1. SZAKASZ: Az anyag/keverék és a vállalat/vállalkozás azonosítása

1.1. Termékazonosító

Kereskedelmi név: **POLYNT 2772 WF**

1.2. Az anyag vagy keverék megfelelő azonosított felhasználása, illetve ellenjavallt felhasználása

Poliészter gyanta erősített és/vagy töltött műanyagokhoz.

(*)1.3. A biztonsági adatlap szállítójának adatai

Szállító:

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
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Laporte Road
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United Kingdom
Phone: +44 1469 552570
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sdsregulatory@polynt.com
www.polynt.com

Jegyzetek:
A termék szállítója a fentiek közül, mely a címkén és/vagy a az értékesítési dokumentációban akként azonosított.

(*)1.4. Sürgősségi telefonszám

Carechem 24 International (h24):

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

2. SZAKASZ: A veszély meghatározása

(*)2.1. Az anyag vagy keverék osztályozása

Reg CE 1272/2008

Osztályozás az 1272/2008/EK rendelet szerint:

Veszélyességi osztály és Figyelmeztető mondatok kódjai	**Veszélyességi osztályok és kategóriák kódjai**
Tűzveszélyes folyadékok H226: Tűzveszélyes folyadék és gőz.	Tűzv. foly. 3

Bőrmarás/bőrirritáció H315: Bőrirritáló hatású.	Bőrirrit. 2
Súlyos szemkárosodás/szemirritáció H319: Súlyos szemirritációt okoz.	Szemirrit. 2
Reprodukciós toxicitás H361d: Feltehetően károsítja a születendő gyermeket.	Repr. 2
Célszervi toxicitás - egyszeri expozíció H335: Légúti irritációt okozhat.	STOT egy. 3
Célszervi toxicitás - ismétlődő expozíció H372: Ismétlődő vagy hosszabb expozíció esetén károsítja a szerveket. célszervek: Hallószervek. Expozíciós útvonal: Belélegzés	STOT ism. 1
A vízi környezetre veszélyes H412: Ártalmas a vízi élővilágra, hosszan tartó károsodást okoz.	Vízi, krónikus 3

(*)2.2. Címkézési elemek

Címkézés az 1272/2088/EK rendelet szerint:

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

Piktogram:

VESZÉLY

Figyelmeztető mondatok:

H226: Tűzveszélyes folyadék és gőz.

H315: Bőrirritáló hatású.

H319: Súlyos szemirritációt okoz.

H335: Légúti irritációt okozhat.

H361d: Feltehetően károsítja a születendő gyermeket.

H412: Ártalmas a vízi élővilágra, hosszan tartó károsodást okoz.

H372: Ismétlődő vagy hosszabb expozíció esetén károsítja a szerveket. célszervek: Hallószervek. Expozíciós útvonal: Belélegzés

Óvintézkedésre vonatkozó mondatok:

P201: Használat előtt ismerje meg az anyagra vonatkozó különleges utasításokat.

P312: Rosszullét esetén forduljon TOXIKOLÓGIAI KÖZPONTHOZ/orvoshoz.

P403+P235: Jól szellőző helyen tárolandó. Hűvös helyen tartandó.

P501: A tartalom/edény elhelyezése hulladékként a nemzeti/nemzetközi rendeleteknek megfelelően.

P233: Az edény szorosan lezárva tartandó.

P303+P361+P353: HA BŐRRE (vagy hajra) KERÜL: Az összes szennyezett ruhadarabot azonnal le kell vetni. A bőrt le kell öblíteni vízzel [vagy zuhanyozás].

P260: Gőzök belélegzése tilos.

P305+P351+P338: SZEMBE KERÜLÉS ESETÉN: Több percig tartó óvatos öblítés vízzel.

Adott esetben a kontaktlencsék eltávolítása, ha könnyen megoldható. Az öblítés folytatása.

P210: Hőtől, forró felületektől, szikrától, nyílt lángtól és más gyújtóforrástól távol tartandó. Tilos a dohányzás.

P280: Védőkesztyű/védőruha/szemvédő/arcvédő használata kötelező. (lásd SDS).

P243: Az elektrosztatikus kisülés megakadályozására óvintézkedéseket kell tenni.

2.3. Egyéb veszélyek

A keverék sztirolt tartalmaz:

a munkaterületen belül mért gőzkoncentráció ne haladja meg a dolgozói expozíció határértékeit (lásd 8.1).

Levegővel elegyedve a gőzök robbanásveszélyes keveréket képezhetnek.

PBT/vPvB lásd 12.5 pont.

3. SZAKASZ: Összetétel vagy az összetevőkre vonatkozó adatok

(*)3.2. Keverékek

Reg CE 1272/2008

A KEVERÉKBEN LÉVŐ ANYAGOK:

Nemzetközi vegyianyag-azonosítás:

- Unsaturated polyester

Index-szám: NEM ÁLL RENDELKEZÉSR

Telítetlen poliészter

Kémiai képlete: NEM ÁLL RENDELKEZÉSR

koncentráció tartományokat : > 50%

REACH regisztrációs szám: NEM ALKALMAZHATÓ

CAS-szám: NEM ÁLL RENDELKEZÉSR

EK-szám: NEM ÁLL RENDELKEZÉSR

A polimer nincs besorolva az 1272/2008/EK rendelet szerint.

Veszélyességi osztály és Figyelmeztető mondatok kódjai	Veszélyességi osztályok és kategóriák kódjai

A KEVERÉKBEN LÉVŐ ANYAGOK:

Nemzetközi vegyianyag-azonosítás:

- Styrene

Index-szám: 601-026-00-0

Sztirol

Kémiai képlete: C8H8

koncentráció tartományokat : 30% < C < 40%

REACH regisztrációs szám: 01-2119457861-32-XXXX

CAS-szám: 100-42-5

EK-szám: 202-851-5

A gyártó önbesorolása az 1272/2008/EK rendelet szerint:

Veszélyességi osztály és Figyelmeztető mondatok kódjai	Veszélyességi osztályok és kategóriák kódjai
Tűzveszélyes folyadékok H226: Tűzveszélyes folyadék és gőz.	Tűzv. foly. 3
Akut toxicitás	Akut tox. 4

H332: Belélegezve ártalmas.

Bőrmarás/bőrirritáció	Bőrirrit. 2
H315: Bőrirritáló hatású.	
Súlyos szemkárosodás/szemirritáció	Szemirrit. 2
H319: Súlyos szemirritációt okoz.	
Reprodukciós toxicitás	Repr. 2
H361d: Feltehetően károsítja a születendő gyermeket.	
Célszervi toxicitás - egyszeri expozíció	STOT egy. 3
H335: Légúti irritációt okozhat.	
Célszervi toxicitás - ismétlődő expozíció	STOT ism. 1
H372: Ismétlődő vagy hosszabb expozíció esetén károsítja a szerveket. célszervek: Hallószervek. Expozíciós útvonal: Belélegzés	
Aspirációs veszély	Asp. vesz. 1
H304: Lenyelve és a légutakba kerülve halálos lehet.	
A vízi környezetre veszélyes	Vízi, krónikus 3
H412: Ártalmas a vízi élővilágra, hosszan tartó károsodást okoz.	

4. SZAKASZ: Elsősegélynyújtás

4.1. Az elsősegély-nyújtási intézkedések ismertetése

Belégzésre:
A sérültet vigye friss levegőre.
A légutak további irritációja vagy a légzés nehézzé válása esetén forduljon orvoshoz.

a Bőrrel:
Bőrre kerülés esetén bő szappanos vízzel azonnal mossa le.
Irritáció kialakulása vagy fennállása esetén forduljon orvoshoz.

Szemmel való érintkezésre:
Legalább 15 percen át mossa bő vízzel.
A szem és a szemhéj teljes felületének lemosását a szemhéjak megemelésével biztosítsa.
Forduljon szemész szakorvoshoz.

a Lenyelésre:
Tilos hánytatni.
Ha hányás természetes úton történik, a fulladás kockázatának elkerülése érdekében a sérültet döntse előre.
Forduljon orvoshoz.

4.2. A legfontosabb – akut és késleltetett – tünetek és hatások

Sztirol (CAS 100-42-5)

A következő kellemetlen tünetek jelentkezhetnek:

Belégzés: Légúti irritáció, köhögés.

Lenyelés: Émelygés vagy hányás.

Szembe kerülés: Fájdalom vagy irritáció, könnyezés, bőrpír.

Bőrre kerülés: Irritáció, bőrpír.

4.3. A szükséges azonnali orvosi ellátás és különleges ellátás jelzése

Lasd a 4.1 szelvenyt.

5. SZAKASZ: Tűzvédelmi intézkedések

5.1. Oltóanyag

Oltokeszülek:
Hab, Szén-dioxid (CO2), por, vízpermet.

Oltasra nem alkalmas keszülek:
Ne hasznaljon vizfecskendőt, mivel ez szetmossa a szert es tüzet propagal.

5.2. Az anyagból vagy a keverékből származó különleges veszélyek

Tüz eseten mergező gazt bocsathat ki.

5.3. Tűzoltóknak szóló javaslat

Tűz esetén speciális védőberendezések:
egyéni védőfelszerelés és zárt rendszerű légzőkészülék használata kötelező.

További javaslatok:
a tűznek kitett zárt edények lehűtéséhez használjon vízpermetet.

6. SZAKASZ: Intézkedések véletlenszerű expozíciónál

6.1. Személyi óvintézkedések, egyéni védőeszközök és vészhelyzeti eljárások

Az erintett területről a mentesben nem közrejatszo szemelyeket el kell tavoltani.
Vigyazzon,hogy ne erintkezzen a szerrel es a vedelmi előirasoknak megfelelően banjon a tarolokkal.
A 8-as szelvenyben leirt szemelyvedelmi előirasoknak megfelelően kezelje.
Nagy mennyiseg kiüremlese eseten vegye igenybe a lelegeztető keszüleket.
Távolítson el minden tuzforrást.
Távolítson el minden összeférhetetlen anyagot, az BAL 10.5 szakaszának elôírásai szerint.

6.2. Környezetvédelmi óvintézkedések

Probalja meggatolni a kiszivargast.
Probalja megakadalyazozni, hogy a szer ne jusson a szennyvizcsatornaba, aknaba illetve ne szivarogjon a felszini illetve föld alatti artezi vizekbe. Abban az esetben ha a kiömlött vegyület beleömlik egy folyami rendszerbe, szennyvizcsatornaba vagy ha beszivarog a talajfelszinbe illetve a környezetet beszennyezi, erről az illetekes hatosagokat azonnal ertesiteni kell.

6.3. A területi elhatárolás és a szennyezésmentesítés módszerei és anyagai

A vegyület összegyüjtesere olyan berendezest hasznaljon mely nem okoz tüzveszelyt.
Probalja a kiömlött szert egy szippantokeszülekkel felszivatni es/vagy a fennmarado folyadekra semlegesitő anyagot szorni (homokot, földet vagy aszorbealo közeget...). Az összegyüjtött anyagot helyezze egy erre a celra szolgalo tartalyba (szemeteskuka megkülönböztetett folyadek es szilard anyag tarolasara) mely a 13-as szelvenyben leirtak szerint lesz feldolgozva. A helyisegbe csak azutan mehetnek be miutan a szert eltakaritottak, a helyiseget jol kiszellőztettek es a taposofelületről a szert jol elmostak.
A felmosovizet ne endedje a szennyvicsatornaba vagy ne öntse ki a földre.

6.4. Hivatkozás más szakaszokra

Lasd a 8. es a 13. szelvenyt.

7. SZAKASZ: Kezelés és tárolás

7.1. A biztonságos kezelésre irányuló óvintézkedések

Biztonságos használatára vonatkozó ajánlások:

A munkakörnyezetben gondoskodjon megfelelő légcseréről és/vagy elszívásról.
Kerülje az anyag szembe vagy bőrre jutását.
Kerülje az elektrosztatikus feltöltődést.
Kerülje a gőzök belélegzését.

Általános ajánlások higiéniai szakmai:
A termék használata közben tilos enni, inni vagy dohányozni.
A hasznalatot követően a(z) arcot, a kezeket és a szájat - t alaposan meg kell mosni.
Szennyezett munkaruhát tilos kivinni a munkahely területéről.
A szennyezett ruhát újbóli használat előtt ki kell mosni.

7.2. A biztonságos tárolás feltételei, az esetleges összeférhetetlenséggel együtt

Tárolási és raktározási követelmények:
Száraz, hűvös és jól szellőző helyen tartandó.
A változatlan minőség fenntartásához a terméket napfénytől és hőtől védve kell tárolni.

További információk:
A tárolóedényt mindig jól lezárva kell tartani.

Tárolási stabilitás:
Normál körülmények között stabil.
Erős oxidálószerekkel nem kompatibilis.

7.3. Meghatározott végfelhasználás (végfelhasználások)

Nincs azonositva.

8. SZAKASZ: Az expozíció ellenőrzése/egyéni védelem

(*)8.1. Ellenőrzési paraméterek

Nincs kísérleti adat a keveréket.

Sztirol (CAS 100-42-5):

SZÁRMAZTATOTT HATÁSMENTES SZINT (DNEL)/MINIMÁLIS HATÁSMENTES SZINT (DMEL):

Dolgozók:

Szájon át: Nem jellemző.

Hosszú távú szisztemikus hatások:
Belélegzés: DNEL 85 mg/m3 értékelési tényező 1
Bőrön át: DNEL 406 mg/Kg bw/day értékelési tényező 1

Rövid távú szisztemikus hatások:
Belélegzés: DNEL 289 mg/m3 értékelési tényező 3

Rövid távú helyi hatások:
Belélegzés: DNEL 306 mg/m3 értékelési tényező 3

Általános populáció:

Hosszú távú szisztemikus hatások:
Belélegzés: DNEL 10.2 mg/m3 értékelési tényező 3
Bőrön át: DNEL 343 mg/Kg bw/day értékelési tényező 1
Szájon át: DNEL 2.1 mg/Kg bw/day értékelési tényező 1

Rövid távú szisztemikus hatások:
Belélegzés: DNEL 174.25 mg/m3 értékelési tényező 5

Rövid távú helyi hatások:
Belélegzés: DNEL 182.75 mg/m3 értékelési tényező 5

BECSÜLT HATÁSMENTES KONCENTRÁCIÓ (PNEC):

Környezeti:

Viz:
PNEC viz (Édesvíz): 0.028 mg/L értékelési tényező 10
PNEC viz (Tengervíz): 0.014 mg/L értékelési tényező 20
PNEC viz (szakaszos kifolyás): 0.04 mg/L értékelési tényező 100

Üledék:
PNEC Üledék (Édesvíz)**:** 0.614 mg/kg Üledék dw
PNEC Üledék (Tengervíz): 0.307 mg/kg Üledék dw

Talaj:
PNEC talaj: 0.2 mg/kg talaj dw

STP:
PNEC STP: 5 mg/L értékelési tényező 100

Foglalkozási expozíciós határértékek:

GESTIS International Limit Values (Aprile 2018):

	Határérték-8h		Határérték rövid távú	
	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

Jegyzetek:

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).

8.2. Az expozíció ellenőrzése

Megfelelő műszaki ellenőrzés:
Tartsa be a szükséges műszaki előírásokat, hogy ne lépje túl a szakmailag előírt expozíciós határértékeket.
Ügyeljen rá, hogy az anyag tárolására / kezelésére szolgáló helyiségek megfelelően szellőzöttek, friss levegőjűek és szárazak legyenek.
Ha zárt területen dolgozik (tartály, konténer, stb.), akkor ellenőrizze, hogy legyen elegendő levegő a légzéshez és viselje az ajánlott felszereléseket.

Szem / arcvédő:
vegyi anyagok elleni biztonsági vagy védőszemüveg (EN 166).
Ne viseljen kontaktlencsét.

A bőr védelme / kezek:
Viseljen vegyi anyagoknak ellenálló kesztyűt (az EN 374 előírásai szerint) és a munkatársaknak biztosítson 'alapképzést'.
A kesztyű anyaga: Neoprén, nitrit, viton (R) vagy polivinil-alkohol.
A kesztyűket kopás vagy vegyi anyag áttörés esetén távolítsa el.
A biztosított védelem tényleges időtartama a használati feltételek függvénye, erről konzultáljon a szállítóval.

A bőr védelme / szerv:
Antisztatikus cipők. Munkavédelmi cipő és csizma. Viseljen tűz / láng ellen védő / késleltető ruházatot.
Kémiai vegyületek esetén használjon megfelelő védőkesztyűt.

Légutak védelme:
Ha fennáll a lehetősége, hogy az expozíciós határokat túllépi / elégtelen szellőzés esetén, viseljen megfelelő légzőkészüléket: A típusú szűrővel ellátott légzőkészüléket (gáz és szerves gőzök szűrő az EN 14387 szerint) / A(2) / P3 típus kombinált részecskeszűrővel, amely megfelel az EN 143 szabványnak, por/köd expozíció esetén.

Hőveszély:
Normál tárolási körülmények esetén semmilyen veszély nem áll fenn.

Környezeti expozíció-ellenőrzések:
Az anyaggal ne szennyezze a talajvíz rendszert.
Lasd a 6.2 es a 13.1 szelvenyt.

9. SZAKASZ: Fizikai és kémiai tulajdonságok

9.1. Az alapvető fizikai és kémiai tulajdonságokra vonatkozó információ

a1) Külső jellemzők: Folyadék (25.0°C)

a2) Színes: Sárga

b) Szag: Jellegzetes mint a sztirol

c) Szagküszöbérték: 0,15 - 0,25 ppm ref. Sztirol

d) pH-érték: NEM ALKALMAZHATÓ

e1) Olvadáspont: NEM ALKALMAZHATÓ

e2) Fagyáspont: - 31 °C ref. Sztirol

f1) Forráspont: 145.0 °C ref. Sztirol

f2) Kezdeti forráspont: NEM ÁLL RENDELKEZÉSRE

f3) Végleges forráspont: NEM ÁLL RENDELKEZÉSRE

g) Lobbanáspont: 31 °C zárt tégelyes módszer ISO 3680

h) Párolgási sebesség: NEM ÁLL RENDELKEZÉSRE

i) Tűzveszélyesség (szilárd, gázhalmazállapot): NEM ÁLL RENDELKEZÉSRE

j1) Felső gyulladási határérték: 6,1 % Vol. ref. Sztirol

j2) Alsó gyulladási határérték: 1,1 % Vol. ref. Sztirol

j3) Felső robbanási határérték: 6,1 % Vol. ref. Sztirol

j4) Alsó robbanási határérték: 1,1 % Vol. ref. Sztirol

k) Gőznyomás: 6,7 hPa ref. Sztirol(20°C)

l) Gőzsűrűség: 3,6 ref. Sztirol

m) Relatív sűrűség: 1,03 - 1,16 g/cm3 a 25°C

n) Vízoldékonyság: 0.30 g/l oldhatatlan

o) Megoszlási hányados: n-oktanol/víz: NEM ÁLL RENDELKEZÉSRE

p) Öngyulladási hőmérséklet: 490.0 °C ref. Sztirol

q) Bomlási hőmérséklet: NEM ÁLL RENDELKEZÉSRE

r) Viszkozitás: 200 - 400 mPa.s (25°C) - Brookfield

s) Robbanásveszélyes tulajdonságok: NEM ÁLL RENDELKEZÉSRE

t) Oxidáló tulajdonságok: NEM ÁLL RENDELKEZÉSRE

9.2. Egyéb információk

Nincs

10. SZAKASZ: Stabilitás és reakciókészség

10.1. Reakciókészség

Normál körülmények között stabil.

10.2. Kémiai stabilitás

Melegen polimerizálódik.

10.3. A veszélyes reakciók lehetősége

Veszélyes reakciók:
Erős hőhatás vagy közvetlen napfénynek való kitettség esetén a gyanta spontán módon olyan reakcióval polimerizálódik, amely nagymértékben exoterm jellegű lehet.

10.4. Kerülendő körülmények

Hő. Közvetlen napfénynek való kitettség

10.5. Nem összeférhető anyagok

Erős oxidálószerek, fémoxidok.

10.6. Veszélyes bomlástermékek

Szén-oxidok, aromás szénhidrogének

11. SZAKASZ: Toxikológiai adatok

(*)11.1. A toxikológiai hatásokra vonatkozó információ

Keverék:

Akut toxicitás:
Szájon át: ATE mix (24h): > 5000 mg/Kg. Nem Osztályozzák.
Belélegzés: ATE mix (4h): > 20 mg/l air, (vapours). Nem Osztályozzák.
Bőrön át: ATE mix: > 4000 mg/kg. Nem Osztályozzák.

Aspirációs veszély:
Módszer: ASTM D 445.
Eredmények: Kinematikai viszkozitás > 20.5 mm2/s a 40°C
Következtetések: Nem Osztályozzák.

Sztirol (CAS 100-42-5):

Akut toxicitás:
Szájon át: LD50(24h): 5000 mg/Kg, Patkány.
Belélegzés: LC50(4h): 11.8 mg/l air, (vapours), Patkány. Osztályozás Kategória 4 (H332)

Bőrön át: LD50: > 2000 mg/kg, Patkány.

Bőrmarás/-irritáció:
Eredmények: Irritáló. Osztályozás Kategória 2 (H315)

Súlyos szemkárosodás/szemirritáció:
Eredmények: Irritáló. Osztályozás Kategória 2 (H319)

Légzőszervi szenzibilizáció vagy bőrszenzibilizáció:

Légzőszervi szenzibilizáló: Nem Osztályozzák.

Bőrszenzibilizáló: Nem Osztályozzák.

Csírasejt-mutagenitás: Nem Osztályozzák.

Rákkeltő hatás: Nem Osztályozzák.

Reprodukciós toxicitás:
Eredmények: Osztályozás Kategória 2 (H361d)

Célszervi toxicitás (STOT) - Egyszeri expozíció:
Expozíciós útvona: Belélegzés.
célszervek: Izgatja a légutakat.
Eredmények: Osztályozás Kategória 3 (H335)

Célszervi toxicitás (STOT) - Ismétlődő expozíció:
Expozíciós útvona: Belélegzés.
célszervek: Hallószervek.
Eredmények: Osztályozás Kategória 1 (H372)

Aspirációs veszély:
Eredmények: Osztályozás Kategória 1 (H304)

12. SZAKASZ: Ökológiai információk

(*)12.1. Toxicitás

Nincs kísérleti adat a keveréket.

Sztirol (CAS 100-42-5):

Toxicitás a vízi környezetre:

Rövid távú toxicitás vízi környezetben:

Halak:
Eredmények: LC50 (96h): 4.02 mg/L (Pimephales promelas)

Vízi gerinctelenek:
Eredmények: EC50 (48h): 4.7 mg/L (Daphnia magna)

Algák és vízi cianobaktériumok:
Eredmények: EC50 (72h): 4.9 mg/L (Pseudokirchneriella subcapitata)

Vízi mikroorganizmusok:
Eredmények: EC50 (30 min): ca. 500 mg/L (activated sludge of domestic sewage)
Eredmények: NOEC (16h): 72 mg/L (Pseudomonas putida)

Hosszú távú toxicitás vízi környezetben:

Halak: Adat nem elérhető.

Vízi gerinctelenek:
Eredmények:
NOEC (21 d): 1.01 mg/L (Daphnia magna)
EC50 (21 d): 1.88 mg/L (Daphnia magna)

Toxicitás a szárazföldi környezetre:

Rövid távú toxicitás a szárazföldi környezetre:

Talaj-makroorganizmusok, kivéve a szárazföldi ízeltlábúak:
Eredmények:
LC50 (14d): 500 - 1000 mg/kg talaj dw (Eisenia fetida)

Következtetések: Osztályozás Kategória 3 (H412)

(*)12.2. Perzisztencia és lebonthatóság

Nincs kísérleti adat a keveréket.

Sztirol (CAS 100-42-5):

Lebonthatóság:

Abiotikus lebomlás:

Hidrolízis:
Az 1907/2006/EK REACH rendelet, erre az értékelésre nincs szükség,
ha az anyag biológiailag könnyen lebontható.

Fotolízis levegőben:

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

Módszer:
Publication: Kinetics of vapor-phase hydrocarbon-ozone reactions.
Eredmények:
Felezési idő (DT50): 9.2 h (for reactions with ozone)

Fotolízis vízben:
Módszer:
Publication: Ein Beitrag zur Photostabilität organischer Umweltchemikalien in Gegenwart von Wasserstoffperoxid in aquatischen Systemen.
Eredmények:
Felezési idő (DT50): 237 d

Biotikus lebomlás:

Biológiai lebomlás vizes:
Módszer:
According to ISO DIS 9408 (Ultimate Aerobic Biodegradability - Method by Determining the Oxygen Demand in a Closed Respirometer).
Activated sludge, domestic, non-adapted, aerobic.
Eredmények:
Lebomlás%-át a anyag:
68 után 10 d (of ThOD)
70.9 után 28 d (of ThOD)
100 után 28 d (COD)

Következtetések: Biológiailag könnyen lebontható.

(*)12.3. Bioakkumulációs képesség

Bioakkumulációs képesség:

Nincs kísérleti adat a keveréket.

Sztirol (CAS 100-42-5):

vízi környezetben:
Módszer:
Calculated from log Kow.

Eredmények:
BCF: 74 L/Kg (or dimensionless)

(*)12.4. A talajban való mobilitás

Nincs kísérleti adat a keveréket.

Sztirol (CAS 100-42-5):

Adszorpció/deszorpció:
Módszer:
Value estimated by calculation.
Eredmények:
Talaj/víz megoszlási együtthatóját:
Koc: 352 (20°C)
Log Koc: 2.55 (20°C)

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

Megoszlása között környezeti elemekben:
Módszer:
Calculation according to Mackay, Level I, version 3.00.
Media: Levegő - Üledék - Talaj - Víz.
Eredmények:
Átlagos százalékos megoszlása:
Levegő (%): 98.6
Víz (%): 1.21
Talaj (%): 0.09
Üledék (%): 0.09

(*)12.5. A PBT- és a vPvB-értékelés eredményei

A PBT- és a vPvB-értékelés eredményei:

Nincs kísérleti adat a keveréket.

Sztirol (CAS 100-42-5):
A rendelkezésre álló információk alapján az anyag nem PBT/vPvB.

12.6. Egyéb káros hatások

Nem ismert.

13. SZAKASZ: Ártalmatlanítási szempontok

13.1. Hulladékkezelési módszerek

Ha lehetőseg van ra hasznalja fel ujra vagy ha nem szallitassa el az erre kijelölt feldolgozo üzembe. A veletlen folytan elszivargott folyadek kezelesere illetve ebben az esetben alkalmazott intezkedesekre a 6. illetve 7. szelvenyben leirtak az utmutatok. A tarolok ujrahasznositasa a szemettelepen javasolt. Tartsa figyelembe a helyi illetve az orszagon belüli előirasokat.

14. SZAKASZ: Szállításra vonatkozó információk

14.1. UN-szám

1866

14.2. Az ENSZ szerinti megfelelő szállítási megnevezés

GYANTAOLDAT, GYÚLÉKONY

14.3. Szállítási veszélyességi osztály(ok)

3

14.4. Csomagolási csoport

III

14.5. Környezeti veszélyek

NEM ALKALMAZHATÓ

14.6. A felhasználót érintő különleges óvintézkedések

NEM ALKALMAZHATÓ

ADR/RID

- Alagutban hasznalt korlatozasi kodok: D/E
- Szallithato maximalis rakomanyfele: 3
- LQ kod, egy-egy csomag korlatozott maximalis tartalma: LQ7
- E kod, hianyzo mennyiseg: E1

IMDG

- LQ kod , egy-egy csomag korlatozott maximalis tartalma: 5 L
- E kod hianyzo mennyiseg: E1
- Ems: F-E, S-E

ICAO/IATA

- Csomagolasi utasitasok / korlatozott maximalis netto tömeg egy-egy csomagban / cargo vagy kombi legiszallitmany eseten: 355 / 60 L - 366 / 220 L
- Csomagolasi utasitasok / maximalis netto tömeg egy-egy csomagban / korlatozott szallitasi mennyisegek előirasa eseten: Y344 / 10 L
- EQ kod ami a hianyzo mennyiseg aranyat jelzi : E1

14.7. A MARPOL-egyezmény II. melléklete és az IBC szabályzat szerinti ömlesztett szállítás

NEM ÁLL RENDELKEZÉSRE

15. SZAKASZ: Szabályozással kapcsolatos információk

(*)15.1. Az adott anyaggal vagy keverékkel kapcsolatos biztonsági, egészségügyi és környezetvédelmi előírások/jogszabályok

EK-rendelet 1907/2006/EK (Reach);
EK-rendelet 1272/2008/EK (CLP);
EK-rendelet 830/2015/EU;
Irányelv 642/1988/EGK;
Irányelv 24/1998/EK;
Irányelv 92/1999/EK;
Irányelv 18/2012/EU;

A keverék felhasználhatósága korlátozott: lásd: 1907/2006/EK (REACH) rendelet, XVII. melléklet, 1. oszlop, 3. sz.; 1. oszlop, 40. sz.

Germany: WGK: 2

(*)15.2. Kémiai biztonsági értékelés

Kémiai biztonsági értékelés (CSA): Igen.

Expozíciós forgatókönyv: A kockázat kezelésére vonatkozó információt a biztonsági adatlap mellékletét képező expozíciós forgatókönyv közli.

(*)16. SZAKASZ: Egyéb információk

Ez a biztonsági adatlap a 830/2015/EU rendelet szerint került összeállításra.

(*) A bal oldalon látható változások, mivel az utolsó változat.

Fontosabb hivatkozások:
GESTIS International Limit Values.

Rövidítések:

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.

A jelen biztonsági adatlapon szereplő információkat a közzététel időpontjában a termékre vonatkozó legjobb tudásunk alapján állítottuk össze. Ezek az információk kizárólag a termék szabályos

és biztonságos felhasználásának, tárolásának, szállításának és ártalmatlanításának célját szolgálják. Ezen információk nem tekinthetők garanciának vagy a termékminőség specifikációjának. Ezen információk csak a kifejezetten meghatározott anyagra vonatkoznak, de nem érvényesek olyan esetben, ha ez az anyag a jelen biztonsági adatlapon kifejezetten meg nem jelölt más anyagokkal vagy folyamatokkal együtt kerül felhasználásra.

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