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

1.1. Productidentificatie

Handelsnaam: **DISTITRON VE 370 SC**

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

Vinylesterhars voor versterkte of gevulde kunststof producten.

(*)1.3. Details betreffende de verstrekker van het veiligheidsinformatieblad

Leverancier:

Polynt S.p.A.
Via Enrico Fermi, 51
24020 Scanzorosciate (BG)
Italy
Phone: +39 035 652 111
Fax : +39 035 652 421
sdsregulatory@polynt.com
www.polynt.com

Polynt Composites France S.A.
Route d'Arras CS 50019
62320 Drocourt
France
Phone: +33 3 21 74 84 00
Fax : +33 3 21 49 55 84
sdsregulatory@polynt.com
www.polynt.com

Polynt Composites Spain, S.L.U.
Avenida República Argentina, S/N
09200, Miranda de Ebro - Burgos
Spain
Phone: +34 947 027 202
Fax : +34 947 314 540
sdsregulatory@polynt.com
www.polynt.com

Polynt Composites Poland Sp. z o.o.
ul. Grabska 11d
32-005 Niepolomice
Poland
Phone: +48 12 281 42 00
Fax : +48 12 281 42 01
sdsregulatory@polynt.com
www.polynt.com

Polynt Composites Norway AS
Lilleborggata 4
1630 Gamle Fredrikstad
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Phone: +47 693 570 00
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sdsregulatory@polynt.com
www.polynt.com

Polynt Composites UK Ltd.
Laporte Road
Stallingborough - Near Grimsby
North East Lincolnshire DN41 8DR
United Kingdom
Phone: +44 1469 552570
Fax : +44 1469 552597
sdsregulatory@polynt.com
www.polynt.com

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

(*)1.4. Telefoonnummer voor noodgevallen

Carechem 24 International (h24):

Europe: +44 1235 239670
Middle East/Africa: +44 1235 239671
Americas: +1 215 207 0061
Asia-Pacific: +65 3158 1412

RUBRIEK 2: Identificatie van de gevaren

(*)2.1. Indeling van de stof of het mengsel

Reg CE 1272/2008

Indeling overeenkomstig Verordening 1272/2008/EG:

Gevarenklassen en Gevarenaanduiding	**Gevarenklasse en categorie**
Ontvlambare vloeistof H226: Ontvlambare vloeistof en damp.	Ontvl. vlst. 3

Huidcorrosie/irritatie H315: Veroorzaakt huidirritatie.	Huidirrit. 2
Ernstig oogletsel/oogirritatie H319: Veroorzaakt ernstige oogirritatie.	Oogirrit. 2
Voortplantingstoxiciteit H361d: Wordt ervan verdacht het ongeboren kind te schaden.	Voortpl. 2
Specifieke doelorgaantoxiciteit bij eenmalige blootstelling H335: Kan irritatie van de luchtwegen veroorzaken.	STOT eenm. 3
Specifieke doelorgaantoxiciteit bij herhaalde blootstelling H372: Veroorzaakt schade aan organen veroorzaken bij langdurige of herhaalde blootstelling: Target-organen: gehoororganen. Blootstellingsroute: Inademing.	STOT herh. 1
Gevaar voor het aquatisch milieu H412: Schadelijk voor in het water levende organismen, met langdurige gevolgen.	Aquat. chron. 3

(*)2.2. Etiketteringselementen

Etikettering overeenkomstig Verordening 1272/2008/EG:

Bevat: Styreen
INDEX N°: 601-026-00-0
CAS N°: 100-42-5
EC N°: 202-851-5

Pictogram:

GEVAAR

Gevarenaanduidingen:

H226: Ontvlambare vloeistof en damp.

H315: Veroorzaakt huidirritatie.

H319: Veroorzaakt ernstige oogirritatie.

H335: Kan irritatie van de luchtwegen veroorzaken.

H361d: Wordt ervan verdacht het ongeboren kind te schaden.

H412: Schadelijk voor in het water levende organismen, met langdurige gevolgen.

H372: Veroorzaakt schade aan organen veroorzaken bij langdurige of herhaalde blootstelling: Target-organen: gehoororganen. Blootstellingsroute: Inademing.

EUH208: Bevat 2-fenylpropeen (CAS 98-83-9). Kan een allergische reactie veroorzaken.

Voorzorgsmaatregelen:

P201: Alvorens te gebruiken de speciale aanwijzingen raadplegen.

P312: Bij onwel voelen een ANTIGIFCENTRUM/arts raadplegen.

P403+P235: Op een goed geventileerde plaats bewaren. Koel bewaren.

P501: Inhoud/verpakking afvoeren naar overeenstemming met de nationale/internationale regelgeving.

P233: In goed gesloten verpakking bewaren.

P303+P361+P353: BIJ CONTACT MET DE HUID (of het haar): verontreinigde kleding onmiddellijk uittrekken. Huid met water afspoelen [of afdouchen].

P260: Damp niet inademen.

P305+P351+P338: BIJ CONTACT MET DE OGEN: voorzichtig afspoelen met water gedurende een aantal minuten; contactlenzen verwijderen, indien mogelijk; blijven spoelen.

P210: Verwijderd houden van warmte, hete oppervlakken, vonken, open vuur en andere ontstekingsbronnen. Niet roken.

P280: Beschermende handschoenen/beschermende kleding/ oogbescherming/gelaatsbescherming dragen. (Zie SDS).

P243: Maatregelen treffen om ontladingen van statische elektriciteit te voorkomen.

2.3. Andere gevaren

Mengsel dat Styreen bevat:

Controleer of de dampconcentratie in de werkomgeving de blootstellingslimieten voor werknemers niet overschrijdt (zie hoofdstuk 8.1).

Dampen kunnen in combinatie met lucht een explosief mengsel vormen.

PBT/zPzB zie punt 12.5.

RUBRIEK 3: Samenstelling en informatie over de bestanddelen

(*)3.2. Mengsels

Reg CE 1272/2008

DE STOFFEN IN HET MENGSEL :

Internationale chemische identificatie:

- Unsaturated Vinyl ester

Indexnummer: NIET BESCHIKBAAR

Onverzadigd vinylester

Molecuulformule: NIET BESCHIKBAAR

Concentratiebereik : > 50%

REACH registratienummer: NIET TOEPASBAAR

CAS-nummer: NIET BESCHIKBAAR

EC-nummer: NIET BESCHIKBAAR

De polymeer is niet geclassificeerd volgens Verordening 1272/2008/EG.

Gevarenklassen en Gevarenaanduiding	**Gevarenklasse en categorie**

DE STOFFEN IN HET MENGSEL :

Internationale chemische identificatie:

- Styrene

Indexnummer: 601-026-00-0

Styreen

Molecuulformule: C8H8

Concentratiebereik : 35% < C < 50%

REACH registratienummer: 01-2119457861-32-XXXX

CAS-nummer: 100-42-5

EC-nummer: 202-851-5

Zelfclassificatie door de fabrikant volgens Verordening 1272/2008/EG:

Gevarenklassen en Gevarenaanduiding	**Gevarenklasse en categorie**
Ontvlambare vloeistof H226: Ontvlambare vloeistof en damp.	Ontvl. vlst. 3
Acute toxiciteit	Acute tox. 4

H332: Schadelijk bij inademing.

Huidcorrosie/irritatie — Huidirrit. 2
H315: Veroorzaakt huidirritatie.

Ernstig oogletsel/oogirritatie — Oogirrit. 2
H319: Veroorzaakt ernstige oogirritatie.

Voortplantingstoxiciteit — Voortpl. 2
H361d: Wordt ervan verdacht het ongeboren kind te schaden.

Specifieke doelorgaantoxiciteit bij eenmalige blootstelling — STOT eenm. 3
H335: Kan irritatie van de luchtwegen veroorzaken.

Specifieke doelorgaantoxiciteit bij herhaalde blootstelling — STOT herh. 1
H372: Veroorzaakt schade aan organen veroorzaken bij langdurige of herhaalde blootstelling: Target-organen: gehoororganen. Blootstellingsroute: Inademing.

Aspiratiegevaar — Asp. Tox. 1
H304: Kan dodelijk zijn als de stof bij inslikken in de luchtwegen terechtkomt.

Gevaar voor het aquatisch milieu — Aquat. chron. 3
H412: Schadelijk voor in het water levende organismen, met langdurige gevolgen.

DE STOFFEN IN HET MENGSEL :

Internationale chemische identificatie:

- 2-phenylpropene

Indexnummer: 601-027-00-6

2-fenylpropeen

Molecuulformule: C9H10

Concentratiebereik : 0.1% < C < 1%

REACH registratienummer: 01-2119472426-35-XXXX

CAS-nummer: 98-83-9

EC-nummer: 202-705-0

Zelfclassificatie door de fabrikant volgens Verordening 1272/2008/EG:

Gevarenklassen en Gevarenaanduiding	**Gevarenklasse en categorie**
Ontvlambare vloeistof H226: Ontvlambare vloeistof en damp.	Ontvl. vlst. 3
Ernstig oogletsel/oogirritatie H319: Veroorzaakt ernstige oogirritatie.	Oogirrit. 2
Sensibilisatie van de luchtwegen/de huid H317: Kan een allergische huidreactie veroorzaken.	Sens. huid 1B
Voortplantingstoxiciteit H361: Kan mogelijks de vruchtbaarheid of het ongeboren kind schaden.	Voortpl. 2
Specifieke doelorgaantoxiciteit bij eenmalige blootstelling H335: Kan irritatie van de luchtwegen veroorzaken.	STOT eenm. 3
Aspiratiegevaar H304: Kan dodelijk zijn als de stof bij inslikken in de luchtwegen terechtkomt.	Asp. Tox. 1

Gevaar voor het aquatisch milieu	Aquat. chron. 2

H411: Giftig voor in het water levende organismen, met langdurige gevolgen.

RUBRIEK 4: Eerstehulpmaatregelen

4.1. Beschrijving van de eerstehulpmaatregelen

Inhalatie:
Bij inademen direkt in de frisse lucht brengen.
Raadpleeg een arts indien irritatie aan de luchtwegen ontstaat of aanwezig blijft.

Huid:
Na aanraking met de huid onmiddellijk wassen met veel zeep en water.
Raadpleeg een arts indien irritatie ontstaat of voortduurt.

Contact met ogen:
Grondig afspoelen met water gedurende tenminste 15 minuten.
Til de deksels om het gehele oppervlak van het oog en het ooglid te wassen.
Raadpleeg een oogarts.

Inslikken:
Het braken niet teweegbrengen.
Indien braken op natuurlijke wijze verloopt, laat het slachtoffer voorover leunen om ademhalingsproblemen te vermijden.
Waarschuw een arts.

4.2. Belangrijkste acute en uitgestelde symptomen en effecten

Styreen (CAS 100-42-5)

Negatieve symptomen kunnen onder andere zijn:

Inademing: Irritatie van de luchtwegen, hoest.

Inslikken: misselijkheid of braken.

Contact met de ogen: Pijn of irritatie, traanafscheiding, roodheid.

Contact met de huid: Irritatie, roodheid.

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

Se afsnit 4.1.

RUBRIEK 5: Brandbestrijdingsmaatregelen

5.1. Blusmiddelen

Geschikte blusmiddelen:
Schuim, kooldioxide (CO2), poeder, verneveld water.

Ongeschikte blusmidddelen:
Gebruik geen waterstraal, omdat deze het vuur verder zou kunnen verspreiden en doen toenemen.

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

In geval van brand kunnen giftige gassen vrijkomen.

5.3. Advies voor brandweerlieden

Speciale beschermingssystemen in geval van brand:
Persoonlijke beschermingsmiddelen gebruiken. Aqualongen

Verdere suggesties:
Om de gesloten recipiënten, welke aan brand blootgesteld zijn, af te koelen, verstuivingswater gebruiken.

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

6.1. Persoonlijke voorzorgsmaatregelen, beschermde uitrusting en noodprocedures

Verwijder uit de betreffende ruimte alle personen die niet gerechtigd zijn om op te treden in noodgevallen.
Vermijd contact met de stof en verplaats de verpakking niet zonder passende beschermingsmaatregelen.
Gebruik de persoonlijke beschermingsmiddelen zoals aangegeven bij punt 8.
Gebruik een gasmasker indien grote hoeveelheden van de stof vrijkomen.
Alle ontstekingsbronnen elimineren.
Verwijder alle onverenigbare stoffen zoals uiteengezet in paragraaf 10.5 van VIB.

6.2. Milieuvoorzorgsmaatregelen

Beperk het vrijkomen van de stof zoveel mogelijk.
Voorkom dat de vrijgekomen stof in het rioolsysteem, in putten, in oppervlakte-of grondwater terechtkomt. Indien de vrijgekomen stof is terechtgekomen in een waterstroom of in het rioolsysteem of als deze het aardoppervlak of de vegetatie heeft vervuild, waarschuw dan de bevoegde instanties.

6.3. Insluitings- en reinigingsmethoden en -materiaal

Gebruik tijdens de schoonmaakprocedure geen apparaten die ontbrandingshaarden kunnen veroorzaken.
Zuig zo mogelijk de vrijgekomen stof op en/of absorbeer de niet op te zuigen stof met behulp van inerte materialen (zand, aarde, absorberende producten...) en verpak deze (gescheiden naar vloeistoffen en vaste stoffen) conform de vereisten voor afvalstoffenverwerking zoals aangegeven bij punt 13. Lucht de betreffende ruimte en was deze met water, na het verzamelen van de vrijgekomen stof, alvorens anderen toe te staan de ruimte te betreden.
Loos het water waarmee schoongemaakt is, niet in open water of in het rioolsysteem.

6.4. Verwijzing naar andere rubrieken

Zie punt 8 en 13.

RUBRIEK 7: Hantering en opslag

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

Aanbevelingen voor veilig gebruik:
Voor voldoende luchtverversing en/of afzuiging zorgen in de werkplaatsen.
Aanraking met de ogen en de huid vermijden.
Maatregelen treffen tegen ontladingen van statische elektriciteit.
Inademing van damp vermijden.

Algemene aanbevelingen inzake hygiëne professionele:
Niet eten, drinken of roken tijdens het gebruik van dit product.
Na het werken met dit product het gezicht, de handen en de mond grondig wassen.
Verontreinigde werkkleding mag de werkruimte niet verlaten.
Verontreinigde kleding wassen alvorens deze opnieuw te gebruiken.

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

Vereisten van het magazijn en van de vaten:
Op een droge, frisse en goed geventileerde plaats houden.
Verwijderd houden van zon en warmte om de kwaliteit van het product te behouden

Verdere informaties:
De recipiënt goed gesloten houden

Opslagstabiliteit:
Stabiel bij normale condities
Onverenigbaar met sterke oxidatiemiddelen.

7.3. Specifiek eindgebruik

Geen enkele geidentificeerd.

RUBRIEK 8: Maatregelen ter beheersing van blootstelling/persoonlijke bescherming

(*)8.1. Controleparameters

Er zijn geen experimentele gegevens over het mengsel.

Styreen (CAS 100-42-5):

AFGELEIDE DOSES ZONDER EFFECT(DNEL)/AFGELEIDE DOSES MET MINIMAAL EFFECT (DMEL):

Werklieden:

Oraal: Niet relevant.

Systemische effecten op lange termijn:
Inademing: DNEL 85 mg/m3 beoordeling van factor 1
Dermaal: DNEL 406 mg/Kg bw/day beoordeling van factor 1

Systemische effecten op korte termijn:
Inademing: DNEL 289 mg/m3 beoordeling van factor 3

Lokale effecten op korte termijn:
Inademing: DNEL 306 mg/m3 beoordeling van factor 3

Algehele bevolking:

Systemische effecten op lange termijn:
Inademing: DNEL 10.2 mg/m3 beoordeling van factor 3
Dermaal: DNEL 343 mg/Kg bw/day beoordeling van factor 1
Oraal: DNEL 2.1 mg/Kg bw/day beoordeling van factor 1

Systemische effecten op korte termijn:
Inademing: DNEL 174.25 mg/m3 beoordeling van factor 5

Lokale effecten op korte termijn:
Inademing: DNEL 182.75 mg/m3 beoordeling van factor 5

VOORSPELDE NUL EFFECT CONCENTRATION (PNEC):

Milieu:

Water:
PNEC water (water zoet): 0.028 mg/L beoordeling van factor 10
PNEC water (water zee): 0.014 mg/L beoordeling van factor 20
PNEC water (water intermitterende-release): 0.04 mg/L beoordeling van factor 100

Sediment:
PNEC sediment (water zoet): 0.614 mg/kg sediment dw
PNEC sediment (water zee): 0.307 mg/kg sediment dw

Bodem:
PNEC bodem: 0.2 mg/kg bodem dw

STP:
PNEC STP: 5 mg/L beoordeling van factor 100

Grenswaarden voor beroepsmatige blootstelling:

GESTIS International Limit Values (Aprile 2018):

	Grenswaarde-8h		Grenswaarde-op korte termijn	
	ppm	mg/m3	ppm	mg/m3
Australia	50	213	100	426
Austria	20	85	80	340
Belgium	50	216	100	432
Canada-Ontario	35	---	100	---
Canada-Québec	50	213	100	426
Denmark	25	105	25	105
Finland	20	86	100(1)	430(1
France	*23.3*	*100*	*46.6(1)*	*200(1)*
Germany(AGS)	20	86	40(1)	172(1)
Germany(DFG)	20	86	40(1)	172(1)
Hungary	---	50	---	50
Ireland	20	85	40(1)	170(1)
Israel	20	85	40(1)	170(1)
Japan	50	---	---	---
Japan-JSOH	20	85	---	---
Latvia	---	10	---	30(1)
New Zeland	50	213	100	426
China	---	50	---	100(1)
Poland	---	50	---	100
Romania	12	50	35(1)	150(1)
Singapore	50	213	100	426
South Korea	20	85	40	170
Spain	20	86	40	172
Sweden	10	43	20(1)	86(1)
Switzerland	20	85	40	170
USA-NIOSH	50	215	100(1)	425(1)
USA-OSHA	100	---	200	---
United Kingdom	100	430	250	1080

Opmerkingen:

Finland : (1) 15 minutes average value.
France : Italic type: Indicative statutory limit values (1) 15 minutes average value.
Germany(AGS): (1) 15 minutes average value.
Germany(DFG): (1) 15 minutes average value.
Ireland : (1) 15 minutes reference period.
Israel : (1) 15 minutes average value.
Latvia : (1) 15 minutes average value.

China : (1) 15 minutes average value.
Romania : (1) 15 minutes average value.
Sweden : (1) 15 minutes average value.
USA-NIOSH : (1) 15 minutes average value.

ACGIH (2017):
TLV-TWA : 20 ppm
TLV-STEL/C: 40 ppm
Notes : IBE, A4
Critical effects: irritation (ocular, dermal and upper respiratory tract).

2-fenylpropeen (CAS 98-83-9):

AFGELEIDE DOSES ZONDER EFFECT (DNEL)/AFGELEIDE DOSES MET MINIMAAL EFFECT (DMEL):

Werklieden:

Oraal: Niet relevant.

Systemische effecten op lange termijn:
Inademing: DNEL 246 mg/m3 beoordeling van factor 4
Dermaal: DNEL 2.8 mg/Kg bw/day beoordeling van factor 50

Lokale effecten op lange termijn:
Dermaal: DNEL 0.105 mg/cm2 beoordeling van factor 100

Lokale effecten op korte termijn:
Inademing: DNEL 492 mg/m3

Algehele bevolking:

Systemische effecten op lange termijn:

Inademing: DNEL 4.83 mg/m3 beoordeling van factor 100
Dermaal: DNEL 1.4 mg/Kg bw/day
Oraal: DNEL 0.1 mg/Kg bw/day beoordeling van factor 400

Lokale effecten op lange termijn:
Dermaal: DNEL 0.052 mg/cm2 beoordeling van factor 200

VOORSPELDE NUL EFFECT CONCENTRATION (PNEC):

Milieu:

Water:
PNEC water (water zoet): 0.008 mg/L beoordeling van factor 50
PNEC water (water zee): 0.001 mg/L beoordeling van factor 500
PNEC water (water intermitterende-release): 0.016 mg/L beoordeling van factor 100

Sediment:
PNEC sediment (water zoet): 0.583 mg/kg sediment dw
PNEC sediment (water zee): 0.0583 mg/kg sediment dw

Bodem:
PNEC bodem: 0.112 mg/kg bodem dw

STP:
PNEC STP: 66.15 mg/L beoordeling van factor 10

Grenswaarden voor beroepsmatige blootstelling:

GESTIS International Limit Values (Aprile 2018):

	Grenswaarde-8h		Grenswaarde-op korte termijn	
	ppm	mg/m3	ppm	mg/m3
Australia	50	242	100	483
Austria	50	246	100	492

Belgium	50	246	100	492
Canada-Ontario	10	---	---	---
Canada-Québec	50	242	100	483
Denmark	50	240	100	480
European Union	**50**	**246**	**100(1)**	**492(1)**
Finland	50	250	100(1)	490(1)
France	*25*	*123*	*100*	*492*
Germany(AGS)	50	250	100(1)	500(1)
Germany(DFG)	50	250	100	500
Hungary	---	246	---	492
Ireland	50	246	100(1)	492(1)
Italy	50	246	100(1)	492(1)
Latvia	50	246	100(1)	492(1)
New Zeland	50	242	100	483
Poland	---	240	---	480
Romania	50	246	100(1)	492(1)
Singapore	50	242	100	483
South Korea	50	240	100	485
Spain	50	246	100	492
Sweden	20	98	100(1)	492(1)
Switzerland	50	250	100	500
The Netherlands	---	20	---	---
Turchia	50	246	100(1)	492(1)
USA-NIOSH	50	240	100(1)	485(1)
USA-OSHA	---	---	100	480
United Kingdom	50	246	100	491

Opmerkingen:

European Union: Bold-type: Indicative Occupational Exposure Limit Values
and Limit Values for Occupational Exposure Binding Occupational
Exposure Limit Value (BOELV). (1) 15 minutes average value.
Finland : (1) 15 minutes average value.
France : Italic type: Indicative statutory limit values.
Germany (AGS) : (1) 15 minutes average value.
Germany (DFG) : STV 15 minutes average value.
Ireland : (1) 15 minutes reference period.
Italy : (1) 15 minutes average value.
Latvia : (1) 15 minutes average value.
Romania : (1) 15 minutes average value.
Sweden : (1) 15 minutes average value.
Turkey : (1) 15 minutes average value.
USA - NIOSH : (1) 15 minutes average value.

8.2. Maatregelen ter beheersing van blootstelling

Passende technische maatregelen:
Pas technische maatregelen toe om te voldoen aan de MAC-waarden.
Controleer of de ruimtes waarin de substantie opgeslagen / gehanteerd wordt,
op passende wijze geventileerd, koel en droog zijn.
Bij het werken in besloten ruimten (tanks, containers enz.), moet u ervoor zorgen
dat er voldoende inadembare lucht wordt toegevoerd en de aanbevolen uitrusting dragen.

Bescherming van de ogen / het gezicht:
beschermende bril of oogscherm tegen chemische middelen (EN 166).
Geen contactlenzen dragen.

Bescherming van de huid / van de handen:
Chemicaliënbestendige handschoenen dragen (die voldoen aan EN 374) in combinatie met
basistraining voor werknemers.
Handschoenenmateriaal: Neopreen, Nitrillen, Viton (R) of Polyvinylalcohol.
Handschoenen moeten weggegooid en vervangen worden bij tekenen van degradatie
of chemische doorbraak.
De effectieve duur van de geleverde bescherming hangt af van de gebruikscondities,
gelieve de leverancier te consulteren.

Bescherming van de huid / lichaamsdelen:
Antistatische laarzen. Veiligheidsschoenen of -laarzen. Draag vuur / vlam bestendige /
vertragende kleding.
Draag geschikte veiligheidskleding voor chemische substanties.

Bescherming van de ademhalingswegen:
Als blootstellingslimieten waarschijnlijk overtreden gaan worden / Bij ontoereikende
ventilatie een geschikt ademhalingsapparaat dragen: Ademhalingsapparaat met filter
Type A (Filter voor organische gassen en dampen conform EN 14387) / Type A(2) / P3 in
combinatie met Deeltjesfilter conform EN 143, bij blootstelling aan stofdeeltjes / nevels.

Thermische gevaren:
Geen, onder gewone opslagomstandigheden.

Beheersing van milieublootstelling:
Laat product niet het grondwater verontreinigen.
Zie punt 6.2 en 13.1.

RUBRIEK 9: Fysische en chemische eigenschappen

9.1. Informatie over fysische en chemische basiseigenschappen

a1) Uiterlijk: Vloeistof

a2) Kleur: geel-bruine

b) Geur: Karakteristiek van styreen

c) Geurdrempelwaarde: 0,15 - 0,25 ppm ref. Styreen

d) pH: NIET TOEPASBAAR

e1) Smeltpunt: NIET TOEPASBAAR

e2) Vriespunt: - 31 °C ref. Styreen

f1) Kookpunt: 145.0 °C ref. Styreen

f2) Beginkookpunt: NIET BESCHIKBAAR

f3) Eindkookpunt: NIET BESCHIKBAAR

g) Vlampunt: 31 °C gesloten houder conform ISO 3680

h) Verdampingssnelheid: NIET BESCHIKBAAR

i) Ontvlambaarheid (vast, gas): NIET BESCHIKBAAR

j1) Bovenste ontvlambaarheidsgrens: 6,1 % Vol. ref. Styreen

j2) Onderste ontvlambaarheidsgrens: 1,1 % Vol. ref. Styreen

j3) Bovenste explosiegrens: 6,1 % Vol. ref. Styreen

j4) Onderste explosiegrens: 1,1 % Vol. ref. Styreen

k) Dampspanning: 6,7 hPa ref. Styreen (20°C)

l) Dampdichtheid: 3,6 ref. Styreen

m) Relatieve dichtheid: 1,03 - 1,16 g/cm3 25°C

n) Oplosbaarheid in water: 0.30 g/l onoplosbaar

o) Verdelingscoëfficiënt n-octanol/water: NIET BESCHIKBAAR

p) Zelfontbrandingstemperatuur: 490.0 °C ref. Styreen

q) Ontledingstemperatuur: NIET BESCHIKBAAR

r) Viscositeit: 100-200 mPa.s (25°C) - Brookfield

s) Ontploffingseigenschappen: NIET BESCHIKBAAR

t) Oxiderende eigenschappen: NIET BESCHIKBAAR

9.2. Overige informatie

Geen

RUBRIEK 10: Stabiliteit en reactiviteit

10.1. Reactiviteit

Stabiel bij normale condities

10.2. Chemische stabiliteit

Polymeriseert bij verhitting.

10.3. Mogelijke gevaarlijke reacties

Gevaarlijke reacties: Indien de resine sterk verwarmd of aan direct zonlicht

wordt blootgesteld, polymeriseert het met een spontane reactie, die ook sterk exotherm kan zijn.

10.4. Te vermijden omstandigheden

Hitte. Directe blootstelling aan zonlicht.

10.5. Chemisch op elkaar inwerkende materialen

Sterke oxidatiemiddelen, metaaloxiden.

10.6. Gevaarlijke ontledingsproducten

Koolstofoxiden, Aromatische koolwaterstoffen

RUBRIEK 11: Toxicologische informatie

(*)11.1. Informatie over toxicologische effecten

Mengsel:

Acute toxiciteit:
Oraal: ATE mix (24h): > 5000 mg/Kg. Niet Ingedeeld.
Inademing: ATE mix (4h): > 20 mg/l air, (vapours). Niet Ingedeeld.
Dermaal: ATE mix: > 4000 mg/kg. Niet Ingedeeld.

Aspiratiegevaar:
Methode: ASTM D 445.
Resultaten: kinematische viscositeit > 20.5 mm2/s at 40°C
Conclusies: Niet Ingedeeld.

Styreen (CAS 100-42-5):

Acute toxiciteit:
Oraal: LD50(24h): 5000 mg/Kg, Rat.
Inademing: LC50(4h): 11.8 mg/l air, (vapours), Ingedeeld Categorie 4 (H332)
Dermaal: LD50: > 2000 mg/kg, Rat.

Huidcorrosie/-irritatie:
Resultaten: Irriterend. Ingedeeld Categorie 2 (H315)

Ernstig oogletsel/oogirritatie:
Resultaten: Irriterend. Ingedeeld Categorie 2 (H319)

Sensibilisatie van de luchtwegen of van de huid:

Sensibilisatie van de luchtwegen: Niet Ingedeeld.

Sensibilisatie van de huid: Niet Ingedeeld.

Mutageniteit in geslachtscellen: Niet Ingedeeld.

Kankerverwekkendheid: Niet Ingedeeld.

Voortplantingstoxiciteit:
Resultaten: Ingedeeld Categorie 2 (H361d)

Specifieke doelorgaantoxiciteit bij eenmalige blootstelling (STOT):
Blootstellingsroute: Inademing.
Target-organen: Irritatie van de luchtwegen.
Resultaten: Ingedeeld Categorie 3 (H335).

Specifieke doelorgaantoxiciteit bij herhaalde blootstelling (STOT):
Blootstellingsroute: Inademing.
Target-organen: Gehoororganen.
Resultaten: Ingedeeld Categorie 1 (H372)

Aspiratiegevaar:

Resultaten: Ingedeeld Categorie 1 (H304)

2-fenylpropeen (CAS 98-83-9):

Acute toxiciteit:
Oraal: LD50(24): 4900 mg/Kg, Rat.
Inademing: LC50(6h): 22.85 mg/l air, (vapours), Rat.
Dermaal: LD50: 14560 mg/kg, Konijn.

Huidcorrosie/-irritatie: Niet Ingedeeld.

Ernstig oogletsel/oogirritatie:
Resultaten: Irriterend. Ingedeeld Categorie 2 (H319)

Sensibilisatie van de luchtwegen of van de huid:

Sensibilisatie van de luchtwegen: Niet Ingedeeld.

Sensibilisatie van de huid:
Resultaten: Sensibiliserend, Ingedeeld Categorie 1B (H317).

Mutageniteit in geslachtscellen: Niet Ingedeeld.

Kankerverwekkendheid: Niet Ingedeeld.

Voortplantingstoxiciteit:
Resultaten: Ingedeeld Categorie 2 (H361)

Specifieke doelorgaantoxiciteit bij eenmalige blootstelling (STOT):
Blootstellingsroute: Inademing.
Target-organen: Irritatie van de luchtwegen.
Resultaten: Ingedeeld Categorie 3 (H335).

Specifieke doelorgaantoxiciteit bij herhaalde blootstelling (STOT):
Niet Ingedeeld.

Aspiratiegevaar:
Resultaten: Ingedeeld Categorie 1 (H304).

RUBRIEK 12: Ecologische informatie

(*)12.1. Toxiciteit

Er zijn geen experimentele gegevens over het mengsel.

Styreen (CAS 100-42-5):

Toxiciteit voor het aquatische milieu:

Toxiciteit op korte termijn in het aquatisch milieu:

Vissen:
Resultaten: LC50 (96h): 4.02 mg/L (Pimephales promelas)

In het water levende ongewervelden:
Resultaten: EC50 (48h): 4.7 mg/L (Daphnia magna)

Algen en in het water levende cyanobacteriën:
Resultaten: EC50 (72h): 4.9 mg/L (Pseudokirchneriella subcapitata)

In het water levende micro-organismen:
Resultaten: EC50 (30 min): ca. 500 mg/L (activated sludge of domestic sewage)
Resultaten: NOEC (16h): 72 mg/L (Pseudomonas putida)

Toxiciteit op lange termijn in het aquatisch milieu:

Vissen: Gegevens niet beschikbaar.

In het water levende ongewervelden:
Resultaten:
NOEC (21d): 1.01 mg/L (Daphnia magna)
EC50 (21d): 1.88 mg/L (Daphnia magna)

Toxiciteit voor het terrestrisch milieu:

Toxiciteit op korte termijn aan het terrestrisch milieu:

Macro-organismen, behalve voor terrestrische geleedpotigen:
Resultaten:
LC50 (14d): 500 - 1000 mg/kg bodem dw (Eisenia fetida)

Conclusies: Ingedeeld Categorie 3 (H412)

2-fenylpropeen (CAS 98-83-9**):**

Toxiciteit voor het aquatische milieu:

Toxiciteit op korte termijn in het aquatisch milieu:

Vissen:
Resultaten: LC50 (96h): 2.97 mg/L (Danio rerio)

In het water levende ongewervelden:
Resultaten: EC50 (48h): 1.645 mg/L (Daphnia magna)

Algen en in het water levende cyanobacteriën:
Resultaten: EC50 (72h): 11.441 mg/L (Desmodesmus subspicatus)

In het water levende micro-organismen:
Resultaten: EC50 (3h): > 2000 mg/L (activated sludge of domestic sewage)

Toxiciteit op lange termijn in het aquatisch milieu:

Vissen: Gegevens niet beschikbaar.

In het water levende ongewervelden:
Resultaten:
NOEC (21d): 0.401 mg/L (Daphnia magna)
EC50 (21d): 1.11 mg/L (Daphnia magna)

Toxiciteit voor het terrestrisch milieu: Gegevens niet beschikbaar.

Conclusies: Ingedeeld Categorie 2 (H411)

(*)12.2. Persistentie en afbreekbaarheid

Er zijn geen experimentele gegevens over het mengsel.

Styreen (CAS 100-42-5**):**

Afbreekbaarheid:

Abiotische afbraak:

Hydrolyse:
Krachtens de verordening REACH 1907/2006/EG, Het onderzoek behoeft niet te worden uitgevoerd indien de stof gemakkelijk biologisch afbreekbaar is.

Fotolyse in de lucht:

Methode:
Publication: Kinetics and Mechanisms of the Gas-Phase Reactions of the Hydroxyl Radical with Organic Compounds under Atmospheric Conditions.
Resultaten:
Halfwaardetijd (DT50): 7.4 h (for reactions with hydroxyl radicals)

Methode:
Publication: Kinetics of vapor-phase hydrocarbon-ozone reactions.

Resultaten:
Halfwaardetijd (DT50): 9.2 h (for reactions with ozone)

Fotolyse in water:
Methode:
Publication: Ein Beitrag zur Photostabilität organischer Umweltchemikalien in Gegenwart von Wasserstoffperoxid in aquatischen Systemen.
Resultaten:
Halfwaardetijd (DT50): 237 d

Biotische afbraak:

Biologische afbreekbaarheid in het water:
Methode:
According to ISO DIS 9408 (Ultimate Aerobic Biodegradability - Method by Determining the Oxygen Demand in a Closed Respirometer).
Activated sludge, domestic, non-adapted, aerobic.
Resultaten:
% Afbraak van de teststof:
68 na 10 d (of ThOD)
70.9 na 28 d (of ThOD)
100 na 28 d (COD)

Conclusies: Gemakkelijk biologisch afbreekbaar.

2-fenylpropeen (CAS 98-83-9)**:**

Afbreekbaarheid:

Abiotische afbraak:

Hydrolyse:
Methode:
According to OECD Guideline 111 (Hydrolysis as a Function of pH).
Resultaten:
Niet hydrolyseerbaar.

Fotolyse in de lucht:
Methode:
Publication: Kinetics and mechanisms of reactions between aromatic olefins and hydroxyl radicals.
Resultaten:
Halfwaardetijd (DT50): 7.27 h

Biotische afbraak:

Biologische afbreekbaarheid in het water:

Methode:
According to OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test).
According to EU Method C.4-E (Determination of the 'Ready' Biodegradability - Closed Bottle Test).
Mixture of stp effluent and soil, aerobic.
Resultaten:
% Afbraak van de teststof:
56 na 21 d (O2 consumption)

Conclusies: Niet gemakkelijk biologisch afbreekbaar.

Methode:
According to OECD Guideline 302 C (Inherent Biodegradability: Modified MITI Test (II)).
Activated sludge, domestic (adaptation not specified), aerobic.
Resultaten:
% Afbraak van de teststof:
56 na 28 d (O2 consumption)

Conclusies: Inherent biologisch afbreekbaar.

(*)12.3. Bioaccumulatie

Potentieel voor bioaccumulatie:

Er zijn geen experimentele gegevens over het mengsel.

Styreen (CAS 100-42-5):

Aquatisch milieu:
Methode:
Calculated from log Kow.
Resultaten:
BCF: 74 L/Kg (or dimensionless)

2-fenylpropeen (CAS 98-83-9):

Aquatisch milieu:
Methode:
According to OECD Guideline 305 C (Bioaccumulation: Test for the Degree of Bioconcentration in Fish).
Cyprinus carpio, water zoet, flow-through.
Resultaten:
BCF: 15 - 140 L/Kg (or dimensionless)

(*)12.4. Mobiliteit in de bodem

Er zijn geen experimentele gegevens over het mengsel.

Styreen (CAS 100-42-5):

Adsorptie/desorptie:
Methode:
Value estimated by calculation.
Resultaten:
Verdelingscoëfficiënt bodem/water:
Koc: 352 (20°C)
Log Koc: 2.55 (20°C)

Vluchtigheid:
Methode:
Value estimated by calculation.
Resultaten:
Henry's Law constant H: 232 (Pa m3/mol or dimensionless) (20°C)

Verspreiden over de verschillende compartimenten van het milieu:
Methode:
Calculation according to Mackay, Level I, version 3.00.
Media: lucht - sediment(s) - bodem - Water.
Resultaten:
Gemiddelde percentage van de distributie:
Lucht (%): 98.6
Water (%): 1.21
Bodem (%): 0.09
Sediment (%): 0.09

2-fenylpropeen (CAS 98-83-9):

Adsorptie/desorptie:
Methode:
According to OECD Guideline 121 (Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC))
Resultaten:
Verdelingscoëfficiënt bodem/water:
Koc: 692 (20°C)
Log Koc: 2.84 (20°C)

Vluchtigheid:
Methode:
Value estimated by calculation.
Resultaten:
Henry's Law constant H: 439 (Pa m3/mol or dimensionless) (25°C)

Verspreiden over de verschillende compartimenten van het milieu:
Methode:
Calculation according to Mackay, Level I, version 3.00.
Media: lucht - sediment(s) - bodem - Water.
Resultaten:
Gemiddelde percentage van de distributie:
Lucht (%): 98.4
Water (%): 1.1
Bodem (%): 0.26
Sediment (%): 0.26

(*)12.5. Resultaten van PBT- en zPzB-beoordeling

Resultaten van PBT- en zPzB-beoordeling:

Er zijn geen experimentele gegevens over het mengsel.

Styreen (CAS 100-42-5):
Op basis van de beschikbare informatie wordt de stof niet beschouwd als een PBT/zPzB.

2-fenylpropeen (CAS 98-83-9):
Op basis van de beschikbare informatie wordt de stof niet beschouwd als een PBT/zPzB.

12.6. Andere schadelijke effecten

Geen bekend

RUBRIEK 13: Instructies voor verwijdering

13.1. Afvalverwerkingsmethoden

Recycle het afval zo mogelijk of breng het naar een geautoriseerde installatie voor afvalverbranding. Voor de manipulatie of voor de te nemen maatregelen in geval van incidenteel verlies van het afval gelden de aanwijzingen zoals aangegeven bij de punten 6 en 7. Voor de verpakking is het aan te raden deze te recyclen in plaats van deze als afval te verwerken. Handel volgens de geldende plaatselijke en landelijke normen.

RUBRIEK 14: Informatie met betrekking tot het vervoer

14.1. VN-nummer

1866

14.2. Juiste ladingnaam overeenkomstig de modelreglementen van de VN

HARS, OPLOSSING, brandbaar

14.3. Transportgevarenklasse(n)

3

14.4. Verpakkingsgroep

III

14.5. Milieugevaren

NIET TOEPASBAAR

14.6. Bijzondere voorzorgen voor de gebruiker

NIET TOEPASBAAR

ADR/RID

- Restrictiecode in tunnel: D/E
- Gelimiteerd aantal per transporteenheid: 3
- LQ-code gelimiteerd aantal per verpakkingseenheid: LQ7
- E-code vrijgestelde aantallen: E1

IMDG

- LQ-code gelimiteerd aantal per verpakkingseenheid: 5 L
- E-code vrijgestelde aantallen: E1
- Ems: F-E, S-E

ICAO/IATA

- Verpakkingsinstructies / maximum netto aantal per verpakking voor combi- en cargovliegtuig: 355 / 60 L - 366 / 220 L
- Verpakkingsinstructies / maximum netto aantal per verpakking bij toepassing van gelimiteerde aantallen: Y344 / 10 L
- EQ-code betreffende de toepassing van vrije aantallen: E1

14.7. Vervoer in bulk overeenkomstig bijlage II bij Marpol en de IBC-code

NIET BESCHIKBAAR

RUBRIEK 15: Regelgeving

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

VERORDENING EUROPEES 1907/2006/EG (Reach);
VERORDENING EUROPEES 1272/2008/EG (CLP);
VERORDENING EUROPEES 830/2015/EU;
Richtlijn 642/1988/EEG;
Richtlijn 24/1998/EG;
Richtlijn 92/1999/EG;
Richtlijn 18/2012/EU;

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

Germany: WGK: 2

(*)15.2. Chemischeveiligheidsbeoordeling

Chemische veiligheidsbeoordeling (CSA): Ja.

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

(*)RUBRIEK 16: Overige informatie

Het onderhavige Veiligheidsgegevensblad is opgesteld conform Verordening 830/2015/EU.

(*) op de linkerkant geven de wijzigingen vergeleken bij de laatste versie aan.

Voornaamste bibliografische bronnen:
GESTIS International Limit Values.

Acroniemen:

ACGIH:	American Conference of Governmental Industrial Hygienist.
ADN:	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
ASTM:	American Society of Testing and Materials.
B:	Bioaccumulabile.
BCF:	BioConcentration Factor.
BSAF:	Biological Soil Accumulation Factor.
CSA:	Chemical Safety Assessment.
CSR:	Chemical Safety Report.

DIN:	Deutsches Institut für Normung.
DMEL:	Derived Minimal Effect Level.
DNEL:	Derived No Effect Level.
Ec:	Effective concentration.
EC50:	Effective Concentration 50 (that produces an effect (other than death) for 50% of organisms test).
ECx:	Effective Concentration 50 (that produces an effect (other than death) for X% of organisms test).
EPA:	Environmental Protection Agency.
IATA:	International Air Transport Association.
IBC:	International code for the construction and equipment of ships carrying dangerous Bulk Chemicals.
ICAO:	International Civil Air-transport Organisation.
IMGD:	International Maritime Dangerous Goods code.
ISO:	International Standards Organisation.
KoC:	organic carbon/water partition coefficient (adsorpion coefficient).
KoW:	n-octanol/water partition coefficient.
LC50:	Lethal Concentration for 50% of animal test.
LCx:	Lethal Concentration for X% of animal test.
LD50:	Lethal Dose for 50% test animal.
LDx:	Lethal Dose for X% test animal.
LLNA:	Local Lymph Node Assay.
LOAEC:	Lowest Observed Adverse Effect Concentration.
LOAEL:	Lowest Observed Adverse Effect Level.
LOEC:	Lowest Observed Effect Concentration.
LOEL:	Lowest Observed Effect Level.
MARPOL:	International Convention for the Prevention of Pollution from Ships.
NOAEC:	No Observed Adverse Effects Concentration.
NOAEL:	No Observed Adverse Effect Level.
NOEC:	No Observed Effect Concentration.
NOEL:	No Observed Effect Level.
OECD-OCSE:	Organisation for Economic Co-operation and Development.
P:	Persistent.
PBT:	Persistent Bioaccumulable and Toxic.
PNEC:	Predicted No Effect Concentration.
(Q)SAR:	Quantitative Structure-Activity Relationship.
RID:	Regulations concerning the International carriage of Dangerous goods by rail.
SDS:	Safety Data Sheet.
STP:	Sewage Treatment Plant.
TLV:	Threshold Limit Value.
TLV-C:	Threshold Limit Value - Ceiling.
TLV-STEL:	Threshold Limit Value - Short Term Exposure Limit.
TLV-TWA:	Threshold Limit Value - Time Weighted Average.
vPvB:	very Persistent and very Bio-accumulative.

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

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