

SAFETY DATA SHEET

CS20 Polyester Fibreglass Resin

Date: 26-06-2017

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SECTION 1: IDENTIFICATION OF PRODUCT AND COMPANY

1.1 Product Identifier

Product name: CS20 Polyester Fibreglass Resin
 Chemical Name: Unsaturated Polyester Resin
 Product Code: FL3310

1.2 Relevant identified uses of the substance or mixture and uses advised against

Intended use: Resins for composites. Contact us before using for food contact application

1.3 Details of supplier of the safety data sheet

Details of company: FLP Group
 Unit 1 Clayfields Industrial Estate
 Tickhill Road
 Doncaster
 DN4 8QG
 +44 (0) 1302 571571
sales@flpgroup.co.uk

1.4 Emergency telephone number

Emergency Tel: +44 (0) 1302 571571

SECTION 2: HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

Classification under CLP:	Skin Corrosion/Irritation	Category 2
	Serious Eye Damage/Eye Irritation	Category 2
	Reproductive Toxicity	Category 2
	Specific Target Organ Toxicity (Single Exposure)	Category 3
	Specific target organ toxicity - repeated exposure	Category 1
	Chronic Aquatic Toxicity	Category 3
	Flammable liquids	Category 3

2.2 Label elements

Hazard statements: H315 - Causes skin irritation
 H319 - Causes serious eye irritation
 H335 - May cause respiratory irritation
 H361d - Suspected of damaging the unborn child
 H372 - Causes damage to organs through prolonged or repeated exposure if inhaled
 H412 - Harmful to aquatic life with long lasting effects
 H226 - Flammable liquid and vapour

EU H-Phrases: EUH208 Contains phthalic anhydride- May produce an allergic reaction

Signal words: Danger

Hazard pictograms: GHS02: Flame
 GHS07: Exclamation mark
 GHS08: Health Hazard



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Precautionary statements:

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 P243 - Take precautionary measures against static discharge
 P260 - Do not breathe vapour
 P273 - Avoid release to the environment
 P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
 P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
 P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.

2.3 Other hazards

Other hazards: No information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Hazardous ingredients:

EINECS	CAS	CHIP Classification	CLP Classification	Percent
STYRENE - REACH registered number(s): 01-2119457861-32				
202-851-5	100-42-5	R10: Repr. Cat. 3; R63: Xn; R20: Xn; R48/20: Xn; R65: Xi; R36/37/38	Flam. Liq. 3 (H226); Repr. 2 (H361d); Acute Tox. 4 (H332); Skin Irrit. 2 (H315); Eye Irrit. 2 (H319); Asp. Tox. 1 (H304); STOT SE 3 (H335); STOT RE 1 (H372); Aquatic Chronic 3 (H412)	37%
PHTHALIC ANHYDRIDE - REACH registered number(s): 01-2119457017-41				
201-607-5	85-44-9	Xn; R22: Xi; R37/38: Xi; R41: R42/43	Acute Tox. 4 (H302); Skin Irrit. 2 (H315); Skin Sens. 1 (H317); Eye Dam. 1 (H318); Resp. Sens. 1 (H334); STOT SE 3 (H335)	<1%
HYDROPHILIC FUMED SILICA - REACH registered number(s): 01-2119379499-16				
231-545-4	112945-52-5	-	-	<1%
HEPTANE, 2,2,4,6,6-PENTAMETHYL - REACH registered number(s): 01-2119490725-29				
236-757-0	13475-82-6	R10: Xn; R65: R66: R53	Flam. Liq. 3 (H226); Asp. Tox. 1 (H304); Aquatic Chronic 1: (H410): (EUH066)	<1%
PHTHALIC ANHYDRIDE - REACH registered number(s): 01-2119490979-12				
265-185-4	64742-82-1	R10: Xn; R65: N; R51/53: R66: R67	Flam. Liq. 3 (H226); Asp. Tox. 1 (H304); STOT SE 3 (H336); Aquatic Chronic 2 (H411)	<1%

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice: Show this safety data sheet to the doctor in attendance. Do not breathe dust/fume/gas/mist/vapours/spray

Eye Contact: Rinse thoroughly with plenty of water, also under the eyelids. Keep eye wide open while rinsing. If symptoms persist, call a physician

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Skin contact: Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation persists, call a physician

Inhalation: Move to fresh air. If not breathing, give artificial respiration. Consult a physician

Ingestion: Do NOT induce vomiting. Rinse mouth. Consult a physician

Protection of first-aiders: Use personal protective equipment. See section 8 for more information

4.2 Most Important symptoms and effects, both acute and delayed

Eye Contact: Irritating to eyes

Skin contact: Irritating to skin. May produce an allergic reaction.

Inhalation: Harmful: danger of serious damage to health by prolonged exposure through inhalation. Irritating to respiratory system. May produce an allergic reaction.

Ingestion: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea

4.3 Indication of any immediate medical attention and special treatment needed

Immediate/special treatment: Not applicable

SECTION 5: FIRE FIGHTING MEASURES

5.1 Extinguishing media

Extinguishing media: Dry chemical, Foam, Carbon dioxide (CO₂), (closed systems). Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture

Exposure hazards: Vapours may form explosive mixtures with air. Most vapours are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Heating or fire can release toxic gas: Carbon monoxide.

5.3 Advice for fire-fighters

Advice for fire-fighters: Wear self-contained breathing apparatus and protective suit.

Other information: Cool containers / tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: Remove all sources of ignition Heat, flames and sparks. Take precautionary measures against static charges. Ensure adequate ventilation. Use personal protective equipment.

For emergency responders: Avoid breathing vapours or mists In the event of fire and/or explosion do not breathe fumes. Use personal protective equipment

6.2 Environmental precautions

Environmental precautions: The product should not be allowed to enter drains, water courses or the soil. Do not flush into surface water or sanitary sewer system.

6.3 Methods and material for containment and cleaning up

Clean-up procedures: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national

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regulations (see section 13) Use clean non-sparking tools to collect absorbed material.

6.4 Reference to other sections

Reference to other sections: See section 8 for more information
See Section 12 for additional Ecological Information

SECTION 7: HANDLING & STORAGE

7.1 Precautions for safe handling

Precautions for safe handling: Avoid static electricity build up with connection to earth. Use only in area provided with appropriate exhaust ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. For personal protection see section 8

Prevention of fire and explosion: Keep away from open flames, hot surfaces and sources of ignition. Do not use compressed air for filling, discharging or handling. Empty containers may contain flammable or explosive vapours

Hygiene measures: When using, do not eat, drink or smoke Provide regular cleaning of equipment, work area and clothing Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions: Keep in a dry, cool and well-ventilated place. Keep at temperature not exceeding 30°C. Keep away from heat and sources of ignition.

Materials to avoid: Strong oxidizing agents, Peroxides, Reducing agents

Packaging material: Metallic GRP Tanks (Reinforced Glass Polyester)

Unsuitable materials for containers: Aluminium copper alloys

7.3 Specific end use(s)

Specific end use(s): No data available.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits

Chemical Name	European Union	ACGIH OEL (Ceiling)	The United Kingdom	Ireland
Styrene 100-42-5	-	TLV-8h TWA: 20 ppm – 85mg/m3 TLV-15min STEL: 40 ppm – 170 mg/m3	STEL 250 ppm STEL 1080 mg/m3 TWA 100 ppm TWA 430 mg/m3	TWA 20 ppm TWA 85mg/m3 STEL 40 ppm STEL 170mg/m3
Phthalic Anhydride 85-44-9	-	TWA 1 ppm	STEL 12 mg/m3 TWA 4 mg/m3 Sen+	TWA 4 mg/m3 STEL 12 mg/m3 Sensitizer

Biological Standards

Chemical Name	European Union	The United Kingdom	Ireland
Styrene 100-42-5		We are not aware of any national exposure limit	We are not aware of any national exposure limit

Derived No Effect Level (DNEL)

Derived No Effect Level (DNEL)
Styrene (100-42-5)

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Type	DNEL oral	DNEL dermal	DNEL inhalation
Workers - Long Term - Systemic effect		406 mg/Kg bw/day	85 mg/m ³
Workers - Acute Short Term - Local effect			306 mg/m ³
Workers - Acute Short term - Systemic effect			289 mg/m ³
General Population – Acute Short Term - Local effect			182.7 mg/m ³
General Population – Acute Short Term - Systemic effect			174.2 mg/m ³
General Population – Long Term - Systemic effect	2.1 mg/Kg bw/day	343 mg/Kg bw/day	10.2 mg/m ³

Phthalic Anhydride (85-44-9)			
Type	DNEL oral	DNEL dermal	DNEL inhalation
Workers - Long Term - Systemic effect		10 mg/kg bw/day	32.2 mg/m ³
General Population – Long Term - Systemic effect	5 mg/kg bw/day	5 mg/kg bw/day	8.6 mg/m ³

Hydrophilic fumed silica (112945-52-5)			
Type	DNEL oral	DNEL dermal	DNEL inhalation
Workers - Long Term - Systemic effect			4 mg/m ³

Predicted No Effect Concentration (PNEC)

PNEC Component		
Styrene (100-42-5)		
Exposure	Type	PNEC
Fresh Water	PNEC Aqua	0.028 mg/L
Marine Water	PNEC Aqua	0.014 mg/L
Intermittent use/release	PNEC Aqua	0.04 mg/L
Fresh Water	PNEC Sediment	0.614 mg/Kg.dw
Marine Water	PNEC Sediment	0.307 mg/Kg.dw
Terrestrial Compartment	PNEC Soil	0.2 mg/Kg.dw
STP microorganisms	PNEC STP	5 mg/L
Phthalic Anhydride (85-44-9)		
Fresh Water	PNEC Aqua	1 mg/L
Marine Water	PNEC Aqua	0.1 mg/L
Intermittent use/release	PNEC Aqua	5.6 mg/L
Fresh Water	PNEC Sediment	3.8 mg/kg sediment dw
Marine Water	PNEC Sediment	0.38 mg/kg sediment dw
Terrestrial Compartment	PNEC Soil	0.173 mg/kg soil dw
STP microorganisms	PNEC STP	10 mg/L
Hydrophilic fumed silica (112945-52-5)		
Secondary Poisoning	PNEC Oral	60000 mg/kg

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8.2 Exposure controls

Engineering measures

Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment

Personal Protective Equipment

General Information:

Use personal protective equipment.

Respiratory Protection:

In case of insufficient ventilation wear suitable respiratory equipment. Breathing apparatus with filter. Type A. Respirator must be worn if exposed to dust. Effective dust mask. Type A/P2

Eye Protection:

Safety glasses with side-shields. Do not wear contact lenses

Skin and Body Protection:

Antistatic boots. Protective shoes or boots. Wear fire/flame resistant/retardant clothing

Hand Protection:

Impervious gloves. Glove material, Neoprene, Nitriles, Viton (R), or Polyvinyl alcohol, Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Pink
Physical state	Liquid
Particle size	no data available
Odour	Styrene
Odour Threshold	no data available
pH	no data available
pH (as aqueous solution)	no data available
Melting point/range	-30 °C (Values related to styrene)
Freezing point	no data available
Boiling point	145°C (Values related to styrene)
Flash point	31°C
Evaporation rate	no data available
Flammability Limits in Air	
Upper	6.1 – 6.8% (Values related to styrene)
Lower	0.9 – 1.1% (Values related to styrene)
Vapour pressure	6 hPa 20°C
Vapour density	3.6 (Values related to styrene)
Density	1.1 - 1.15 g/cm ³ 20°C
Water solubility	Insoluble in water
Partition coefficient:	
N-octanol/water	no data available
Auto ignition temperature	490 °C (Values related to styrene)
Decomposition temperature	no data available
Viscosity, kinematic	209 - 245mm ² /s 25°C
Viscosity, dynamic	230 - 270mPa.s 25°C
Explosive properties	not applicable
Oxidizing properties	not applicable

9.2 Other information

Solubility in other solvents

Soluble in most organic solvents

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Reactivity:

Product may ignite and burn at temperatures exceeding the flash point.

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10.2 Chemical stability

Chemical stability: Stable under recommended storage conditions.

10.3 Possibilities of hazardous reactions

Hazardous reactions: In use, may form flammable/explosive vapour-air mixture

Hazardous polymerisation: Polymerisation can occur

10.4 Conditions to avoid

Conditions to avoid: Heat, flames and sparks. Exposure to light. Take precautionary measures against static charges

10.5 Incompatible materials

Materials to avoid: Strong oxidizing agents, Peroxides, Reducing agents

10.6 Hazardous decomposition products

Hazardous decomposition products: Incomplete combustion and thermolysis produces potentially toxic gases such as carbon monoxide and carbon dioxide

SECTION 11: TOXICAL INFORMATION

11.1 Information on toxicological effects

Acute Toxicity

Inhalation: Harmful: danger of serious damage to health by prolonged exposure through inhalation Irritating to respiratory system May produce an allergic reaction.

Ingestion: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Styrene 100-42-5	5000 mg/kg (Rat)	> 2000 mg/kg bw (Rat) 24h OECD 402	11.8 mg/L (Rat) 4h CSR
Phthalic Anhydride 85-44-9	1530 mg/kg bw (Rat)	> 3160 mg/kg bw (Rabbit)	> 2.14 mg/L (Rat) 4h OECD 403
Hydrophilic fumed silica 112945-52-5	> 5000 mg/kg bw (Rat) OECD 401	> 5000 mg/kg (Rabbit)	> 0.14 mg/L air (Rat) 4h (analytical) OECD 403
Heptane, 2,2,4,6,6-pentamethyl-13475-82-6	> 5000 mg/kg bw (Rat) OECD 401	>= 3160 mg/kg bw (Rabbit) Similar to OECD 402	> 4,95 mg/L (Rat) 4h Similar to OECD 403

Skin corrosion/irritation

Chemical Name

Styrene100-42-5

Phthalic anhydride 85-44-9

Hydrophilic fumed silica 112945-52-5

Heptane,2,2,4,6,6-pentamethyl-13475-82-6

Chemical Name

Styrene 100-42-5

Phthalic anhydride 85-44-9

Hydrophilic fumed silica 112945-52-5

Heptane,2,2,4,6,6-pentamethyl-13475-82-6

Skin corrosion/irritation

Irritating to skin in vivo assay rabbit

Irritating to skin in vivo assay rabbit OECD 404

No skin irritation rabbit OECD 404

No skin irritation in vivo assay rabbit similar to OECD 404

Serious Eye Damage/Eye Irritation

Irritating to eyes in vivo assay rabbit

Irritating to eyes in vivo assay rabbit Draize Test

No eye irritation rabbit OECD 405

No eye irritation in vivo assay rabbit OECD 405

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Respiratory or skin sensitisation

Chemical Name

Styrene 100-42-5

Phthalic anhydride 85-44-9

Hydrophilic fumed silica 112945-52-5

Heptane,2,2,4,6,6-pentamethyl-13475-82-6

May produce an allergic reaction.

Respiratory or skin sensitisation

Does not cause skin sensitization. Does not cause respiratory sensitization. CSR

May cause sensitisation by inhalation and skin contact in vivo assay guinea pig OECD 406

Does not cause skin sensitization. Does not cause respiratory sensitization

Does not cause skin sensitization in vivo assay guinea pig Similar to OECD 406

Mutagenic Effects

Chemical Name

Styrene 100-42-5

Phthalic anhydride 85-44-9

Hydrophilic fumed silica 112945-52-5

Heptane,2,2,4,6,6-pentamethyl-13475-82-6

Ames test

Ambiguous In vitro gene mutation study in bacteria (S. typhimurium G46, TA1530, TA 1535, TA100, TA98, TA1538, TA 1537) OECD 471

negative In vitro gene mutation study in bacteria (S. typhimurium TA 1535, TA 1537, TA 98, TA100 and TA 102) (Escherichia coli WP2 uvrA) OECD 471

negative In vitro gene mutation study in bacteria OECD 471

negative In vitro gene mutation study in bacteria (S. typhimurium, other: S. typhimurium TA 1535, TA 1537, TA 98, TA 100, TA 1538) similar to OECD 471

Component

Styrene 100-42-5

(~37)

Phthalic anhydride 85-44-9

(<1)

Hydrophilic fumed silica 112945-52-5

(<1)

Heptane,2,2,4,6,6-pentamethyl-13475-82-6

(~0.3)

Chemical Name

Styrene 100-42-5

Phthalic anhydride 85-44-9

Hydrophilic fumed silica 112945-52-5

Heptane,2,2,4,6,6-pentamethyl- 13475-82-6

In vitro study

Ambiguous In vitro gene mutation study in mammalian cells hamster OECD 476

negative In vitro gene mutation study in mammalian cells hamster OECD 476

negative In vitro gene mutation study in mammalian cells OECD 476

negative In vitro gene mutation study in mammalian cells hamster similar to OECD 476

Mutagenicity (in vitro mammalian cytogenetic test)
positive Chromosome aberration test in vitro OECD 473 OECD 479

Ambiguous Chromosome aberration test in vitro hamster OECD 473

negative Chromosome aberration test in vitro OECD 473

negative Chromosome aberration test in vitro similar to OECD 473

Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)

negative mouse OECD 486 OECD 474

negative rat

negative mouse similar to OECD 474

Chemical Name

Styrene 100-42-5

Hydrophilic fumed silica 112945-52-5

Heptane,2,2,4,6,6-pentamethyl-13475-82-6

Carcinogenicity:

Anima testing did not show any carcinogenic effects

Exposure Routes	Method	Species	Dose	Evaluation
Styrene (100-42-5)				
Inhalation	OECD 453	Rat	NOAEC systemic (carcinogenicity) >= 4.34mg/L air (nominal)	Negative
Inhalation	OECD 453	Mouse	LOAEC (carcinogenicity)	Positive

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			female/male = 0.09 - 0.18 mg/L air resp., NOAEC (carcinogenicity) male = 0.09 mg/L air	
Oral	No information available	Rat	NOAEL (carcinogenicity) >= 2000 mg/kg bw /day	Positive
Oral	No information available	Mouse	LOAEL (carcinogenicity) = 150 mg/kg bw /day	Positive
phthalic anhydride (85-44-9)				
Oral	No information available	Rat	NOAEL (carcinogenicity, male) = 3570 mg/kg bw/day (72w) NOAEL (carcinogenicity, female) = 1785 mg/kg bw/day (72w)	Negative
Oral	No information available	Mouse	NOAEL (carcinogenicity) = 1000 mg/kg bw/day (105w)	Negative
Hydrophilic fumed silica (112945-52-5)				
Oral	OECD 453	Rat	NOAEL = 1800 – 3200 mg/kg bw/day	Negative

Reproductive toxicity

Exposure Routes	Method	Species	Dose	Evaluation
Styrene (100-42-5)				
Inhalation	No information available	Rat	NOAEL/LOAEL (fertility) 60d = 100 - 200 mg/kg bw/day	Positive
Oral	OECD 422	Rat	NOAEL/LOAEL (fertility) 60d = 200 - 400 mg/kg bw/day	Positive
Inhalation	OECD 416	Rat	NOAEC (P, F1) = 0.64 mg/L air LOAEC (P, F1) = 2.13 mg/L air NOAEC (F2) = 0.21 mg/L air LOAEC (F2) = 0.64 mg/L air (70d)	Positive
phthalic anhydride (85-44-9)				

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Oral	No information available	Mouse	NOAEL (reproductive, male) = 3570 mg/kg bw/day (72w) NOAEL (reproductive, female) = 1785 mg/kg bw/day (72w)	Negative
Oral	No information available	Rat	NOAEL (reproductive, female) = 1000 mg/kg bw/day (105w)	Negative
Hydrophilic fumed silica (112945-52-5)				
Oral	OECD 415	Rat	NOAEL = 497 mg/kg bw/day	Negative
Heptane, 2,2,4,6,6-pentamethyl- (13475-82-6)				
Oral	Read-across (Analogy) decane, undecane similar to OECD 422	Rat	NOAEL (P/F1) >= 1000 mg/kg bw/day	Negative

Development Toxicity

Suspected of damaging the unborn child

Exposure Routes	Method	Species	Dose	Evaluation
Styrene (100-42-5)				
Inhalation	No information available	Rat	NOAEC/LOAEC (maternal toxicity + developmental toxicity) >50d = 1.08 - 2.15 mg/L air	Positive
Inhalation	OECD 414	Rat	LOAEC (maternal toxicity) 6-15d = 1.28 mg/L air	Negative
Inhalation	OECD 414	Rat	NOAEC (developmental toxicity) 6-15d >= 2.56 mg/L air	Negative
Inhalation	OECD 414	Rabbit	NOAEC (maternal toxicity + developmental toxicity) 6-18d = 2.56 mg/L air	Negative
phthalic anhydride (85-44-9)				
Oral	Read-across (Analogy) phthalic acid Cas N°:88-99-3	Rat	NOAEL (maternal toxicity) = 1000 mg/kg bw/day NOAEL (teratogenicity) = 1700 mg/kg bw/day	Positive
Hydrophilic fumed silica (112945-52-5)				
Oral	OECD 414	Rat	NOAEL (maternal toxicity) = 1350 mg/kg bw/day NOAEL (teratogenicity) = 1350 mg/kg bw/day	Negative
Heptane, 2,2,4,6,6-pentamethyl- (13475-82-6)				

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Inhalation	similar to OECD 414	Rat	NOAEL (maternal toxicity/developmental toxicity) 6-15d >= 5220 mg/m ³ air	Negative
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Specific target organs toxicity

May cause irritation of respiratory tract

Single exposure

Chemical Name

Phthalic anhydride 85-44-9

Hydrophilic fumed silica 112945-52-5

STOT - single exposure

May cause respiratory irritation

Not classified

Repeated exposure

Chemical Name

Styrene 100-42-5

STOT - repeated exposure

Causes damage to organs through prolonged or repeated exposure. target organ(s), Central nervous system, Ears.

NOAEC (inhalation, rat, male) = 3.47 mg/L air (28d),

NOAEC (ototoxicity) = 2.13 mg/L air (28d), NOAEC

(inhalation, mouse) = 0.181 mg/L air (28d), OECD 412

NOAEC (inhalation, rat) = 0.688 mg/L air (28d), OECD 412

NOAEC nasal tract. (inhalation, rat) = 0.85 mg/L air (90d),

NOAEC overall (inhalation, rat) = 2.13 mg/L air (90d)

NOAEL toxicity (oral, rat) = 1000 mg/kg bw/day, LOAEL

toxicity (oral, rat) = 2000 mg/kg bw/day NOAEL toxicity

(oral, mouse) = 150 mg/kg bw/day, LOAEL toxicity (oral,

mouse) = 300 mg/kg bw/day LOAEL local toxicity

(inhalation, rat) = 0.21 mg/L air, OECD 453

NOAEL (oral, rat) 7 weeks = 1250 mg/kg bw/day LOAEL

(oral, rat) 7 weeks = 2500 mg/kg bw/day NOAEL (oral, rat)

105 weeks = 500 mg/kg bw/day LOAEL male/female

(mouse) 72 weeks : 2340 - 1717mg/kg bw/day

Not classified NOEL (oral, rat) = 4000 <= 4500 mg/kg

bw/day (90d) OECD 408 NOEC (inhalation, rat) = 1.3

mg/m³ air (analytical), NOEC < 1.3 mg/m³ air (analytical)

(90d) OECD 413 NOAEL (dermal, rabbit) >= 10000 mg/kg

bw/day

phthalic anhydride 85-44-9

Hydrophilic fumed silica 112945-52-5

Heptane,2,2,4,6,6-pentamethyl- 13475-82-6

NOAEC (inhalation, mouse) 17d >= 400 ppm, similar to

OECD 412 NOAEL oral, rat) 13 weeks >= 1000 mg/kg

bw/day, similar to OECD 408 NOAEL (inhalation, rat) 13

weeks >= 1,16 mg/L, OECD 413 "INHALATION: 105 weeks,

rat NOAEC No treatment-related mortality or significant

adverse clinical effects occurred (inhalation, rat) 105

weeks >= 400 ppm, NOAEC Based on male rat specific

alpha 2u-globulin-induced nephropathy. Humans do not

produce this protein (inhalation, rat) 105 weeks = 25 ppm,

similar to OECD 453

Aspiration hazard:

Due to the viscosity, this product does not present an aspiration hazard.

Other information:

None

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Eco Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Do not flush into surface water or sanitary sewer system

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Acute aquatic toxicity – Component information

Chemical Name	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates	Toxicity to fish	Toxicity to microorganisms
Styrene 100-42-5	LC50 (72h) = 4.9 mg/L (Pseudokirchnerella subcapitata) EPA OTS 797.1050	EC50 (48h) = 4.7 mg/L (Daphnia magna), NOEC = 1.9 mg/L OECD 202	LC50 (96h) = 1.02 – 10 mg/L (Pimephales promelas) OECD 203	EC (30min) = 500 mg/L (Activated sludge of a predominantly domestic sewage) OECD 209
phthalic anhydride 85-44-9	EC50 (72h) = 68 mg/L, NOEC (72h) = 32 mg/L (Pseudokirchnerella subcapitata) OECD 201	EC50 (48h) = 71 mg/L (Daphnia magna) OECD 202	LC50 (96h) > 99 mg/L (Oryzias latipes) OECD 203	EC50 (3h) > 1000 mg/L (Activated sludge), ISO 8192 EC50 (16h) = 13 mg/L (Pseudomonas putida), ISO 10712
Hydrophilic fumed silica 112945-52-5		EL50 (24h) >= 1000 mg/L (Daphnia magna) OECD 202	LC50 (96h) > 10000 mg/L (Brachydanio rerio) OECD 203	
Heptane, 2,2,4,6,6-pentamethyl- 13475-82-6	EC50 (72h) > 22.5 µg/L (Desmodesmus subspicatus) OECD 201	EC50 (48h) > 1.3 mg/L (Daphnia magna) ASTM E729-88 Read across with Cas N°: 918-271-7	LC50 (96h) > 2.8 µg/L (Danio rerio) OECD 203	

Chronic aquatic toxicity – Component Information

Chemical Name	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates	Toxicity to fish	Toxicity to microorganisms
Styrene 100-42-5		NOEC (21d) = 1.01 mg/L (Daphnia magna), LOEC (21d) = 2.06 mg/L, EC50 (21d) = 1.88 mg/L OECD 203		
phthalic anhydride 85-44-9		NOEC (reproduction) 21d = 16 mg/L, EC50 (reproduction) 21d = 42 mg/L (Daphnia magna) OECD 211	LC50 (7d) = 560 mg/L (Danio rerio), OECD 210 LOEC (total embryotoxicity) 60d = 32 mg/L, NOEC (mortality, length, weight, embryotoxicity) 60d = 10 mg/L, OECD 210	
Heptane, 2,2,4,6,6-pentamethyl-		NOEC (immobility & reproduction) 21d = 0.013	NOELR (28d) = 0.267 mg/L	

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13475-82-6		mg/L (Daphnia magna) OECD 211	(Oncorhynchus mykiss) QSAR	
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Effects on terrestrial organisms - Component Information

Acute Toxicity				
Phthalic anhydride (85-44-9)				
Acute toxicity	Test method	Species	Vaules	Remarks
Plants		Lactuca sativa	EC50 (germination) = 731 mg/L	

Cronic Toxicity				
Styrene (100-42-5)				
Cronic toxicity	Test method	Species	Vaules	Remarks
Toxicity to invertebrates	OECD 207	Eisenia foetida	LC50 (14d) = 120 mg/kg soil dw LOEC (burrowing time and mean percent weight change) = 65 mg/kg soil dw LOEC (survival) = 180 mg/kg soil dw NOEC (mean percent weight change) = 34 mg/kg soil dw	

12.2 Persistence and degradability

Component	Biodegradation	Evaluation
Styrene 100-42-5 (~37)	87% (20d) similar to OECD 01D	Readily biodegradable
phthalic anhydride 85-44-9 (<1)	68 % (10d), 74 % (30d) OECD 301 D	Readily biodegradable
Heptane, 2,2,4,6,6-entamethyl-13475-82-6 (~0.3)	14 % (31dd) EPA OTS 796.3100, Read across with Cas N°: 918-271-7	Not inherently biodegradable.

12.3 Bio accumulative potential

Bio concentration factor (BCF)		
Styrene (100-42-5)		
Method	Species	Bio concentration factor (BCF)
Calculation method		74
Phthalic anhydride (85-44-9)		
Method	Species	Bio concentration factor (BCF)
Calculation method		3.16-3.4

Chemical Name:	Log Pow
Styrene (100-42-5)	3
Phthalic anhydride (85-44-9)	1.6

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12.4 Mobility in soil

Chemical Name	LogKoc	Koc
Styrene (100-42-5)	22.5	352
Phthalic anhydride (85-44-9)		31

12.5 Results of PBT and vPvB assessment

Chemical name	PBT	vPvB
Styrene (100-42-5)	This substance is not considered to be persistent, bio accumulating nor toxic (PBT).	This substance is not considered to be very persistent nor very bio accumulating (vPvB).
Phthalic anhydride (85-44-9)	This substance is not considered to be persistent, bio accumulating nor toxic (PBT).	This substance is not considered to be very persistent nor very bio accumulating (vPvB).
Hydrophilic fumed silica 112945-52-5	This substance is not considered to be persistent, bio accumulating nor toxic (PBT).	This substance is not considered to be very persistent nor very bio accumulating (vPvB).
Heptane, 2,2,4,6,6-entamethyl- 13475-82-6	This substance is not considered to be persistent, bio accumulating nor toxic (PBT).	This substance is not considered to be very persistent nor very bio accumulating (vPvB).

12.6 Other adverse effects

None know

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Residues/Unused Products

Dispose of in accordance with the European Directives on waste and hazardous waste. Do not flush into surface water or sanitary sewer system

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal.

Other information

According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: TRANSPORTATION INFORMATION

14.1 UN number

UN number:

UN1866

14.2 UN proper shipping name

Shipping name:

RESIN SOLUTION

14.3 Transport hazard class

Transport class:

3

14.4 Packaging group

Packing group:

III

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14.5 Environmental hazards

Environmentally hazardous: No
Marine pollutant: No

14.6 Special precautions for user

Special precautions: No special precautions.
Tunnel code: D/E
Transport category: 3

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Chemical Name	96/82/EC (SEVESO) - §9	96/82/EC (SEVESO) - §6, §7
Styrene - 100-42-5	50000	5000 tonnes 50000 tonnes

15.2 Chemical safety assessment

Not applicable

SECTION 16: OTHER INFORMATION

Other information: This safety data sheet is prepared in accordance with Commission Regulation (EU) No 453/2010.
* indicates text in the SDS which has changed since the last revision.

Phrases used in s.2 and 3:

- H226 - Flammable liquid and vapour
- H302 - Harmful if swallowed
- H304 - May be fatal if swallowed and enters airways
- H315 - Causes skin irritation
- H317 - May cause an allergic skin reaction
- H318 - Causes serious eye damage
- H319 - Causes serious eye irritation
- H332 - Harmful if inhaled
- H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
- H335 - May cause respiratory irritation
- H336 - May cause drowsiness or dizziness
- H361d - Suspected of damaging the unborn child
- H372 - Causes damage to organs through prolonged or repeated exposure if inhaled
- H410 - Very toxic to aquatic life with long lasting effects
- H411 - Toxic to aquatic life with long lasting effects
- H412 - Harmful to aquatic life with long lasting effects
- EUH066 - Repeated exposure may cause skin dryness or cracking
- EUH208 - May produce an allergic reaction.
- R10 - Flammable
- R20 - Harmful by inhalation
- R22 - Harmful if swallowed
- R41 - Risk of serious damage to eyes
- R53 - May cause long-term adverse effects in the aquatic environment
- R63 - Possible risk of harm to the unborn child
- R65 - Harmful: may cause lung damage if swallowed
- R66 - Repeated exposure may cause skin dryness or cracking
- R67 - Vapours may cause drowsiness and dizziness
- R36/37/38 - Irritating to eyes, respiratory system and skin.

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R37/38 - Irritating to respiratory system and skin.
R42/43 - May cause sensitisation by inhalation and skin contact.
R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Legal disclaimer:

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.