinnig In-vitrotest op chromosoomafwijkingen hamster OECD 473	

propane-1,2-diol 57-55-6	negatief In-vitrotest op chromosoomafwijkingen OECD 473	
Silica, amorphous, fumed, crystalline-free 112945-52-5	negatief In-vitrotest op chromosoomafwijkingen OECD 473	
hydrochinon 123-31-9	positief In-vitrotest naar genmutatie bij zoogdiercellen muis OECD 476	

in vivo proef

Chemische naam	In vivo-test m.b.t. ongeplande DNA-synthese (Unscheduled DNA Synthesis; UDS)	Read across
styreen 100-42-5	negatief muis OECD 486 OECD 474	
propane-1,2-diol 57-55-6	negatief rat	
Silica, amorphous, fumed, crystalline-free 112945-52-5	negatief rat	
Kobaltoctoaat 136-52-7	negatief rat OECD 474 OECD 475	Cas N°: 68956-82-1, 14024-48-7, 10026-24-1

Chemische naam	Europese Unie
hydrochinon 123-31-9	Muta. 2

Kankerverwekkendheid

Kankerverwekkendheid				
styreen (100-42-5)				
Blootstellingsroute	Methode	Soort	Dosis	Evaluatie
Inademing	OECD 453	rat	NOAEC systemic (carcinogenicity) >= 4.34 mg/L air (nominal)	negatief
Inademing	OECD 453	muis	LOAEC (carcinogenicity) female/male = 0.09 - 0.18 mg/L air resp., NOAEC (carcinogenicity) male = 0.09 mg/L air	positief
Oraal	Geen gegevens beschikbaar	rat	NOAEL (carcinogenicity) >= 2000 mg/kg bw /day	positief
Oraal	Geen gegevens beschikbaar	muis	LOAEL (carcinogenicity) = 150 mg/kg bw /day	positief

ftaalzuuranhydride (85-44-9)				
Blootstellingsroute	Methode	Soort	Dosis	Evaluatie
Oraal	Geen gegevens beschikbaar	muis	NOAEL (carcinogenicity, male) = 3570 mg/kg bw/day (72w) NOAEL (carcinogenicity, female) = 1785 mg/kg bw/day (72w)	negatief
Oraal	Geen gegevens beschikbaar	rat	NOAEL (carcinogenicity) = 1000 mg/kg bw/day (105w)	negatief

propane-1,2-diol (57-55-6)				
Blootstellingsroute	Methode	Soort	Dosis	Evaluatie
Inademing	Geen gegevens beschikbaar	rat	NOAEC carcinogenocity (male/female) > 350 mg/m³ air (18 month)	negatief
Huid	Geen gegevens beschikbaar	muis	NOAEL carcinogenicity (female) = 0.02 ml/twice a week	negatief

Oraal	Geen gegevens beschikbaar	rat	NOAEL carcinogenicity (male) = 1700 mg/kg bw/day NOAEL carcinogenicity (male/female) = 3040 mg/kg bw/day (105 weeks)	negatief
Oraal	Geen gegevens beschikbaar	muis	NOAEL carcinogenicity (male/female) = 2390 mg/kg bw/day	negatief

Silica, amorphous, fumed, crystalline-free (112945-52-5)				
Blootstellingsroute	Methode	Soort	Dosis	Evaluatie
Oraal	OECD 453	rat	NOAEL = 1800 - 3200 mg/kg bw/day	negatief

hydrochinon (123-31-9)				
Blootstellingsroute	Methode	Soort	Dosis	Evaluatie
Oraal	OECD 453	muis	LOAEL = 100 mg/kg bw/day NOEL = 50 mg/kg bw/day	negatief

Voortplantingstoxiciteit

Voortplantingstoxiciteit				
styreen (100-42-5)				
Blootstellingsroute	Methode	Soort	Dosis	Evaluatie
Inademing	Geen gegevens beschikbaar	rat	NOAEL/LOAEL (fertility) 60d = 100 - 200 mg/kg bw/day	positief
Oraal	OECD 422	rat	NOAEL/LOAEL (fertility) 60d = 200 - 400 mg/kg bw/day	positief
Inademing	OECD 416	rat	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)	negatief

ftaalzuuranhydride (85-44-9)				
Blootstellingsroute	Methode	Soort	Dosis	Evaluatie
Oraal	Geen gegevens beschikbaar	muis	NOAEL (reproductive, male) = 3570 mg/kg bw/day (72w) NOAEL (reproductive, female) = 1785 mg/kg bw/day (72w)	negatief
Oraal	Geen gegevens beschikbaar	rat	NOAEL (reproductive, female) = 1000 mg/kg bw/day (105w)	negatief

propane-1,2-diol (57-55-6)				
Blootstellingsroute	Methode	Soort	Dosis	Evaluatie
Oraal	NTP Reproductive Assessment by Continuous Breeding (RACB)	muis	NOAEL toxicity (male/female) = 10100 mg/kg bw/day NOAEL fertility (male/female) = 10100 mg/kg bw/day NOAEL developmental effects (male/female) = 10100 mg/kg bw/day	negatief

Silica, amorphous, fumed, crystalline-free (112945-52-5)				
Blootstellingsroute	Methode	Soort	Dosis	Evaluatie

Oraal	OECD 415	rat	NOAEL = 497 mg/kg bw/day	negatief

Kobaltoctoaat (136-52-7)				
Blootstellingsroute	Methode	Soort	Dosis	Evaluatie
Oraal	Read across Cas N°: 7440-48-4 OECD 422	rat	NO(A)EL (P&F1) 28d = 30 mg/kg bw/day	positief

hydrochinon (123-31-9)				
Blootstellingsroute	Methode	Soort	Dosis	Evaluatie
Oraal	EPA OTS 798.4700	rat	NOAEL (parental toxicity) = 15 mg/kg bw/day LOAEL (reproductive effects) = 150 mg/kg bw/day	negatief

Ontwikkelingstoxiciteit Kan mogelijks het ongeboren kind te schaden.

Ontwikkelingstoxiciteit				
styreen (100-42-5)				
Blootstellingsroute	Methode	Soort	Dosis	Evaluatie
Inademing	Geen gegevens beschikbaar	rat	NOAEC/LOAEC (maternal toxicity + developemental toxicity) >50d = 1.08 - 2.15 mg/L air	positief
Inademing	OECD 414	rat	LOAEC (maternal toxicity) 6-15d = 1.28 mg/L air	positief
Inademing	OECD 414	rat	NOAEC (developmental toxicity) 6-15d >= 2.56 mg/L air	negatief
Inademing	OECD 414	konijn	NOAEC (maternal toxicity + developmental toxicity) 6-18d = 2.56 mg/L air	negatief

ftaalzuuranhydride (85-44-9)				
Blootstellingsroute	Methode	Soort	Dosis	Evaluatie
Oraal	Read across phthalic acid Cas N° : 88-99-3	rat	NOAEL (maternal toxicity) = 1000 mg/kg bw/day NOAEL (teratogenicity) = 1700 mg/kg bw/day	positief

propane-1,2-diol (57-55-6)				
Blootstellingsroute	Methode	Soort	Dosis	Evaluatie
Oraal	OECD 414	muis	NOAEL (developmental toxicity) = 10400 mg/kg bw/day NOAEL (maternal toxicity) = 52 mg/kg bw/day	negatief

Silica, amorphous, fumed, crystalline-free (112945-52-5)				
Blootstellingsroute	Methode	Soort	Dosis	Evaluatie
Oraal	OECD 414	rat	NOAEL (maternal toxicity) = 1350 mg/kg bw/day NOAEL (teratogenicity) = 1350 mg/kg bw/day	negatief

hydrochinon (123-31-9)				
Blootstellingsroute	Methode	Soort	Dosis	Evaluatie
Oraal	OECD 414	rat	NOEL (maternal toxicity and developmental toxicity) = 100 mg/kg bw/day	negatief
Oraal	EPA OTS 798.4900	konijn	NOEL (maternal toxicity) = 25 mg/kg bw/day NOEL (developmental toxicity) = 75 mg/kg bw/day	negatief

Specifieke doelorgaantoxiciteit - eenmalige blootstelling Kan irritatie van de ademhalingswegen veroorzaken

STOT - eenmalige blootstelling				
propane-1,2-diol (57-55-6)				
Blootstellingsroute	Methode	Soort	Dosis	Opmerkingen
Oraal	Geen gegevens beschikbaar	rat	NOAEL (male/female) 102 weeks = 1700 mg/kg bw/day	
Huid	Geen gegevens beschikbaar	muis	NOAEL (female) = 0.02 ml (twice by week, 10 weeks)	
Inademing	Geen gegevens beschikbaar	rat	LOAEC (male) 90d = 160 mg/m³	

hydrochinon (123-31-9)				
Blootstellingsroute	Methode	Soort	Dosis	Opmerkingen
Oraal	Geen gegevens beschikbaar	muis	NOAEL (90d) = 50 mg/kg bw/day	

Specifieke doelorgaantoxiciteit - herhaalde blootstelling Veroorzaakt schade aan organen bij langdurige of herhaalde blootstelling , doelorga(a)n(en) : Centrale zenuwstelsel , Oren

STOT - herhaalde blootstelling				
styreen (100-42-5)				
Blootstellingsroute	Methode	Soort	Dosis	Opmerkingen
Inademing	OECD 412	rat muis	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	
Inademing	Geen gegevens beschikbaar	rat	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	
Oraal	Geen gegevens beschikbaar	rat	NOAEL (toxicity) = 1000 mg/kg bw/day LOAEL (toxicity) = 2000 mg/kg bw/day	
Oraal	Geen gegevens beschikbaar	muis	NOAEL (toxicity) = 150 mg/kg bw /day LOAEL (toxicity) = 300 mg/kg bw /day	
Inademing	OECD 453	rat	LOAEC local (toxicity) = 0.21 mg/L air	

ftaalzuuranhydride (85-44-9)				
Blootstellingsroute	Methode	Soort	Dosis	Opmerkingen
Oraal	Geen gegevens beschikbaar	rat	NOAEL = 1250 mg/kg bw/day LOAEL = 2500 mg/kg bw/day 7 weeks	
Oraal	Geen gegevens beschikbaar	rat	NOAEL (105 weeks) = 500 mg/kg bw/day	

Oraal	Geen gegevens beschikbaar	muis	LOAEL (male) = 2340 mg/kg bw/day LOAEL (female) = 1717 mg/kg bw/day 72 weeks	

propane-1,2-diol (57-55-6)				
Blootstellingsroute	Methode	Soort	Dosis	Opmerkingen
Oraal	Geen gegevens beschikbaar	rat	NOAEL = 1700 mg/kg bw/day	
Inademing	Geen gegevens beschikbaar	rat	NOAEC = 1000 mg/m³ air NOAEC = 2200 mg/m³ air	
Huid	Geen gegevens beschikbaar	muis	NOAEL = 0.02 ml/twice a week	

Silica, amorphous, fumed, crystalline-free (112945-52-5)				
Blootstellingsroute	Methode	Soort	Dosis	Opmerkingen
Oraal	OECD 408	rat	NOEL (highest dose) 4000 <= 4500 mg/kg bw/day 90d	
Inademing	OECD 413	rat	NOEC = 1.3 mg/m³ air NOEC < 1.3 mg/m³ air 90d	
Huid	Geen gegevens beschikbaar	konijn	NOAEL >= 10000 mg/kg bw/day	

Kobaltoctoaat (136-52-7)				
Blootstellingsroute	Methode	Soort	Dosis	Opmerkingen
Oraal	Read across cobalt dichloride hexahydrate OECD 408	rat	NOAEL (90d) = 3 mg/kg bw/day	

hydrochinon (123-31-9)				
Blootstellingsroute	Methode	Soort	Dosis	Opmerkingen
Oraal	OECD 453	rat	NOAEL (chronic toxicity) = 25 mg/kg bw/day	
Huid	OECD 411	rat	NOAEL (male) = 73.9 mg/kg bw/day NOAEL (female) = 109.6 mg/kg bw/day	

Aspiratiegevaar Door de viscositeit levert dit product geen aspiratiegevaar op.

Overige informatie Geen

RUBRIEK 12: Ecologische informatie

12.1. Toxiciteit

Schadelijk voor in het water levende organismen; kan in het aquatisch milieu op lange termijn schadelijke effecten veroorzaken. Niet naar het oppervlaktewater of de riolering laten afvloeien

Acute aquatische toxiciteit - Gegevens over de bestanddelen

Chemische naam	Toxiciteit voor algen	Toxiciteit voor dafnia's en andere ongewervelde waterdieren.	Toxiciteit voor vissen	Toxiciteit voor micro-organismen
styreen 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

ftaalzuuranhydride 85-44-9	EC50 (72h) = 68 mg/L, NOEC (72h) = 32 mg/L (Pseudokirchnerella subcapitata) OECD 201	EC50 (48h) = 71 mg/L (Daphnia magna) OECD 202	LC50 (96h) > 99 mg/L (Oryzias latipes) OECD 203	EC50 (3h) > 1000 mg/L (Activated sludge), ISO 8192 EC50 (16h) = 13 mg/L (Pseusomonas putida), ISO 10712
propane-1,2-diol 57-55-6	EC50 (72h) = 24200 mg/L (Pseudokirchnerella subcapitata) EC50 (48h) = 34100 mg/L (Pseudokirchnerella subcapitata) EC50 (96h) = 19000mg/L (Pseudokirchnerella subcapitata) OECD 201	LC50 (48h) = 18340 mg/L (Ceriodaphnia dubia) LC50 (96h) = 18800 mg/L (Americamysis bahia) EPA 600/4-90/0-27	LC50 (96h) = 40613 mg/L (Oncorhynchus mykiss)	CE50 (0.5h) > 1000 mg/L (Activated sludge) OECD 209 NOEC (18h) > 20000 mg/L (Pseudomonas putida)
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	
Kobaltoctoaat 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
hydrochinon 123-31-9	ErC50 (72h) = 0.330 mg/L ; NOEC (72h) (growth rate) = 0.019 mg/L (Pseudokirchnerella subcapitata) OECD 201	EC50 (48h) = 0.134 mg/L (Daphnia magna) OECD 202 NOEC (21d) = 0.0057 mg/L (Daphnia magna) OECD 211	LC50 (96h) = 0.638 mg/L (Oncorhynchus mykiss) OECD 203	

Chronische aquatische toxiciteit - Gegevens over de bestanddelen

Chemische naam	Toxiciteit voor algen	Toxiciteit voor dafnia's en andere ongewervelde waterdieren.	Toxiciteit voor vissen	Toxiciteit voor micro-organismen
styreen 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		
ftaalzuuranhydride 85-44-9		NOEC (reproduction) 21d = 16 mg/L, EC50 (reproduction) 21d = 42 mg/L (Daphnia magna) OECD 211	LC50 (7d) = 560 mg/L (Danio rerio), OECD 210 LOEC (total embryotoxicity) 60d = 32 mg/L, NOEC (mortality, lengh, weight, embryotoxicity) 60d = 10 mg/L, OECD 210	
propane-1,2-diol 57-55-6	NOEC (14d) = 15000 mg/L (Pseudokirchnerella subcapitata) OECD 201	NOEC (7d) = 13020 mg/L (Ceriodaphnia sp) EPA 600/4-89/001	NOEC (7d) = 11530 mg/L (Pimephales promelas) EPA 600/4-89/001	
Kobaltoctoaat 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		

Effecten op terrestrische organismen - Gegevens over de bestanddelen

Acute toxiciteit				
ftaalzuuranhydride (85-44-9)				
Acute toxiciteit	Testmethode	Soort	Waarden	Opmerkingen
planten		Lactuca sativa	EC50 (germination) = 731 mg/L	

Chronische toxiciteit				
styreen (100-42-5)				
Chronische toxiciteit	Methode	Soort	Waarden	Opmerkingen
Toxiciteit voor ongewervelde	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	

12.2. Persistentie en afbreekbaarheid

Chemische naam	Biodegradatie	Evaluatie
styreen 100-42-5	87% (20d) similar to OECD 301D	Gemakkelijk biologisch afbreekbaar
ftaalzuuranhydride 85-44-9	68 % (10d), 74 % (30d) OECD 301 D	Gemakkelijk biologisch afbreekbaar
propane-1,2-diol 57-55-6	81,7 % (28d), OECD 301 F 95,8 % (64d), OECD 306	Gemakkelijk biologisch afbreekbaar
Kobaltoctoaat 136-52-7	60% (> 10d), OECD 301 B	Gemakkelijk biologisch afbreekbaar
hydrochinon 123-31-9	70 % (14d) OECD 301C	Gemakkelijk biologisch afbreekbaar

12.3. Bioaccumulatie

Bioconcentratiefactor (BCF)		
styreen (100-42-5)		
Methode	Soort	Bioconcentratiefactor (BCF)
Calculatiemethode		74

ftaalzuuranhydride (85-44-9)		
Methode	Soort	Bioconcentratiefactor (BCF)
Calculatiemethode		3.16 - 3.4

propane-1,2-diol (57-55-6)		
Methode	Soort	Bioconcentratiefactor (BCF)
Calculatiemethode		0.09

hydrochinon (123-31-9)		
Methode	Soort	Bioconcentratiefactor (BCF)
geen gegevens beschikbaar	Leuciscus idus melanotus	40 (3d)

Chemische naam	log Pow
styreen 100-42-5	3
ftaalzuuranhydride 85-44-9	1.6
propane-1,2-diol 57-55-6	-1.07
hydrochinon 123-31-9	0.59

12.4. Mobiliteit in de bodem

Chemische naam	LogKoc	Koc
styreen 100-42-5	2.55	352
ftaalzuuranhydride 85-44-9	-	31
propane-1,2-diol 57-55-6	0,46	-
hydrochinon 123-31-9	0.97 - 1.7	-

12.5. Resultaten van PBT- en zPzB-beoordeling

Chemische naam	PBT	vPvB
styreen 100-42-5	Deze stof wordt niet beschouwd als persistent, bioaccumulerend, of toxisch (PBT).	Deze stof wordt niet beschouwd als zeer persistent of zeer bioaccumulerend (zPzB).
ftaalzuuranhydride 85-44-9	Deze stof wordt niet beschouwd als persistent, bioaccumulerend, of toxisch (PBT).	Deze stof wordt niet beschouwd als zeer persistent of zeer bioaccumulerend (zPzB).
propane-1,2-diol 57-55-6	Deze stof wordt niet beschouwd als persistent, bioaccumulerend, of toxisch (PBT).	Deze stof wordt niet beschouwd als zeer persistent of zeer bioaccumulerend (zPzB).
Silica, amorphous, fumed, crystalline-free 112945-52-5	Deze stof wordt niet beschouwd als persistent, bioaccumulerend, of toxisch (PBT).	Deze stof wordt niet beschouwd als zeer persistent of zeer bioaccumulerend (zPzB).
hydrochinon 123-31-9	Deze stof wordt niet beschouwd als persistent, bioaccumulerend, of toxisch (PBT).	Deze stof wordt niet beschouwd als zeer persistent of zeer bioaccumulerend (zPzB).

12.6. Andere schadelijke effecten

Niets bekend.

RUBRIEK 13: Instructies voor verwijdering

13.1. Afvalverwerkingsmethoden

Afval van residuen/niet-gebruikte producten Verwijderen overeenkomstig de Europese Richtlijnen voor afvalstoffen en gevaarlijke afvalstoffen.
Niet naar het oppervlaktewater of de riolering laten afvloeien

Verontreinigde verpakking Lege containers moeten worden afgevoerd naar een erkende afvalverwerkingscentrale voor hergebruik of verwijdering.

Overige informatie Volgens de Europese afvalstoffenlijst zijn afvalcodes niet productspecifiek, maar toepassingsspecifiek.
Afvalcodes moeten worden toegekend door de gebruiker, op basis van de toepassing waarvoor het product gebruikt is.

RUBRIEK 14: Informatie met betrekking tot het vervoer

14.1. VN-nummer

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

14.2. Juiste ladingnaam overeenkomstig de modelreglementen van de VN

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
UN1866, RESIN SOLUTION, 3, PG III

ADN
Resin solution
UN1866, RESIN SOLUTION, 3, PG III

14.3. Transportgevarenklasse(n)

ADR/RID
Gevarenklasse 3

IMDG/IMO
Gevarenklasse 3

ICAO/IATA
Gevarenklasse 3

ADN
Gevarenklasse 3

14.4. Verpakkingsgroep

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

14.5. Milieugevaren

ADR/RID	Niet
IMDG/IMO	Niet
Mariene verontreiniging	Niet
ICAO/IATA	Niet
ADN	Niet

14.6. Bijzondere voorzorgen voor de gebruiker

ADR/RID
Classificatiecode F1
Code voor tunnelbeperking (D/E)
Beperkte hoeveelheid 5 L

IMDG/IMO
EMS F-E, S-E
Beperkte hoeveelheid 5 L

ICAO/IATA
ERG-Code 3L
Beperkte hoeveelheid 10 L

ADN
Classificatiecode F1
Beperkte hoeveelheid 5 L
ventilatie VE01

Speciale voorzorgsmaatregelen voor gebruikers

Speciale voorzorgsmaatregelen Geen gegevens beschikbaar

14.7. Vervoer in bulk overeenkomstig bijlage II bij MARPOL 73/78 en de IBC-code

Transport in bulk overeenkomstig MARPOL 73/78 en de IBC-code niet van toepassing

RUBRIEK 15: Regelgeving

15.1. Specifieke veiligheids-, gezondheids- en milieureglementen en -wetgeving voor de stof of het mengsel

Verordening (EG) nr. 1907/2006 (REACH)
Verordening (EG) nr. 1272/2008 (CLP)
Verordening (EU) nr. 830/2015
Richtlijn 88/642/EEG
Richtlijn 98/24/EG
Richtlijn 1999/92/EG
Richtlijn 2012/18/EU

Het mengsel is onderhevig aan beperkingen op het gebruik: zie Bijlage XVII van de Verordening 1907/2006/EG (REACH): Kolom 1, nr. 3; Kolom 1, nr. 40.

Europese Unie

Chemische naam	96/82/EC (SEVESO) - §9	96/82/EC (SEVESO) - §6, §7
styreen - 100-42-5	50000	5000 tonnes 50000 tonnes

Informatie over nationale regelgeving
Nederland
Voorkom het overschrijden van de voorgeschreven MAC-waarden (zie paragraaf 8).

15.2. Chemischeveiligheidsbeoordeling

Chemischeveiligheidsbeoordeling Ja
Blootstellingsscenario Informatie die relevant is voor de beheersing van risico's wordt doorgegeven in de vorm van een als bijlage aan het veiligheidsinformatieblad gehecht blootstellingsscenario.

RUBRIEK 16: Overige informatie

Volledige tekst van H-zinnen in paragraaf 2 en 3

H226 - Ontvlambare vloeistof en damp
H302 - Schadelijk bij inslikken
H304 - Kan dodelijk zijn als de stof bij inslikken in de luchtwegen terechtkomt
H315 - Veroorzaakt huidirritatie
H317 - Kan een allergische huidreactie veroorzaken
H318 - Veroorzaakt ernstig oogletsel
H319 - Veroorzaakt ernstige oogirritatie
H332 - Schadelijk bij inademing
H334 - Kan bij inademing allergie- of astmasymptomen of ademhalingsmoeilijkheden veroorzaken
H335 - Kan irritatie van de luchtwegen veroorzaken
H341 - Verdacht van het veroorzaken van genetische schade
H351 - Verdacht van het veroorzaken van kanker
H360Fd - Kan de vruchtbaarheid schaden. Wordt ervan verdacht het ongeboren kind te schaden
H361d - Wordt ervan verdacht het ongeboren kind te schaden
H372 - Veroorzaakt schade aan organen bij langdurige of herhaalde blootstelling bij inademing
H400 - Zeer giftig voor in het water levende organismen
H410 - Zeer giftig voor in het water levende organismen, met langdurige gevolgen
H412 - Schadelijk voor in het water levende organismen, met langdurige gevolgen
EUH208 - Kan een allergische reactie veroorzaken.

Trainingsadvies	Gebruiken volgens goede industriële hygiëne en veiligheid. Volg de gebruiksaanwijzing om gevaar voor mens en milieu te voorkomen.
Bronnen van de kerngegevens die zijn gebruikt voor het opstellen van het gegevensblad	ECHA

Eerdere datum	11-Oct-2018
Herzieningsdatum	23-Aug-2019
Herzieningsnotitie	veiligheidsinformatieblad-rubrieken bijgewerkt : 1 , 3 , 8 , 11 , 12

Dit veiligheidsinformatieblad is overeenkomstig de eisen van de Verordening (EG) 1907/2006

Vrijwaringclausule

De informatie op dit veiligheidsinformatieblad is zover ons bekend juist op de aangegeven uitgiftedatum. Deze informatie is uitsluitend bedoeld als handleiding voor veilig hanteren, gebruiken, verwerken, opslaan, vervoeren, verwijderen, en vrijkomen, en mag niet beschouwd worden als een garantie of aanduiding van kwaliteit. De informatie heeft alleen betrekking op het hierin vermelde product en is niet zonder meer geldig wanneer het samen met andere producten of in enig ander procédé wordt gebruikt, tenzij dit in de tekst vermeld wordt.

Einde van het Veiligheidsinformatieblad

Scenario 1: Manufacturing of UP/VE resins and formulated resins (Gelcoat, Coulour 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, Coulour 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, Coulour 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	PROC 1 - Chemical production in closed process PROC 3 - Use in closed batch process (synthesis or formulation) PROC 4 - Chemical production where opportunity for exposure arises PROC 5 - Mixing or blending in batch processes (multistage and/or significant contact) PROC 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities PROC 8b - Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC 9 - Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC 15 - Use of laboratory reagents in small scale laboratories
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 *(justification: Continous release)*
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 % *(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)	0.00063 % *(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 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 adeguate 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 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 adeguate 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 adeguate 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 adeguate 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 % *(justification: Use local exhaust ventilation with adequate effectiveness)*
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	Drain down system prior to equipment break-in or maintenance. Drain or remove substance from equipment prior to break-in or maintenance. Ensure good work practices are implemented Provide basic employe training to prevent/minimize exposures Wear suitable coveralls to prevent exposure to the skin. Use suitable eye protection. Use suitable chemically resistant gloves, tested to EN374. In case of potential exposure wear a suitable respiratory protection with adeguate 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
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 % *(justification: Use local exhaust ventilation with adequate effectiveness)*
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	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	Provide a good standard of general ventilation. 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 Dispose of empty containers and wastes safely. Dispose of waste in accordance with environmental legislation. Use suitable chemically resistant gloves, tested to EN374. In case of potential exposure wear a suitable respiratory protection with adeguate effectiveness. Use suitable eye protection.
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	Bulk transfers. All activities related to transport finished product to customer. Dispensing final UP/VE resin (linear UP/VE polymer + styrene + additives) into roadtanker
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. In case of potential exposure wear a suitable respiratory protection with adeguate 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
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 % *(justification: Use local exhaust ventilation with adequate effectiveness)*
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	Bulk transfers. All activities related to transport finished product to customer. Dispensing final UP/VE resin (linear UP/VE polymer + styrene + additives) / into storage tank, IBC, drum or pail.
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 % *(justification: Use local exhaust ventilation with adequate effectiveness)*
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 % *(justification: Use local exhaust ventilation with adequate effectiveness)*

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	PROC 3 - Use in closed batch process (synthesis or formulation) PROC 5 - Mixing or blending in batch processes (multistage and/or significant contact) PROC 7 - Industrial spraying PROC 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities PROC 10 - Roller application or brushing PROC 13 - Treatment of articles by dipping and pouring PROC 14 - Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC 15 - Use of laboratory reagents in small scale laboratories
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: Continous 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 % *(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)	0.00063 % *(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 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 vacuüm 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 adeguate 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 % *(justification: Use local exhaust ventilation with adequate effectiveness)*

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 adeguate 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 % *(justification: Use local exhaust ventilation with adequate effectiveness)*
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 adeguate 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 % *(justification: Use local exhaust ventilation with adequate effectiveness)*
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	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 Wear suitable coveralls to prevent exposure to the skin Use suitable eye protection. Wear suitable face shield Wear chemically resistant gloves tested to EN374, in combination with intensive management supervision control. In case of potential exposure wear a suitable respiratory protection with adeguate 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
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 % *(justification: Carry out in a vented booth or extracted enclosure)*
Contributing Scenario (8) controlling industrial worker exposure for PROC 7	
Name of contributing scenario	7 - Industrial spraying
Scenario subtitle	Spraying; Spraying (manually) All open mould applications where resins is applied by manual spraying in an open work environement. Examples are spray lamination, gelcoat spraying and “chop-hoop” filament winding
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 adeguate 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 % *(justification: Use local exhaust ventilation with adequate effectiveness)*
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	Drain or remove substance from equipment prior to break-in or maintenance. 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 adeguate 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
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 % *(justification: Use local exhaust ventilation with adequate effectiveness)*
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	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	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 adeguate 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 % *(justification: Use local exhaust ventilation with adequate effectiveness)*
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 adeguate 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 % *(justification: Use local exhaust ventilation with adequate effectiveness)*
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 adeguate 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 % *(justification: Use local exhaust ventilation with adequate effectiveness)*
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 adeguate 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 % *(justification: Use local exhaust ventilation with adequate effectiveness)*
Contributing Scenario (14) controlling industrial worker exposure for PROC 14	
Name of contributing scenario	14 - Production of preparations or articles by tabletting, compression, extrusion, pelletisation
Scenario subtitle	Material transfers; Production or preparation or articles by tabletting, 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 adeguate 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 % *(justification: Use local exhaust ventilation with adequate effectiveness)*
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 % *(justification: Use local exhaust ventilation with adequate effectiveness)*

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	PROC 3 - Use in closed batch process (synthesis or formulation) PROC 4 - Use in batch and other process (synthesis) where opportunity for exposure arises PROC 5 - Mixing or blending in batch processes (multistage and/or significant contact) PROC 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities PROC 10 - Roller application or brushing PROC 11 - Non industrial spraying
Contributing Scenario (1) controlling environmental exposure for ERC 6C	
Operational conditions *(referred to styrene)*	
Daily amount used at site	48300 kg/day (*referred to styrene)*
Release times per year	300 days/year *(justification: Continous 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	0.000012 %

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 adeguate 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 adeguate 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 adeguate 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 adeguate 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 adeguate 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 adeguate 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 adeguate 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 adeguate 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 environement. 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 adeguate 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