TRIJECT 11C351G

Product Name:	**TRIJECT 11C351G** **1060257 Rev. 1.**
Revision Date:	26-NOV-2018 **According to Regulation (EC) No. 1907/2006**

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Name: TRIJECT 11C351G
Chemical Name: Unsaturated Polyester Resin
Pure Substance/Mixture: Mixture

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

Identified uses: Resins for composites. Contact us before using for food contact application.

1.3. Details of the supplier of the safety data sheet

Tricel Composites (GB) Limited

Unit A, Foxway,
Off Atkinson Street,
Leeds, West Yorkshire,
LS10 1PS.
Tel: +44 (0)113 270 3133

Tricel Composites (NI) Limited

Unit 4, Milltown Ind. Estate, Greenan Road. Warrenpoint, Newry
Co. Down,
BT34 3FN.
Tel: +44 (0)284 175 3738

1.4. Emergency Telephone Number

Emergency medical information: 8am-10pm (seven days) contact National Poisons Information Centre, Beaumont Hospital, Dublin 9 DOV2NO, Ireland.
Telephone Number: +353 (0)1 809 2166

Leeds:	**Newry:**
Tel: +44 (0)113 270 3133	Tel: +44 (0)284 175 3738

1.4.1. Poison Information Centre Telephone Number

European emergency phone number: 112
UK: National Poisons Emergency Number : 0344 892 0111
Ireland: National Poisons Information Centre (NPIC)Telephone Healthcare Professionals : +353 (01) 809 2566. (24 hour service)Telephone Members of Public: +353 (01) 809 2166. (8.00 a.m. to 10.00 p.m. 7 days a week)

2. Hazards identification

2.1. Classification of the substance or mixture

Classification of the substance or mixture - GHS/CLP (n° 1272/2008)

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

Contains Styrene

Signal word Danger

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

Physical hazards

H226 - Flammable liquid and vapour

EU H -Phrases

EUH208 Contains phthalic anhydride, cobalt octoate - May produce an allergic reaction

Precautionary statements

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

P243 - Take action to prevent static discharges

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 person to fresh air and keep 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

No information available.

3. Composition/information on ingredients

3.1. Mixtures

Hazardous components

Chemical Name	EC-No	REACH Registration Number	CAS-No	Weight percent	GHS Classification
Styrene	202-851-5	01-2119457861-32	100-42-5	~ 48	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)
phthalic anhydride	201-607-5	01-2119457017-41	85-44-9	< 1	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Skin Sens. 1 (H317) Eye Dam. 1 (H318) Resp. Sens. 1 (H334) STOT SE 3 (H335)
cobalt octoate	205-250-6	01-2119524678-29	136-52-7	0.01 - < 0.1	Skin Sens. 1A (H317) Eye Irrit. 2 (H319) Repr. 2 (H361f) Aquatic Acute 1 (H400) Aquatic Chronic 3 (H412)

For the full text of the H-Statements mentioned in this Section, see Section 16

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

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

Notes to physician No information available

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Dry chemical, Foam, Carbon dioxide (CO_2), (closed systems)

Extinguishing Media Which Must not be Used for Safety Reasons

Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases

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 firefighters

Special protective equipment 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.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Personal precautions:

Remove all sources of ignition Heat, flames and sparks.

Ensure adequate ventilation

Take precautionary measures against static charges. 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

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

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 regulations (see section 13)

Use clean non-sparking tools to collect absorbed material

6.4. Reference to other sections

See section 8 for more information

See Section 12 for additional Ecological Information

7. Handling and 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 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

Technical measures/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

copper, Copper alloys, Bronze, Zinc

7.3. Specific end use(s)

Specific use(s)

No information available

8. Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational Exposure limits

Chemical Name	European Union	ACGIH OEL (Ceiling)	The United Kingdom	Ireland
Styrene 100-42-5	-	TLV-8h TWA: 20 ppm - 85 mg/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 85 mg/m3 STEL 40 ppm STEL 170 mg/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
cobalt octoate 136-52-7		0.02 mg/m³	STEL 0.3 mg/m3 TWA 0.1 mg/m3 Sen+	TWA 0.1 mg/m3 Sensitizer

Special hazards arising from the substance or mixture

8.1.2. Biological standards

Derived No Effect Level (DNEL)

Derived No Effect Level (DNEL)				
Styrene (100-42-5)				
Type	DNEL oral	DNEL dermal	DNEL inhalation	Remark
Workers - Long Term - Systemic effect		406 mg/Kg bw/day	85 mg/m3	
Workers - Acute Short Term - Local effect			306 mg/m3	
Workers - Acute Short term - Systemic effect			289 mg/m3	
General Population - Acute Short Term - Local effect			182.7 mg/m³	

General Population - Acute Short Term - Systemic effect			174.2 mg/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	Remark
Workers - Long Term - Systemic effect		10 mg/kg bw/day	32.2 mg/m3	
General Population - Long Term - Systemic effect	5 mg/kg bw/day	5 mg/kg bw/day	8.6 mg/m3	

cobalt octoate (136-52-7)				
Type	DNEL oral	DNEL dermal	DNEL inhalation	Remark
Workers - Long Term - Local effect			235.1 µg/m^3	
General Population - Long Term - Systemic effect	27.6 µg/kg bw/day			
General Population - Long Term - Local effect			37 µg/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)		

Exposure	Type	PNEC
Fresh water	PNEC Aqua	1 mg/L
Marine water	PNEC Aqua	0.1 mg/L
Intermittent use/release	PNEC Aqua	5.6 mg/L
	PNEC STP	10 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

cobalt octoate (136-52-7)		
Exposure	Type	PNEC
Fresh water	PNEC Aqua	0.6 µg/L
Marine water	PNEC Aqua	2.36 µg/L
STP microorganisms	PNEC STP	0.37 mg/L
Fresh water	PNEC Sediment	9.5 mg/kg sediment dw
Marine water	PNEC Sediment	9.5 mg/kg sediment dw
Terrestrial Compartment	PNEC Soil	10.9 mg/kg soil dw

8.2. Exposure controls

8.2.1. Occupational 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

8.2.2. Personal protective equipment

General Information Use personal protective equipment.

Respiratory protection Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)

If exposure limits are likely to be exceeded / In case of insufficient ventilation wear suitable respiratory equipment :

Breathing apparatus with filter Type A (Organic gases and vapours filter conforming to EN 14387 , APF 40 < 1 hour, APF 200 > 1 hour)

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 Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
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.

8.2.3. Environmental exposure controls

Environmental exposure controls: Do not allow material to contaminate ground water system.

9. SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Property	Values	Remark
Appearance	pink red	
Physical state	Liquid	
Particle size		no data available
Odour	Styrene	
Odour Threshold	0.15 ppm	Values related to styrene
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	Values related to styrene
Evapouration 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	1 kPa	25°C Values related to styrene
Vapour density	3.6	Values related to styrene
Density	1.12 g/cm3	25°C
Water solubility	Insoluble in water	
Partition coefficient: n-octanol/water	3	Values related to styrene
Autoignition temperature	490 °C	Values related to styrene
Decomposition temperature		no data available
Viscosity, kinematic	80 - 98 mm2/s	25°C
Viscosity, dynamic	90 - 110 mPa.s	25°C
Explosive properties		not applicable
Oxidizing properties		not applicable

9.2. Other information

Solubility in other solvents Soluble in most organic solvents

10. Stability and reactivity

10.1. Reactivity

Product may ignite and burn at temperatures exceeding the flash point

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

10.3.1. Hazardous reactions

In use, may form flammable/explosive vapour-air mixture.

10.3.2. Hazardous polymerisation

Polymerisation can occur.

10.4. Conditions to avoid

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

10.5. Incompatible materials

Strong oxidizing agents, Peroxides, Reducing agents

10.6. Hazardous decomposition products

Incomplete combustion and thermolysis produces potentially toxic gases such as carbon monoxide and carbon dioxide

11. Toxicological information

11.1. Information on toxicological effects

11.1.1. 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	Read-across (Analogy)
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	
cobalt octoate 136-	3129 mg/kg/bw (Rat)	> 2000 mg/kg bw		

52-7	OECD 425	(Rat) OECD 402		

Skin corrosion/irritation

Chemical Name	Skin corrosion/irritation	Read-across (Analogy)
Styrene 100-42-5	Irritating to skin in vivo assay rabbit	
phthalic anhydride 85-44-9	Irritating to skin in vivo assay rabbit OECD 404	
cobalt octoate 136-52-7	No skin corrosion in vitro study OECD 431 EU Method B. 40	

Serious Eye Damage/Eye Irritation

Chemical Name	Serious Eye Damage/Eye Irritation	Read-across (Analogy)
Styrene 100-42-5	Irritating to eyes in vivo assay rabbit	
phthalic anhydride 85-44-9	Irritating to eyes in vivo assay rabbit Draize Test	
cobalt octoate 136-52-7	Moderate eye irritation OECD 437 EU Method B.47 Irritating to eyes Rabbit OECD 405	

Respiratory or skin sensitisation May produce an allergic reaction.

Chemical Name	Respiratory or skin sensitisation	Read-across (Analogy)
Styrene 100-42-5	Does not cause skin sensitization Does not cause respiratory sensitization CSR	
phthalic anhydride 85-44-9	May cause sensitisation by inhalation and skin contact in vivo assay guinea pig OECD 406	
cobalt octoate 136-52-7	May cause sensitisation by skin contact in vivo assay mouse OECD 429	

11.1.2. Mutagenic Effects

In vitro study

Chemical Name	Ames test	Read-across (Analogy)
Styrene 100-42-5	Ambiguous In vitro gene mutation study in bacteria (S. typhimurium G46, TA1530, TA 1535, TA100, TA98, TA1538, TA 1537) OECD 471	
phthalic anhydride 85-44-9	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	
cobalt octoate 136-52-7	negative In vitro gene mutation study in bacteria (S. typhimurium TA 1535, TA 1537, TA 98, TA100 and TA 102) OECD 471	Cas N°: 68956-82-1, 14024-48-7

Chemical Name	In vitro Mammalian Cell Gene Mutation Test	Read-across (Analogy)
Styrene 100-42-5	Ambiguous In vitro gene mutation study in mammalian cells hamster OECD 476	
phthalic anhydride 85-44-9	negative In vitro gene mutation study in	

	mammalian cells hamster OECD 476	
cobalt octoate 136-52-7	negative In vitro gene mutation study in mammalian cells mouse OECD 476	Cas N°: 7440-48-4, 1308-06-1, 10124-43-3, 12016-80-7
Chemical Name	In vitro Mammalian Chromosome Aberration Test	Read-across (Analogy)
Styrene 100-42-5	positive Chromosome aberration test in vitro OECD 473 OECD 479	
phthalic anhydride 85-44-9	Ambiguous Chromosome aberration test in vitro hamster OECD 473	

In vitro assay

Chemical Name	**Unscheduled DNA Synthesis (UDS)**	**Read-across (Analogy)**
Styrene 100-42-5	negative mouse OECD 486 OECD 474	
cobalt octoate 136-52-7	negative rat OECD 474 OECD 475	Cas N°: 68956-82-1, 14024-48-7, 10026-24-1

11.1.3. Carcinogenicity

Carcinogenicity				
Styrene (100-42-5)				
Exposure routes	Method	Species	Dose	Evaluation
Inhalation	OECD 453	rat	NOAEC systemic (carcinogenicity) >= 4.34 mg/L air	negative

			(nominal)	
Inhalation	OECD 453	mouse	LOAEC (carcinogenicity) female/male = 0.09 - 0.18 mg/L air resp., NOAEC (carcinogenicity) male = 0.09 mg/L air	positive
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)				
Exposure routes	Method	Species	Dose	Evaluation
Oral	No information available	mouse	NOAEL (carcinogenicity, male) = 3570 mg/kg bw/day (72w) NOAEL (carcinogenicity, female) = 1785 mg/kg bw/day (72w)	negative
Oral	No information available	rat	NOAEL (carcinogenicity) = 1000 mg/kg bw/day (105w)	negative

11.1.4. Reproductive Toxicity

Reproductive toxicity				
Styrene (100-42-5)				
Exposure routes	Method	Species	Dose	Evaluation

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)	negative

phthalic anhydride (85-44-9)				
Exposure routes	Method	Species	Dose	Evaluation
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

cobalt octoate (136-52-7)				
Exposure routes	Method	Species	Dose	Evaluation

Oral	Read-across (Analogy) Cas N°: 7440-48-4 OECD 422	rat	NO(A)EL (P&F1) 28d = 30 mg/kg bw/day	positive

11.1.5. Developmental Toxicity – Suspected of damaging the unborn child

Developmental Toxicity				
Styrene (100-42-5)				
Exposure routes	Method	Species	Dose	Evaluation
Inhalation	No information available	rat	NOAEC/LOAEC (maternal toxicity + developemental toxicity) >50d = 1.08 - 2.15 mg/L air	positive
Inhalation	OECD 414	rat	LOAEC (maternal toxicity) 6-15d = 1.28 mg/L air	positive
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)				
Exposure routes	Method	Species	Dose	Evaluation
Oral	Read-across (Analogy) phthalic acid Cas	rat	NOAEL (maternal toxicity) = 1000 mg/kg	positive

	N° : 88-99-3		bw/day NOAEL (teratogenicity) = 1700 mg/kg bw/day	

cobalt octoate (136-52-7)				
Exposure routes	Method	Species	Dose	Evaluation
Oral	Read-across (Analogy) Cas N°: 7791-13-1 OECD 414	rat	NOAEL (maternal toxicity) 20d = 25 mg/kg bw/day NOAEL (developmental toxicity) 20d = 100 mg/kg bw/day	negative

Specific target organ toxicity - single exposure

May cause irritation of respiratory tract

Specific target organ toxicity - repeated exposure

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

STOT - repeated exposure				
Styrene (100-42-5)				
Exposure routes	Method	Species	Dose	Remarks

Inhalation	OECD 412	rat mouse	NOAEC male (28d) = 3.47 mg/L air NOAEC (ototoxicity) 28d = 2.13 mg/L air NOAEC (28d) = 0.181 mg/L air NOAEC (28d) = 0.688 mg/L air	
Inhalation	No information available	rat	NOAEC (nasal tract) = 0.85 mg/L air NOAEC (overall) = 2.13 mg/L air NOAEC (ototoxicity) = 0.85 mg/L air LOAEC (ototoxicity) = 3.41 mg/L air NOAEC (overall) = 2.13 mg/L air	
Oral	No information available	rat	NOAEL (toxicity) = 1000 mg/kg bw/day LOAEL (toxicity) = 2000 mg/kg bw/day	
Oral	No information available	mouse	NOAEL (toxicity) = 150 mg/kg bw /day LOAEL (toxicity) = 300 mg/kg bw /day	
Inhalation	OECD 453	rat	LOAEC local (toxicity) = 0.21 mg/L air	

phthalic anhydride (85-44-9)

Exposure routes	Method	Species	Dose	Remarks
Oral	No information available	rat	NOAEL = 1250 mg/kg bw/day LOAEL = 2500 mg/kg bw/day 7 weeks	
Oral	No information available	rat	NOAEL (105 weeks) = 500 mg/kg bw/day	
Oral	No information available	mouse	LOAEL (male) = 2340 mg/kg bw/day LOAEL (female) = 1717 mg/kg bw/day 72 weeks	

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

Other information: None

12. Ecological information

12.1. Toxicity

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

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 (Daphnia magna) OECD 202	LC50 (96h) = 4.02 - 10 mg/L (Pimephales promelas) OECD 203	EC (30min) = 500 mg/L (Activated sludge of a predominantly domestic sewage) OECD 209

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 (Pseusomonas putida), ISO 10712
cobalt octoate 136-52-7	EC50 (72h) = 144 µg Codiss./L (Pseudokirchneriella subcapitata) NOEC (72h) = 32.2 µg./L (Pseudokirchneriella subcapitata) LOEC (72h) = 52.7 µg Codiss./L (Pseudokirchneriella subcapitata) OECD 201		LC50 (96h) = 1.512 mg/L(Oncorhynchus mykiss) NOEC (96h) = 0.939 mg/L NOEC (96h) = 0.939 mg/L(Oncorhynchus mykiss) LOEC (96h) = 1.577 mg/L(Oncorhynchus mykiss) ASTM guideline (1996)	EC10 (30 min) = 3.73 mg/L (Activated sludge) EC50 (30 min) = 120 mg/L (Activated sludge) Read across with Cas N°: 7646-79-9 OECD 209

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 (Daphnia magna) EC50 (21d) = 1.88 mg/L (Daphnia magna) 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, lengh, weight, embryotoxicity) 60d = 10 mg/L, OECD 210	
cobalt octoate 136-52-7	EC50 (7d) = 90.1 µg./L (Lemna minor) NOEC (7d) = 3.0 µg/L (Lemna minor) LOEC (7d) = 8.8 µg/L (Lemna minor) OECD 221	NOECR (21d) = 60.8 µg./L (Daphnia magna) LC50 (21d) = 121.3 mg/L (Daphnia magna) LOECR (21d) = 93.3 µg Codiss./L (Daphnia magna) OECD 211		

Effects on terrestrial organisms - Component Information

Acute toxicity				
phthalic anhydride (85-44-9)				
Acute toxicity	Test Method	Species	Values	Remarks
plants		Lactuca sativa	EC50 (germination) = 731 mg/L	

Chronic toxicity				
Styrene (100-42-5)				
Chronic toxicity	Method	Species	Values	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

Chemical Name	Biodegradation	Evaluation
Styrene 100-42-5	87% (20d) similar to OECD 301D	Readily biodegradable
phthalic anhydride 85-44-9	68 % (10d), 74 % (30d) OECD 301 D	Readily biodegradable
cobalt octoate 136-52-7	60% (> 10d), OECD 301 B	Readily biodegradable

12.3. Bioaccumulative potential

Bioconcentration factor (BCF)		
Styrene (100-42-5)		
Method	Species	Bioconcentration factor (BCF)
Calculation method		74

phthalic anhydride (85-44-9)		
Method	Species	Bioconcentration factor (BCF)
Calculation method		3.16 - 3.4

Chemical Name	log Pow

Styrene 100-42-5	3
phthalic anhydride 85-44-9	1.6

12.4. Mobility in soil

Chemical Name	LogKoc	Koc
Styrene 100-42-5	2.55	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, bioaccumulating nor toxic (PBT).	This substance is not considered to be very persistent nor very bioaccumulating (vPvB).
phthalic anhydride 85-44-9	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).	This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

12.6. Other Adverse Effects

None Known

13. Disposal considerations

13.1. Waste treatment methods

Waste from 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.

14. Transport information

14.1. UN number

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

14.2. UN proper shipping name

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

UN1866, RESIN SOLUTION, 3, PG III

14.3. Transport hazard class(es)

ADR/RID
Hazard class 3
IMDG/IMO
Hazard class 3
ICAO/IATA
Hazard class 3
ADN
Hazard class 3

14.4. Packing group

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

14.5. Environmental hazards

ADR/RID No
IMDG/IMO No
Marine pollutant No
ICAO/IATA No
ADN No

14.6. Special precautions for user

ADR/RID
Classification Code F1
Tunnel restriction code (D/E)

Limited quantity 5 L

IMDG/IMO

EmS F-E, S-E

Limited quantity 5 L

ICAO/IATA

ERG Code 3L

Limited quantity 10 L

AND

Classification Code F1

Limited quantity 5 L

Ventilation VE01

Special precautions for users

No information available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Transport in bulk according to MARPOL 73/78 and the IBC Code not applicable

15. Regulatory information

Regulation (EC) No. 1907/2006 (REACH)
Regulation (EC) No. 1272/2008 (CLP)
Regulation (EU) No. 830/2015
Directive 88/642/EEC
Directive 98/24/EC
Directive 1999/92/EC
Directive 2012/18/EU

The mixture is subject to restrictions on use, see Annex XVII of the Regulation 1907/2006/EC (REACH): Column 1, n° 3; Column 1, n° 40.

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

European Union

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

National regulatory information: The United Kingdom
Avoid exceeding of the given occupational exposure limits (see section 8).

Ireland
Avoid exceeding of the given occupational exposure limits (see section 8).

15.2. Chemical safety assessment

Not applicable

16. Other information

16.1. Full text of H-Statements referred to under sections 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
H361d - Suspected of damaging the unborn child
H361f - Suspected of damaging fertility
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled
H400 - Very toxic to aquatic life
H412 - Harmful to aquatic life with long lasting effects
EUH208 - May produce an allergic reaction

Training Advice
Handle in accordance with good industrial hygiene and safety practice. To avoid risks to man and the environment, comply with the instructions for use.

Sources of key data used to compile the datasheet
ECHA

Former date 23-Aug-2019
Revision date 26-Nov-2018
Revision Note: SDS sections updated : 1 , 9

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet