SÄKERHETSDATABLAD

enligt Förordning (EG) nr 1907/2006

POLYLITE® 440-M850

Tidigare datum 30-Dec-2020 **Revideringsdatum** 23-Nov-2021 **Version:** 1

AVSNITT 1: Namnet på ämnet/blandningen och bolaget/företaget

1.1. Produktbeteckning

Produktnamn	**POLYLITE® 440-M850**
Kemiskt namn	**POLYESTERHARTS**
Rent ämne/blandning	Blandning
Unik formuleringsidentifierare (UFI)	9170-U091-Y00H-9K0C

1.2 Relevanta identifierade användningar av ämnet eller blandningen och användningar som det avråds från

Identifierade användningar (Låg utsläppen av styren) polyesterharts. Lamineringsresin.

1.3. Närmare upplysningar om den som tillhandahåller säkerhetsdatablad

Leverantör

Polynt Composites France S.A.
Route d'Arras CS 50019 62320 Drocourt, France
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LEVERANTÖREN AV PRODUKTEN ÄR FÖRETAGET ANGIVET PÅ ETIKETTEN OCH / ELLER I PRODUKTDOKUMENTEN

För mer information kan du kontakta

E-postadress	sdsregulatory@polynt.com
Internet-adress	http://www.polynt.com

1.4. Telefonnummer för nödsituationer

Detta telefonnummer är tillgängligt under dygnets 24 timmar, 7 dagar i veckan.

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

Telefonnummer till Giftinformationscentralen
Europeiska larmnumret : 112
Giftinformationscentralen : +46 8 33 12 31

AVSNITT 2: Farliga egenskaper

2.1. Klassificering av ämnet eller blandningen

Ämnets eller blandningens klassificering - GHS/CLP (n° 1272/2008)

Hudfrätning/irritation	Kategori 2 - (H315)
Allvarlig ögonskada/ögonirritation	Kategori 2 - (H319)
Reproduktionstoxisk	Kategori 2 - (H361d)
Systemisk toxicitet för specifikt målorgan (enkel exponering)	Kategori 3 - (H335)
Specifik organtoxicitet - upprepad exponering	Kategori 1 - (H372)
Kronisk akvatisk toxicitet	Kategori 3 - (H412)
Brandfarliga vätskor	Kategori 3 - (H226)

2.2. Märkningsuppgifter

Innehåller styren

Signalord **Fara**

Faroangivelser
H315 - Irriterar huden
H319 - Orsakar allvarlig ögonirritation
H335 - Kan orsaka irritation i luftvägarna
H361d - Misstänks kunna skada det ofödda barnet
H372 - Orsakar organskador genom lång eller upprepad exponering vid inandning
H412 - Skadliga långtidseffekter för vattenlevande organismer
Fysikaliska risker
H226 - Brandfarlig vätska och ånga

EU H-fras(er)

EUH208 - innehåller kobaltoktoat. Kan orsaka en allergisk reaktion.

Skyddsangivelser
P210 - Får inte utsättas för värme, heta ytor, gnistor, öppen låga eller andra antändningskällor. Rökning förbjuden
P243 - Vidta åtgärder mot statisk elektricitet
P260 - Inandas inte ånga
P273 - Undvik utsläpp till miljön
P280 - Använd skyddshandskar/skyddskläder/ögonskydd/ansiktsskydd
P302 + P352 - VID HUDKONTAKT: Tvätta med mycket tvål och vatten
P304 + P340 - VID INANDNING: Flytta personen till frisk luft och se till att andningen underlättas
P305 + P351 + P338 - VID KONTAKT MED ÖGONEN: Skölj försiktigt med vatten i flera minuter. Ta ur eventuella kontaktlinser om det går lätt. Fortsätt att skölja
P403 + P233 - Förvaras på väl ventilerad plats. Förpackningen ska förvaras väl tillsluten

2.3. Andra faror

PBT/vPvB se punkt 12.5.

AVSNITT 3: Sammansättning information om beståndsdelar

3.2. Blandningar

Farliga komponenter

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

Den utförliga texten för H-översikterna nämnda i detta avsnitt, se avsnitt 16

AVSNITT 4: Åtgärder vid första hjälpen

4.1. Beskrivning av åtgärder vid första hjälpen

Allmän rekommendation
Visa detta varuinformationsblad för jourhavande läkare
Andas ej in damm/rök/gas/dimma/ångor/sprutdimma

Ögonkontakt
Skölj noggrant med mycket vatten, även under ögonlocken.
Håll ögat ordentligt öppet under sköljningen.
Kontakta läkare om besvär kvarstår

Hudkontakt
Tvätta omedelbart med tvål och mycket vatten. Ta av alla nedsmutsade kläder och skor
Om hudirritation kvarstår, kontakta läkare

Inandning
Flytta ut i friska luften
Vid andningsstillestånd, ge konstgjord andning
Kontakta läkare

Förtäring
Framkalla INTE kräkning
Skölj munnen.
Kontakta läkare

Skydd av dem som ger första hjälp
Använd personlig skyddsutrustning
Se avsnitt 8 för ytterligare information

4.2. De viktigaste symptomen och effekterna, både akuta och fördröjda

Ögonkontakt Irriterar ögonen

Hudkontakt Irriterar huden
Kan orsaka en allergisk reaktion.

Inandning Farligt: risk för allvarliga hälsoskador vid långvarig exponering genom inandning
Irriterar andningsorganen

Förtäring Förtäring kan ge mag-tarmkanalsirritation, illamående, kräkningar och diarré

4.3. Angivande av omedelbar medicinsk behandling och särskild behandling som eventuellt krävs

Information till läkare Ingen information tillgänglig

AVSNITT 5: Brandbekämpningsåtgärder

5.1. Släckmedel

Lämpliga släckmedel Pulver, Skum, Koldioxid (CO_2), (slutna system)

Brandsläckningsmedel som av säkerhetsskäl inte får användas Använd inte en kraftig vattenstråle då den kan sprida och utvidga branden.

5.2. Speciella faror som orsakas av ämnet eller blandningen

Särskilda faror vid exponering som orsakas av ämnet eller beredningen i sig eller av förbränningsprodukter eller gaser som uppstår vid brand Ångor kan bilda explosiva blandningar med luft. De flesta ångor är tyngre än luft. De sprider sig längs marken och ackumuleras i låga eller begränsade utrymmen (avlopp, källare, cisterner) Upphettning eller brand kan frigöra giftig gas : Kolmonoxid

5.3. Råd till brandbekämpningspersonal

Särskild skyddsutrustning för brandbekämpningspersonal Använd tryckluftsmask och skyddskläder.

Ytterligare information Kyl behållare/tankar genom vattenbesprutning.
Brandavfall och förorenat släckvatten skall omhändertas enligt föreskrift.

AVSNITT 6: Åtgärder vid oavsiktliga utsläpp

6.1. Personliga skyddsåtgärder, skyddsutrustning och åtgärder vid nödsituationer

För icke-räddningspersonal

Personliga skyddsåtgärder Avlägsna alla antändningskällor
Värme, flammor och gnistor.
Vidtag åtgärder mot statisk elektricitet.
Sörj för lämplig ventilation
Använd personlig skyddsutrustning

För räddningspersonal

Undvik inandning av ångor och dimma I händelse av brand och/eller explosion andas inte in rök. Använd personlig skyddsutrustning

6.2. Miljöskyddsåtgärder

Miljöskyddsåtgärder Produkten får inte komma ut i avlopp, vattendrag eller i marken.
Spola inte ut i ytvatten eller avloppssystem

6.3. Metoder och material för inneslutning och sanering

Rengöringsmetoder Begränsa spillet och samla sedan in det med oantändligt och vätskebindande material (t.ex. sand, jord, kiselgur, vermikulit) och placera det i en behållare för bortskaffning enligt lokala/nationella bestämmelser (se avsnitt 13)
Använd rena, icke gnistrande redskap för att samla upp det absorberade materialet

6.4. Hänvisning till andra avsnitt

Se avsnitt 8 för ytterligare information
Se Avsnitt 12 för ytterligare ekologisk information

AVSNITT 7: Hantering och lagring

7.1. Försiktighetsmått för säker hantering

Försiktighetsmått för säker hantering Undvik att statisk elektricitet byggs upp med anslutning till jord

Använd endast i lokaler med tillräcklig ventilation
Bär lämplig andningsapparat då ventilationen är bristfällig
För personligt skydd se under avsnitt 8

Förebyggande av brand och explosion Förvaras åtskilt från öppen eld, heta ytor och antändningskällor Tomma behållare kan innehålla brännbara eller explosiva ångor

Åtgärder beträffande hygien Ät, drick eller rök ej under hanteringen Tvätta händerna före raster och efter arbetstidens slut. Normal rengöring av utrustning, arbetsområde och kläder

7.2. Förhållanden för säker lagring, inklusive eventuell oförenlighet

Tekniska åtgärder/lagringsförhållanden Förvara på torr, sval, väl ventilerad plats.
Förvaras vid en temperatur som inte överstiger 30°C
Förvaras åtskilt från värme och antändningskällor.

Material som skall undvikas Starkt oxiderande ämnen, Peroxider, Reduktionsmedel

Förpackningsmaterial metallisk Behållare av GRP

Olämpliga material för behållare koppar, Kopparlegeringar, Brons, Zink

7.3. Specifik slutanvändning

Specifika användningsområden Ingen information tillgänglig

AVSNITT 8: Begränsning av exponeringen/personligt skydd

8.1. Kontrollparametrar

Exponeringsgränser

Kemiskt namn	Europeiska Unionen	ACGIH OEL (Ceiling)	Sverige
styren 100-42-5	-	ACGIH (2020): TLV-TWA: 10 ppm TLV-STEL/C: 20 ppm Notes: OTO, A3, BEI Critical effects: CNS and hearing impairment, URT irr, peripheral neuropathy visual disorders	nivågränsvärde (NVG): 10 ppm - 43 mg/m³ kortidsvärde (KTV): 20 ppm - 86 mg/m³

Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5			350 mg/m³ TLV 500 mg/m³ Indicative STEL
kobaltoktoat 136-52-7		0.02 mg/m³	Vi känner inte till några nationella hygieniska gränsvärden.

Särskilda faror som ämnet eller blandningen kan medföra

Biologiska standarder

Härledd nolleffektnivå (DNEL)

Härledd nolleffektnivå (DNEL)				
styren (100-42-5)				
Typ	DNEL oral	DNEL dermal	DNEL inandning	Anmärkning
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	

Silica, amorphous, fumed, crystalline-free (112945-52-5)				
Typ	DNEL oral	DNEL dermal	DNEL inandning	Anmärkning
Workers - Long Term - Systemic effect			4 mg/m³	

kobaltoktoat (136-52-7)				
Typ	DNEL oral	DNEL dermal	DNEL inandning	Anmärkning
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	

Uppskattad nolleffektkoncentration (PNEC)

PNEC Component		
styren (100-42-5)		
Exponering	Typ	PNEC
Sötvatten	PNEC Aqua	0.028 mg/L
Havsvatten	PNEC Aqua	0.014 mg/L
Oregelbunden användning/utsläpp	PNEC Aqua	0.04 mg/L
Sötvatten	PNEC Sediment	0.614 mg/Kg.dw
Havsvatten	PNEC Sediment	0.307 mg/Kg.dw
Landmiljö	PNEC Soil	0.2 mg/Kg.dw
STP mikroorganismer	PNEC STP	5 mg/L

Silica, amorphous, fumed, crystalline-free (112945-52-5)		
Exponering	Typ	PNEC
Sekundär förgiftning	PNEC Oral	60000 mg/kg

kobaltoktoat (136-52-7)

Exponering	Typ	PNEC
Sötvatten	PNEC Aqua	0.62 µg/L
Havsvatten	PNEC Aqua	2.36 µg/L
STP mikroorganismer	PNEC STP	0.37 mg/L
Sötvatten	PNEC Sediment	53.8 mg/kg sediment dw
Havsvatten	PNEC Sediment	69.8 mg/kg sediment dw
Landmiljö	PNEC Soil	10.9 mg/kg soil dw

8.2. Begränsning av exponeringen

Begränsning av exponeringen på arbetsplatsen

Tekniska åtgärder Vidta tekniska åtgärder för att klara de hygieniska gränsvärdena.
Vid arbete i slutna utrymmen (tankar, behållare, m.m.), se till att det finns tillräcklig mängd andningsbar luft och bär rekommenderad utrustning

Personlig skyddsutrustning

Allmänna uppgifter Använd personlig skyddsutrustning.
Andningsskydd Tillhandahåll en bra standard av allmänventilation (minst 3- 5 luftbyten per timme).
Om det är sannolikt att exponeringsgränser kommer att överskridas / Använd lämpligt andningsskydd om ventilationen är otillräcklig :
Andningsskydd med filter Typ A (Filter för organiska gaser och ångor som uppfyller EN 14387 , APF 40 < 1 timme, APF 200 > 1 timme) / Typ A(2)/P3 i kombination med Partikelfiler som uppfyller EN 143 , vid dammexposition
Ögonskydd Skyddsglasögon med sidoskydd. Bär inte kontaktlinser.
Hud- och kroppsskydd Antistatstövlar. Skyddsskor eller stövlar. Använd brand-/flamsäkra eller brand-/flamhämmande kläder.
Handskydd Använd kemikaliebeständiga handskar (som provats enligt EN 374) och sörj för grundläggande personalutbildning
Handskmaterial : Neopren , Nitriler , Viton (R) eller polyvinylalkohol
Handskar skall kasseras och ersättas om det föreligger indikationer på utnötning eller kemiskt genombrott

Begränsning av miljöexponeringen

Begränsning av miljöexponeringen Se till att materialet inte förorenar grundvattnet.

AVSNITT 9: Fysikaliska och kemiska egenskaper

9.1. Information om grundläggande fysikaliska och kemiska egenskaper

Egenskap	Värden	Anmärkning
Aggregationstillstånd	Vätska	
Färg	blå	
Utseende		Inga data tillgängliga
Partikelstorlek		Inga data tillgängliga
Lukt	Från	
Lukttröskel	0.15 ppm	(styren) Referensvärdena är sådana av styren
pH		Inga data tillgängliga
PH (som vattenlösning)		Inga data tillgängliga
Smältpunkt/smältpunkts intervall	-30 °C	(styren)
Fryspunkt		Inga data tillgängliga
Mjukningspunkt		Inga data tillgängliga
Kokpunkt	146 °C	(styren)
Flampunkt	31 °C	Seta closed cup
Brännbarhetsgräns i Luft		
Övre	6.1%	(styren)
Undre	1.1%	(styren)
Ångtryck	6.7 hPa	(Styrene) @ 20°C

Ångdensitet	3.6 (Air = 1)	(styren)
Densitet	1.08 - 1.12 g/cm3	23°C
Specifik vikt		Inga data tillgängliga
Bulkdensitet		Inga data tillgängliga
Löslighet i vatten	olöslig (Vatten)	
Löslighet i andra lösningsmedel		Inga data tillgängliga
Fördelningskoefficient: n-oktanol/vatten	3	Referensvärdena är sådana av styren
Termisk tändtemperatur	490 °C	(styren)
Sönderdelningstemperatur		Inga data tillgängliga
Viskositet, kinematisk	1000 - 1183 mm2/s	Inga data tillgängliga
Viskositet, dynamisk	1100 - 1300 mPa.s	23 °C Brookfield Testmetod

9.2. Annan information

Information som har att göra med klasserna för fysikaliska faror

Egenskap	Värden	Anmärkning
Explosiva ämnen / blandningar		Inga data tillgängliga
Brandfarliga gaser		Inga data tillgängliga
Aerosoler		Inga data tillgängliga
Oxiderande gaser		Inga data tillgängliga
Gaser under tryck		Inga data tillgängliga
Brandfarliga vätskor		Inga data tillgängliga
Brandfarliga fasta ämnen		Inga data tillgängliga
Pyrofora vätskor		Inga data tillgängliga
Pyrofora fasta ämnen		Inga data tillgängliga
Självupphettande ämnen och blandningar		Inga data tillgängliga
Ämnen och blandningar som utvecklar brandfarlig gas vid kontakt med vatten		Inga data tillgängliga
Oxiderande vätskor		Inga data tillgängliga
Oxiderande fasta ämnen		Inga data tillgängliga
Oxiderande egenskaper		Inga data tillgängliga
Organiska peroxider		Inga data tillgängliga
Korrosivt för metaller		Inga data tillgängliga
Okänsliggjorda explosiva ämnen		Inga data tillgängliga

Andra säkerhetsegenskaper

Känslighet för mekaniska stötar		Inga data tillgängliga
SAPT (självaccelererande polymerisationstemperatur)		Inga data tillgängliga
Bildning av explosiva damm/luft-blandningar		Inga data tillgängliga
Sur/alkalisk reserv		Inga data tillgängliga
Avdunstningshastighet	0.49	(BuAc = 1) (Styren)
Blandbar		Inga data tillgängliga
Konduktivitet		Inga data tillgängliga
Frätning		Inga data tillgängliga
Gasgrupp		Inga data tillgängliga
Redoxpotential		Inga data tillgängliga
Fotokatalytiska egenskaper		Inga data tillgängliga

AVSNITT 10: Stabilitet och reaktivitet

10.1. Reaktivitet

Reaktivitet Produkten kan antändas och brinna vid temperaturer som överstiger flampunkten

10.2. Kemisk stabilitet

Stabilitet Stabil vid rekommenderade lagringsförhållanden.

10.3. Risken för farliga reaktioner

Farliga reaktioner Vid användning kan brännbara/explosiva ång-luftblandningar bildas.

Farlig polymerisation Polymerisation kan ske.

10.4. Förhållanden som ska undvikas

Förhållanden som ska undvikas Värme, flammor och gnistor.
Exponering för ljus.
Vidtag åtgärder mot statisk elektricitet.

10.5. Oförenliga material

Material som skall undvikas Starkt oxiderande ämnen, Peroxider, Reduktionsmedel

10.6 Farliga sönderdelningsprodukter

Farliga sönderdelningsprodukter Ofullständig förbränning och termolys producerar potentiellt giftiga gaser som exempelvis kolmonoxid och koldioxid

AVSNITT 11: Toxikologisk information

11.1 Information om de toxikologiska effekterna

Akut toxicitet

Inandning Farligt: risk för allvarliga hälsoskador vid långvarig exponering genom inandning Irriterar andningsorganen

Förtäring Förtäring kan ge mag-tarmkanalsirritation, illamående, kräkningar och diarré

Kemiskt namn	LD50 oral	LD50 dermal	LC50 Inandning	Jämförelse
styren 100-42-5	5000 mg/kg (Rat)	> 2000 mg/kg bw (Rat) 24h OECD 402	11.8 mg/L (Rat) 4h CSR	
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	> 5000 mg/kg bw (Rat) Read across with : C9-C14 aliphatic, <2% aromatic hydrocarbons Similar to OECD 401	> 5000 mg/kg bw (Rabbit) Read across with : C9-C14 aliphatic, <2% aromatic hydrocarbons Similar to OECD 402	> 5000 mg/m³ air (Rat) 4h Read across with : C9-C14 aliphatic, <2% aromatic hydrocarbons Similar to OECD 403	
Silica, amorphous, fumed, crystalline-free 112945-52-5	> 5000 mg/kg bw (Rat) OECD 401	> 5000 mg/kg (Rabbit)	> 0.14 mg/L air (Rat) 4h (analytical) OECD 403	
kobaltoktoat 136-52-7	3129 mg/kg/bw (Rat) OECD 425	> 2000 mg/kg bw (Rat) OECD 402		

Frätande/irriterande på huden

Kemiskt namn	Frätande/irriterande på huden	Jämförelse
styren 100-42-5	Irriterar huden in vivo-analys kanin	
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	Ingen hudirritation in vivo-analys kanin liknande OECD 404	C9-C14 aliphatic, <2% aromatic hydrocarbons
Silica, amorphous, fumed, crystalline-free 112945-52-5	Ingen hudirritation kanin OECD 404	
kobaltoktoat 136-52-7	Inte frätande på huden in vitro-analys OECD 431 EU Method B. 40	

Allvarlig ögonskada/ögonirritation

Kemiskt namn	Allvarlig ögonskada/ögonirritation	Jämförelse
styren 100-42-5	Irriterar ögonen in vivo-analys kanin	
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	Ingen ögonirritation in vivo-analys (kanin) OECD 405	C9-C14 aliphatic, <2% aromatic hydrocarbons
Silica, amorphous, fumed, crystalline-free 112945-52-5	Ingen ögonirritation kanin OECD 405	
kobaltoktoat 136-52-7	Måttlig ögonirritation OECD 437 EU Method B.47 Irriterar ögonen kanin OECD 405	

Luftvägs- eller hudsensibilisering Kan orsaka en allergisk reaktion.

Kemiskt namn	Luftvägs- eller hudsensibilisering	Jämförelse
styren 100-42-5	Orsakar ej hudsensibilisering (hudallergi) Orsakar ej inandningssensibilisering (allergi via inandning) CSR	
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	Orsakar ej hudsensibilisering (hudallergi) in vivo-analys marsvin liknande OECD 406	C9-C14 aliphatic, <2% aromatic hydrocarbons
Silica, amorphous, fumed, crystalline-free 112945-52-5	Orsakar ej hudsensibilisering (hudallergi) Orsakar ej inandningssensibilisering (allergi via inandning)	
kobaltoktoat 136-52-7	Kan ge allergi vid hudkontakt in vivo-analys mus OECD 429	

mutagena effekter

in vitro-analys

Kemiskt namn	Ames' test	Jämförelse
styren 100-42-5	Tvetydigt In vitro-undersökning av genmutation hos bakterier (S. typhimurium G46, TA1530, TA 1535, TA100, TA98, TA1538, TA 1537) OECD 471	
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	Negativ In vitro-undersökning av genmutation hos bakterier (S. typhimurium TA 1535, TA 1537, TA 98, TA100 and TA 102) OECD 471	C9-C14 aliphatic, <2% aromatic hydrocarbons
Silica, amorphous, fumed, crystalline-free 112945-52-5	Negativ In vitro-undersökning av genmutation hos bakterier OECD 471	
kobaltoktoat 136-52-7	Negativ In vitro-undersökning av genmutation hos bakterier (S. typhimurium TA 1535, TA 1537, TA 98, TA100 and TA 102) OECD 471	Cas N°: 68956-82-1, 14024-48-7

Kemiskt namn	In vitro-test av cellgenmutation hos däggdjur	Jämförelse
styren 100-42-5	Tvetydigt Genmutationsstudie på däggdjursceller in vitro hamster OECD 476	

Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	Negativ Genmutationsstudie på däggdjursceller in vitro hamster liknande OECD 476	C9-C14 aliphatic, <2% aromatic hydrocarbons
Silica, amorphous, fumed, crystalline-free 112945-52-5	Negativ Genmutationsstudie på däggdjursceller in vitro OECD 476	
kobaltoktoat 136-52-7	Negativ Genmutationsstudie på däggdjursceller in vitro mus OECD 476	Cas N°: 7440-48-4, 1308-06-1, 10124-43-3, 12016-80-7
Kemiskt namn	**In vitro-test av kromosomaberration hos däggdjur**	**Jämförelse**
styren 100-42-5	positiv Kromosomaberrationstest in vitro OECD 473 OECD 479	
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	Negativ Kromosomaberrationstest in vitro Humana lymfocyter liknande OECD 473	C9-C14 aliphatic, <2% aromatic hydrocarbons
Silica, amorphous, fumed, crystalline-free 112945-52-5	Negativ Kromosomaberrationstest in vitro OECD 473	

in vivo-analys

Kemiskt namn	**Test av oplanerad DNA-syntes (UDS)**	**Jämförelse**
styren 100-42-5	Negativ mus OECD 486 OECD 474	
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	Negativ mus liknande OECD 474	C9-C14 aliphatic, <2% aromatic hydrocarbons
Silica, amorphous, fumed, crystalline-free 112945-52-5	Negativ råtta	
kobaltoktoat 136-52-7	Negativ råtta OECD 474 OECD 475	Cas N°: 68956-82-1, 14024-48-7, 10026-24-1

Cancerogenitet

Cancerogenitet				
styren (100-42-5)				
Exponeringsväg	Metod	Arter	Dos	Utvärdering
Inandning	OECD 453	råtta	NOAEC systemic (carcinogenicity) >= 4.34 mg/L air (nominal)	Negativ
Inandning	OECD 453	mus	LOAEC (carcinogenicity) female/male = 0.09 - 0.18 mg/L air resp., NOAEC (carcinogenicity) male = 0.09 mg/L air	positiv
Oral	Ingen information tillgänglig	råtta	NOAEL (carcinogenicity) >= 2000 mg/kg bw /day	positiv
Oral	Ingen information tillgänglig	mus	LOAEL (carcinogenicity) = 150 mg/kg bw /day	positiv

Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated (93685-81-5)				
Exponeringsväg	Metod	Arter	Dos	Utvärdering
Inandning	Jämförelse CAS N°: 64742-88-7 liknande OECD 453	råtta	NOAEC (105 weeks) >= 2200 mg/m³ air	Negativ

Silica, amorphous, fumed, crystalline-free (112945-52-5)				
Exponeringsväg	Metod	Arter	Dos	Utvärdering

Oral	OECD 453	råtta	NOAEL = 1800 - 3200 mg/kg bw/day	Negativ

Reproduktionstoxicitet

Reproduktionstoxicitet				
styren (100-42-5)				
Exponeringsväg	Metod	Arter	Dos	Utvärdering
Inandning	Ingen information tillgänglig	råtta	NOAEL/LOAEL (fertility) 60d = 100 - 200 mg/kg bw/day	positiv
Oral	OECD 422	råtta	NOAEL/LOAEL (fertility) 60d = 200 - 400 mg/kg bw/day	positiv
Inandning	OECD 416	råtta	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)	Negativ

Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated (93685-81-5)				
Exponeringsväg	Metod	Arter	Dos	Utvärdering
Oral	Jämförelse C9-C16 Aliphatics, 25% aromatics OECD 421 OECD 422	råtta	NOAEL (reproductive & developmental toxicity) = 1000 mg/kg/day	Negativ

Silica, amorphous, fumed, crystalline-free (112945-52-5)				
Exponeringsväg	Metod	Arter	Dos	Utvärdering
Oral	OECD 415	råtta	NOAEL = 497 mg/kg bw/day	Negativ

kobaltoktoat (136-52-7)				
Exponeringsväg	Metod	Arter	Dos	Utvärdering
Oral	Jämförelse Cas N°: 7440-48-4 OECD 422	råtta	NO(A)EL (P&F1) 28d = 30 mg/kg bw/day	positiv

Fosterskadande effekter Misstänks skada det ofödda barnet.

Fosterskadande effekter				
styren (100-42-5)				
Exponeringsväg	Metod	Arter	Dos	Utvärdering
Inandning	Ingen information tillgänglig	råtta	NOAEC/LOAEC (maternal toxicity + developemental toxicity) >50d = 1.08 - 2.15 mg/L air	positiv
Inandning	OECD 414	råtta	LOAEC (maternal toxicity) 6-15d = 1.28 mg/L air	positiv
Inandning	OECD 414	råtta	NOAEC (developmental toxicity) 6-15d >= 2.56 mg/L air	Negativ
Inandning	OECD 414	kanin	NOAEC (maternal toxicity + developmental toxicity) 6-18d = 2.56 mg/L air	Negativ

Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated (93685-81-5)				
Exponeringsväg	Metod	Arter	Dos	Utvärdering
Oral	Jämförelse C9-14 aliphatics (2-25% aromatic) OECD 414	råtta	NOAEL (reproductive toxicity) male >= 3000 mg/kg/day NOAEL (reproductive toxicity) female >= 1500 mg/kg/day NOAEL (F1) = 750 mg/kg/day	Negativ

Silica, amorphous, fumed, crystalline-free (112945-52-5)				
Exponeringsväg	Metod	Arter	Dos	Utvärdering
Oral	OECD 414	råtta	NOAEL (maternal toxicity) = 1350 mg/kg bw/day NOAEL (teratogenicity) = 1350 mg/kg bw/day	Negativ

Specifik organtoxicitet - enstaka exponering Kan irritera andningsorganen

Specifik organtoxicitet - upprepad exponering Orsakar organskador genom lång eller upprepad exponering , målorgan : Centrala nervsystemet , Öronen

STOT - upprepad exponering				
styren (100-42-5)				
Exponeringsväg	Metod	Arter	Dos	Anmärkning
Inandning	OECD 412	råtta mus	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	
Inandning	Ingen information tillgänglig	råtta	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	
Oral	Ingen information tillgänglig	råtta	NOAEL (toxicity) = 1000 mg/kg bw/day LOAEL (toxicity) = 2000 mg/kg bw/day	
Oral	Ingen information tillgänglig	mus	NOAEL (toxicity) = 150 mg/kg bw /day LOAEL (toxicity) = 300 mg/kg bw /day	
Inandning	OECD 453	råtta	LOAEC local (toxicity) = 0.21 mg/L air	

Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated (93685-81-5)				
Exponeringsväg	Metod	Arter	Dos	Anmärkning
Oral	Jämförelse Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics liknande OECD 408	råtta	NOAEL (90d) >= 5000 mg/kg bw/day	
Inandning	Jämförelse Hydrocarbons, C10-C12, isoalkanes, < 2% aromatics liknande OECD 413	råtta	NOAEL (90d) > 10400 mg/m³ air	

Silica, amorphous, fumed, crystalline-free (112945-52-5)				
Exponeringsväg	Metod	Arter	Dos	Anmärkning
Oral	OECD 408	råtta	NOEL (highest dose) 4000 <= 4500 mg/kg bw/day 90d	
Inandning	OECD 413	råtta	NOEC = 1.3 mg/m³ air NOEC < 1.3 mg/m³ air 90d	

Hud	Ingen information tillgänglig	kanin	NOAEL >= 10000 mg/kg bw/day	

kobaltoktoat (136-52-7)				
Exponeringsväg	Metod	Arter	Dos	Anmärkning
Oral	Jämförelse cobalt dichloride hexahydrate OECD 408	råtta	NOAEL (90d) = 3 mg/kg bw/day	

Fara vid aspiration Beroende på viskositeten ingen aspirationsrisk med denna produkt.

Ytterligare information Ingen

AVSNITT 12: Ekologisk information

12.1. Toxicitet

Skadligt för vattenlevande organismer, kan orsaka skadliga långtidseffekter i vattenmiljön. Spola inte ut i ytvatten eller avloppssystem

Akut toxicitet i vattenmiljön - Innehållsuppgifter

Kemiskt namn	Algtoxicitet	Toxicitet för Daphnia och andra vattenlevande ryggradslösa djur.	Fisktoxicitet	Toxicitet för mikroorganismer
styren 100-42-5	EC50 (72h) = 4.9 mg/L (Pseudokirchnerella subcapitata) EPA OTS 797.1050	EC50 (48h) = 4.7 mg/L (Daphnia magna) NOEC = 1.9 mg/L (Daphnia magna) OECD 202	LC50 (96h) = 4.02 - 10 mg/L (Pimephales promelas) OECD 203	EC (30min) = 500 mg/L (Activated sludge of a predominantly domestic sewage) OECD 209
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	EL50 (72h) > 1000 mg/L (Pseudokirchneriella subcapitata) Read across with : Hydrocarbons, C10-C12, isoalkanes, <2% aromatics OECD 201	LL50 (48h) > 3000 mg/L (Daphnia magna) OECD 202	LL50 (96h) > 1000 mg/L (Oncorhynchus mykiss) Read across with : Hydrocarbons, C10-C12, isoalkanes, <2% aromatics OECD 203	EC50 (3h) > 100 mg/L (Activated sludge of a predominantly domestic sewage) Read across with : Hydrocarbons, C14-C18, n-alkanes, isoalkanes, cyclics, <2% aromatics OECD 209
Silica, amorphous, fumed, crystalline-free 112945-52-5		EL50 (24h) >= 1000 mg/L (Daphnia magna) OECD 202	LC50 (96h) > 10000 mg/L (Brachydanio rerio) OECD 203	
kobaltoktoat 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

Kronisk toxicitet i vattenmiljön - Innehållsuppgifter

Kemiskt namn	Algtoxicitet	Toxicitet för Daphnia och andra vattenlevande ryggradslösa djur.	Fisktoxicitet	Toxicitet för mikroorganismer
styren 100-42-5		NOEC (21d) = 1.01 mg/L (Daphnia magna) LOEC (21d) = 2.06 mg/L (Daphnia magna) EC50 (21d) = 1.88 mg/L (Daphnia magna) OECD 203		

Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5		NOELR (21d) = 1 mg/l (Daphnia magna) OECD 211		
kobaltoktoat 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		

Effekter på jordlevande organismer - Innehållsuppgifter

Kronisk toxicitet				
styren (100-42-5)				
Kronisk toxicitet	Metod	Arter	Värden	Anmärkning
xicitet för ryggradslösa djur	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. Persistens och nedbrytbarhet

Kemiskt namn	**Bionedbrytning**	**Utvärdering**
styren 100-42-5	87% (20d) similar to OECD 301D	Lätt bionedbrytbar
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	68-89.8% (28d) Activated sludge, domestic, non-adapted Read across with : Hydrocarbons, C10-C13, isoalkanes, cyclics, <2% aromatics, Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics, Hydrocarbons, C11-C12, n-alkanes, <2% aromatics, Hydrocarbons, C12-C16, n-alkanes, isoalkanes, cyclics, <2% aromatics OECD 301 F	Lätt bionedbrytbar
kobaltoktoat 136-52-7	60% (> 10d), OECD 301 B	Lätt bionedbrytbar

12.3. Bioackumuleringsförmåga

Biokoncentrationsfaktor (BCF)		
styren (100-42-5)		
Metod	Arter	Biokoncentrationsfaktor (BCF)
Beräkningsmetod		74

Kemiskt namn	**log Pow**
styren 100-42-5	3
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	6.96

12.4. Rörligheten i jord

Kemiskt namn	**LogKoc**	**Koc**
styren 100-42-5	2.55	352

12.5. Resultat av PBT- och vPvB-bedömningen

Kemiskt namn	PBT	vPvB
styren 100-42-5	Ämnet anses varken vara persistent, bioackumulerande eller giftigt (PBT).	Ämnet anses varken vara mycket perisistent eller mycket bioackumulerande (vPvB).
Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated 93685-81-5	Ämnet anses varken vara persistent, bioackumulerande eller giftigt (PBT).	Ämnet anses varken vara mycket perisistent eller mycket bioackumulerande (vPvB).
Silica, amorphous, fumed, crystalline-free 112945-52-5	Ämnet anses varken vara persistent, bioackumulerande eller giftigt (PBT).	Ämnet anses varken vara mycket perisistent eller mycket bioackumulerande (vPvB).

12.6. Andra skadliga effekter

Ingen känd.

AVSNITT 13: Avfallshantering

13.1. Avfallsbehandlingsmetoder

Avfall från överskott/oanvända produkter Avfallshantera i enlighet med de Europeiska direktiven för avfall och farligt avfall.
Spola inte ut i ytvatten eller avloppssystem

Förorenad förpackning Tomma behållare skall lämnas till godkänd avfallshanteringsanläggning för återanvändning eller kvittblivning.

Ytterligare information Enligt den Europeiska Avfallskatalogen (EWC) är avfallskoderna inte produktspecifika utan användningsspecifika.
Avfallskoder skall tilldelas av användaren baserade på produktens tilltänkta användningsområde.

AVSNITT 14: Transportinformation

14.1. UN-nummer eller ID-nummer

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

14.2. Officiell transportbenämning

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

14.3. Faroklass för transport

ADR-RID
Faroklass 3

IMDG/IMO
Faroklass 3
ICAO/IATA
Faroklass 3
ADN
Faroklass 3

14.4. Förpackningsgrupp

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

14.5. Miljöfaror

ADR-RID	Nej
IMDG/IMO	Nej
Vattenförorenande ämne	Nej
ICAO/IATA	Nej
ADN	Nej

14.6. Särskilda försiktighetsåtgärder

ADR-RID
Klassificeringskod F1
Tunnelbegränsningskod D/E
Begränsad mängd 5 L
IMDG/IMO
EmS F-E, S-E
Begränsad mängd 5 L
ICAO/IATA
ERG-kod 3L
Begränsad mängd 10 L
ADN
Klassificeringskod F1
Begränsad mängd 5 L
ventilation VE01

Särskilda försighetsåtgärder för användare
Särskilda försiktighetsåtgärder Ingen information tillgänglig

14.7. Bulktransport till sjöss enligt IMO:s instrument

Bulktransport enligt bilaga II till MARPOL och IBC-koden inte tillämplig

AVSNITT 15: Gällande föreskrifter

15.1. Föreskrifter/lagstiftning om ämnet eller blandningen när det gäller säkerhet, hälsa och miljö

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

Blandningen är föremål för restriktioner i användningen: se bilaga XVII ur förordningen 1907/2006/EG (REACH): Kolumn 1, nr 3; Kolumn 1, nr 40.

Europeiska Unionen

Information om nationella regler
Sverige
Undvik att givna hygieniska gränsvärden överstigs (se under avsnitt 8).

15.2. Kemikaliesäkerhetsbedömning

Kemikaliesäkerhetsbedömning	Ja
Exponeringsscenario	Exponeringsscenario som bilaga till säkerhetsdatabladet.

AVSNITT 16: Annan information

Fullständig text av faroangivelser som hänvisas till under avsnitten 2 och 3

H226 - Brandfarlig vätska och ånga
H304 - Kan vara dödligt vid förtäring om det kommer ner i luftvägarna
H315 - Irriterar huden
H317 - Kan orsaka allergisk hudreaktion
H319 - Orsakar allvarlig ögonirritation
H332 - Skadligt vid inandning
H335 - Kan orsaka irritation i luftvägarna
H360Fd - Kan skada fertiliteten. Misstänks kunna skada det ofödda barnet
H361d - Misstänks kunna skada det ofödda barnet
H372 - Orsakar organskador genom lång eller upprepad exponering vid inandning
H400 - Mycket giftigt för vattenlevande organismer
H410 - Mycket giftigt för vattenlevande organismer med långtidseffekter
H412 - Skadliga långtidseffekter för vattenlevande organismer
EUH208 - Kan orsaka en allergisk reaktion.

Råd om utbildning	Hantera i enlighet med god yrkeshygien och säkerhetspraxis. För att undvika risker för människor och miljö, följ bruksanvisningen.
Nyckeldatakällor använda till att sammanställa varuinformationsbladet	ECHA
Tidigare datum	30-Dec-2020
Revideringsdatum	23-Nov-2021
Revideringsanmärkning	Uppdaterade säkerhetdatabladsavsnitt : Alla Avsnitt

Detta säkerhetsdatablad uppfyller kraven i Förordning (EG) Nr 1907/2006

Fritagande från ansvar
Informationen i detta säkerhetsdatablad är enligt vår information och så vitt vi vet korrekt vid det angivna datumet för revidering. Informationen avser endast att vara en vägledning för säker hantering, användning, bearbetning, lagring, transport, avfallshantering och utsläpp och skall inte ses som garanti eller kvalitetsspecifikation. Informationen hänför sig endast till det angivna materialet och gäller inte för detta material använt i kombination med något annat material eller process om inte angivet i texten.

Slut på säkerhetsdatablad.blad

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