

TRICURE 11C321G

Product Name:	TriCure 11C321G 1048014 Rev.2
Revision Date:	29-Aug-2023 According to Regulation (EC) No. 1907/2006

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

1.1. Product Identifier

Product Name: TriCure 11C321G
Chemical Name: Unsaturated Polyester Resin
Pure Substance/Mixture: Mixture

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

Identified Uses: (Low Styrene Emission) Polyester Resin

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 – (H315)
Serious Eye Damage/Eye Irritation	Category 2 – (H319)
Skin Sensitisation	Category 1 – (H317)
Reproductive Toxicity	Category 2 – (H361d)
Specific Target Organ Toxicity (Single Exposure)	Category 3 – (H335)
Specific target organ toxicity – repeated exposure	Category 1 – (H372)
Chronic Aquatic Toxicity	Category 3 – (H412)
Flammable liquids	Category 3 – (H226)

2.2. Label elements



Signal Word: Danger

Contains: Cobalt Octoate, Styrene

2.2.1. Hazard Statements

H315 – Causes skin irritation

H317 – May cause an allergic skin reaction

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

2.2.2. Physical Hazards

H226 – Flammable liquid and vapour

2.2.3. 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

PBT/vPvB see section 12.5

3. Composition/Information on Ingredients

3.1. Hazardous components

Chemical Name	EC-No	REACH Registration Number	CAS-No	Weight percent	GHS Classification	M-Factor (acute)	M-Factor (chronic)	Concentration limit (%)
Styrene	202-851-5	01-2119457861-32	100-42-5	42 - 47	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)			
Silica, amorphous, fumed, crystalline-free	231-545-4	01-2119379499-16	112945-52-5	< 1	-			
ethane-1,2-diol	203-473-3	01-2119456816-28	107-21-1	< 0.5	Acute Tox. 4 (H302) STOT RE 2 (H373)			
Silane, dichlorodimethyl-, reaction products with silica	271-893-4	No data available	68611-44-9	< 0.5	-			
cobalt octoate	205-250-6	01-2119524678-29	136-52-7	0.1 - < 0.3	Skin Sens. 1A (H317) Eye Irrit. 2 (H319) Repr. 1B (H360Fd) Aquatic Acute 1 (H400) Aquatic Chronic 3 (H412)	1		
Paraffin waxes and Hydrocarbon waxes	232-315-6	01-2119488076-30	8002-74-2	< 0.25	-			

Additional information Acute Toxicity Estimate See Section 11 for more information.

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

4. First Aid Measures

4.1. Other Hazards

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 cause sensitisation by skin contact

Inhalation: Harmful: danger of serious damage to health by prolonged exposure through inhalation Irritating to respiratory system.

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 (CO₂), (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**

6.1.1. For non-emergency personnel

Personal precautions:

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

6.1.2. 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

7.1.1. 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.

7.1.2. Prevention of fire and explosion

Keep away from open flames, hot surfaces and sources of ignition Empty containers may contain flammable or explosive vapours.

7.1.3. Hygiene measures

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

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)

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	-	ACGIH (2020): TLV-TWA: 10 ppm TLV-STEL/C: 20 ppm Notes: OTO, A3, BEI Critical effects: CNS and hearing impairment, URT irr, peripheral neuropathy visual disorders	STEL 250 ppm 1080 mg/m ³ TWA 100 ppm 430 mg/m ³	TWA 20 ppm TWA 85 mg/m ³ STEL 40 ppm STEL 170 mg/m ³
ethane-1,2-diol 107-21-1	TWA 20 ppm TWA 52 mg/m ³ STEL 40 ppm STEL 104 mg/m ³ S*	Ceiling: 100 mg/m ³	STEL 40 ppm 104 mg/m ³ STEL 30 mg/m ³ TWA 20 ppm TWA 52 mg/m ³ TWA 10 mg/m ³ Skin	STEL 40 ppm STEL 104 mg/m ³ Skin
cobalt octoate 136-52-7		0.02 mg/m ³	STEL 0.3 mg/m ³ TWA 0.1 mg/m ³ Sen+	TWA 0.1 mg/m ³ Sensitizer
Paraffin waxes and Hydrocarbon waxes 8002-		TWA 2 mg/m ³	STEL 6 mg/m ³ 2 mg/m ³	TWA 2 mg/m ³ STEL 6 mg/m ³

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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/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	

Silica, amorphous, fumed, crystalline-free (112945-52-5)				
Type	DNEL oral	DNEL dermal	DNEL inhalation	Remark
Workers - Long Term - Systemic effect			4 mg/m ³	

ethane-1,2-diol (107-21-1)				
Type	DNEL oral	DNEL dermal	DNEL inhalation	Remark
Workers - Long Term - Local effect			35 mg/m ³	
Workers - Long Term -		106 mg/kg		

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Systemic effect		bw/day		
General Population - Long Term - Local effect			7 mg/m ³	
General Population - Long Term - Systemic effect		53 mg/kg bw/day		

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	175 µg/kg bw/day			
General Population - Long Term - Local effect			37 µg/m ³	

8.1.3. 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

Silica, amorphous, fumed, crystalline-free (112945-52-5)		
Exposure	Type	PNEC
Secondary Poisoning	PNEC Oral	60000 mg/kg

ethane-1,2-diol (107-21-1)		
Exposure	Type	PNEC
Marine water	PNEC Aqua	1 mg/L
Fresh water	PNEC Aqua	10 mg/L
	PNEC STP	199.5 mg/L
Fresh water	PNEC Sediment	37 mg/kg sediment dw
Marine water	PNEC Sediment	3.7 mg/kg sediment dw
	PNEC Soil	1.53 mg/kg soil dw
cobalt octoate (136-52-7)		
Exposure	Type	PNEC
Fresh water	PNEC Aqua	0.62 µg/L
Marine water	PNEC Aqua	2.36 µg/L
STP microorganisms	PNEC STP	0.37 mg/L
Fresh water	PNEC Sediment	53.8 mg/kg sediment dw
Marine water	PNEC Sediment	69.8 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) / Type A(2)/P3 in combination with Particulates filter conforming to EN 143 , if exposed to dust.

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

Do not allow material to contaminate ground water system

9. Physical and Chemical Properties

9.1. Exposure Controls/Personal Protection

Property	Values	Remark
Physical state	Liquid	
Colour	Pink	
Appearance		No data available
Particle size		No data available
Odour	Pungent	
Odour Threshold	0.15 ppm	Values related to styrene

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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
Softening point		No data available
Boiling point	145 °C	Values related to styrene
Flash point	31 °C	Values related to styrene
Flammability		No data available
Flammability Limit in Air		
Upper	6.1%	Values related to styrene
Lower	1.1%	Values related to styrene
Vapour pressure	6.7 hPa	20°C Values related to styrene
Vapour density	3.6	(Air = 1.0) Values related to styrene
Density	1.1 g/cm ³	23°C
Specific Gravity		No data available
Bulk density		No data available
Water solubility	Insoluble in water	
Solubility in other solvents		No data available
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	818 – 1000 mm ² /s	23°C
Viscosity, dynamic	900 – 1100 mPas	23°C Brookfield Test Method

9.2. Other Information

Information with regards to physical hazard classes

Property	Values	Remark
Explosives		No data available
Flammable gases		No data available
Aerosols		No data available
Oxidising gases		No data available
Gases under pressure		No data available
Flammable liquids		No data available
Flammable solids		No data available
Pyrophoric liquids		No data available
Pyrophoric solids		No data available
Self-heating substances and mixtures		No data available
Substances and mixtures which, in contact with water, emit flammable gases		No data available
Oxidising liquids		No data available
Oxidising solids		No data available
Oxidising Properties		No data available
Organic peroxides		No data available
Corrosive to metals		No data available
Desensitised explosives		No data available
Other safety characteristics		
Sensitivity to Mechanical Impact		No data available
SAPT (self-accelerating polymerisation temperature)		No data available
Formation of explosible dust/air mixtures		No data available

Acid/alkaline reserve		No data available
Evaporation rate	0.49	(BuAc = 1) (Styrene)
Miscible		No data available
Conductivity		No data available
Corrosiveness		No data available
Gas group		No data available
Redox potential		No data available
Photocatalytic properties		No data available

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

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

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 hazard classes as defined in Regulation (EC) No 1272/2008

11.1.1. Inhalation

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

11.1.2. 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	
Silica, amorphous, fumed, crystalline-free 112945-52-5	> 5000 mg/kg bw (Rat) OECD 401	> 5000 mg/kg (Rabbit)	> 0.14 mg/L air (Rat) 4h (analytical) OECD 403	
ethane-1,2-diol 107-21-1	7712 mg/kg bw (Rat)	> 3500 mg/kg bw (Rabbit)	> 2.5 mg/L air (Rat) 6h	
Silane, dichlorodimethyl-, reaction products with silica	> 5000 mg/kg bw (Rat)			

68611-44-9				
cobalt octoate 136-52-7	3129 mg/kg/bw (Rat) OECD 425	> 2000 mg/kg bw (Rat) OECD 402		
Paraffin waxes and Hydrocarbon waxes 8002- 74-2	> 5000 mg/kg bw (Rat) OECD 420	> 2000 mg/kg bw (Rat) OECD 402		

11.1.3. Skin corrosion/irritation

Chemical Name	Skin corrosion/irritation	Read-across (Analogy)
Styrene 100-42-5	Irritating to skin in vivo assay rabbit	
Silica, amorphous, fumed, crystalline free 112945-52-5	No skin irritation rabbit OECD 404	
ethanol, 107-21-1	No skin irritation in vivo assay rabbit	
cobalt octoate 136-52-7	No skin corrosion in vitro study OECD 431 EU Method B. 40	
Paraffin waxes and Hydrocarbon waxes 8002-74-2	No skin irritation in vivo assay rabbit OECD 404	

11.1.4. 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	
Silica, amorphous, fumed, crystalline-free 112945-52-5	No eye irritation rabbit OECD 405	
ethane-1,2-diol 107-21-1	No eye irritation in vivo assay rabbit	
cobalt octoate 136-52-7	Moderate eye irritation OECD 437 EU Method B.47 Irritating to eyes rabbit OECD 405	

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Paraffin waxes and Hydrocarbon waxes 8002-74-2	No eye irritation in vivo assay rabbit OECD 405	
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11.1.5. Respiratory or skin sensitisation May cause sensitisation by skin contact

Chemical Name	Respiratory or skin sensitisation	Read-across (Analogy)
Styrene 100-42-5	Does not cause skin sensitization Does not cause respiratory sensitization CSR	
Silica, amorphous, fumed, crystalline-free 112945-52-5	Does not cause skin sensitization Does not cause respiratory sensitization	
ethane-1,2-diol	Does not cause skin sensitization	
107-21-1	in vivo assay	
	guinea pig	
	similar to	
	OECD 406	
cobalt octoate	May cause sensitisation by skin contact	
136-52-7	in vivo assay	
	mouse	
	OECD 429	
Paraffin waxes and Hydrocarbon waxes	Does not cause skin sensitization	
8002-74-2	in vivo assay	
	guinea pig	
	OECD 406	
	EU Method B.6	

11.1.6. 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	
Silica, amorphous, fumed, crystalline-free 112945-52-5	negative In vitro gene mutation study in bacteria OECD 471	
ethane-1,2-diol 107-21-1	negative In vitro gene mutation study in bacteria (S. typhimurium TA 1535, TA 1537, TA 98 and TA 100) (Escherichia coli WP2 uvrA) OECD 471 EU Method B.13/14 EPA OPPTS 870.5100	
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
Paraffin waxes and Hydrocarbon waxes 8002-74-2	negative In vitro gene mutation study in bacteria (S. typhimurium TA 1535, TA 1537, TA 98 and TA 100) (Escherichia coli WP2 uvrA) OECD 471	

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	

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Silica, amorphous, fumed, crystalline-free 112945-52-5	negative In vitro gene mutation study in mammalian cells OECD 476	
ethane-1,2-diol 107-21-1	negative In vitro gene mutation study in mammalian cells mouse	
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
Paraffin waxes and Hydrocarbon waxes 8002-74-2	negative In vitro gene mutation study in mammalian cells mouse OECD 476	
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	
Silica, amorphous, fumed, crystalline-free 112945-52-5	negative Chromosome aberration test in vitro OECD 473	
ethane-1,2-diol 107-21-1	negative Chromosome aberration test in vitro hamster OECD 473	
Paraffin waxes and Hydrocarbon waxes 8002-74-2	negative Chromosome aberration test in vitro hamster similar to OECD 473	

In Vivo Assay

Chemical Name	Unscheduled DNA Synthesis (UDS)	Read-across (Analogy)
Styrene 100-42-5	negative mouse OECD 486 OECD 474	
Silica, amorphous, fumed, crystalline-free 112945-52-5	negative rat	
ethane-1,2-diol 107-21-1	negative rat	
cobalt octoate 136-52-7	negative rat OECD 474 OECD 475	Cas N°: 68956-82-1, 14024-48-7, 10026-24-1
Paraffin waxes and Hydrocarbon waxes 8002-74-2	negative mouse similar to OECD 474	

11.1.7. Carcinogenicity

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

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Oral	No information available	mouse	LOAEL (carcinogenicity) = 150 mg/kg bw /day	positive
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Silica, amorphous, fumed, crystalline-free (112945-52-5)				
Routes of Exposure	Method	Species	Dose	Evaluation
Oral	OECD 453	rat	NOAEL = 1800 - 3200 mg/kg bw/day	negative

ethane-1,2-diol (107-21-1)				
Routes of Exposure	Method	Species	Dose	Evaluation
Oral	No information available	rat	NOAEL (carcinogenicity) 24 monhs = 1000 mg/kg diet	negative

Paraffin waxes and Hydrocarbon waxes (8002-74-2)				
Routes of Exposure	Method	Species	Dose	Evaluation
Dermal		mouse	NOEL (carcinogenicity) = 128 mg/kg bw/day	negative

11.1.8. Reproductive toxicity

Reproductive toxicity				
Styrene (100-42-5)				
Routes of Exposure	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 =	positive

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			200 - 400 mg/kg bw/day	
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

Silica, amorphous, fumed, crystalline-free (112945-52-5)				
Routes of Exposure	Method	Species	Dose	Evaluation
Oral	OECD 415	rat	NOAEL = 497 mg/kg bw/day	negative

ethane-1,2-diol (107-21-1)				
Routes of Exposure	Method	Species	Dose	Evaluation
Oral	No information available	mouse	NOEL (p) = 1000 mg/kg bw/day NOEL (F1) = 1000 mg/kg bw/day 18 weeks	negative
Oral	No information available	rat	NOAEL (parental and offspring) 3 generations > 1000 mg/kg bw/day	negative

cobalt octoate (136-52-7)				
Routes of Exposure	Method	Species	Dose	Evaluation
Oral	Read-across (Analogy) Cas N°: 7440-48-4 OECD	rat	NO(A)EL (P&F1) 28d = 30 mg/kg bw/day	positive

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Paraffin waxes and Hydrocarbon waxes (8002-74-2)				
Routes of Exposure	Method	Species	Dose	Evaluation
Oral	OECD 421	rat	NOAEL (p/ reproductive performance) $\geq$ 1000 mg/kg bw/day NOAEL Neonatal (F1) $\geq$ 1000 mg/kg bw/day Read across with : Chevron 100 Neutral	negative

11.1.9. Developmental Toxicity

Suspected of damaging the unborn child.

Developmental Toxicity				
Styrene (100-42-5)				
Routes of Exposure	Method	Species	Dose	Evaluation
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	positive
Inhalation	OECD 414	rat	NOAEC (developmental toxicity) 6-15d $\geq$ 2.56 mg/L air	negative
Inhalation	OECD 414	rabbit	NOAEC (maternal	negative

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			toxicity + developmental toxicity) 6-18d = 2.56 mg/L air	
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Silica, amorphous, fumed, crystalline-free (112945-52-5)				
Routes of Exposure	Method	Species	Dose	Evaluation
Oral	OECD 414	rat	NOAEL (maternal toxicity) = 1350 mg/kg bw/day NOAEL (teratogenicity) = 1350 mg/kg bw/day	negative

ethane-1,2-diol (107-21-1)				
Routes of Exposure	Method	Species	Dose	Evaluation
Oral	No information available	rat	NOAEL (maternal toxicity) = 1000 mg/kg bw/day NOAEL (developmental toxicity) = 500 mg/kg bw/day 6-15d	positive

Paraffin waxes and Hydrocarbon waxes (8002-74-2)				
Routes of Exposure	Method	Species	Dose	Evaluation
Dermal	OECD 414	rat	LOAEL (maternal toxicity) = 125 mg/kg bw/day NOAEL (teratogenicity) >= 2000 mg/kg bw/day Read across with : 100 SUS solvent	negative

			refined base oil	
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11.1.10. Specific target organ toxicity Single Exposure

May cause irritation of respiratory tract

11.1.11. 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)				
Routes of Exposure	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) =	

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			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	

Silica, amorphous, fumed, crystalline-free (112945-52-5)				
Routes of Exposure	Method	Species	Dose	Remarks
Oral	OECD 408	rat	NOEL (highest dose) 4000 <= 4500 mg/kg bw/day 90d	
Inhalation	OECD 413	rat	NOEC = 1.3 mg/m ³ air NOEC < 1.3 mg/m ³ air 90d	
Dermal	No information available	rabbit	NOAEL >= 10000 mg/kg bw/day	

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ethane-1,2-diol (107-21-1)				
Routes of Exposure	Method	Species	Dose	Remarks
Oral	similar to OECD 407	rat	NOAEL (33d) = 200 mg/kg bw/day	
Dermal	OECD 410	dogs	NOAEL (4 weeks) = 2200 - 4400 mg/kg bw/day	
Oral	similar to OECD 408	rat	NOEL (16 weeks) = 150 mg/kg bw/day	
Oral	similar to OECD 452	rat	NOAEL (12 months) = 150 mg/kg bw/day	

cobalt octoate (136-52-7)				
Routes of Exposure	Method	Species	Dose	Remarks
Oral	Read-across (Analogy) cobalt dichloride hexahydrate OECD 408	rat	NOAEL (90d) = 3 mg/kg bw/day	

Paraffin waxes and Hydrocarbon waxes (8002-74-2)				
Routes of Exposure	Method	Species	Dose	Remarks
Dermal	Read-across (Analogy) Cas N°: 64742-52-5 OECD 410	rabbit	NOAEL (28d) = 1000 mg/kg bw/day	
Oral	OECD 408	rat	NOAEL (Low melting point wax) = 1.5 mg/kg bw/day NOAEL (High melting point and high sulphur wax) =	

			1500 mg/kg bw/day 90d	
Dermal	Read-across (Analogy): Lubricant Base Oils OECD 411	rat	NOAEL (13 weeks) > 2000 mg/kg bw/day	
Dermal	Read-across (Analogy): MRD- 87-016 similar to OECD 453	mouse	NOAEL (male) 24 months >= 150 mg/kg bw/day	

11.1.12. Aspiration hazard

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

11.2. Information on other hazards

- Endocrine disrupting properties: No information available
- 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

12.1.1. 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	EC50 (72h) = 4.9 mg/L (Pseudokirchnerella)	EC50 (48h) = 4.7 mg/L (Daphnia magna)	LC50 (96h) = 4.02 - 10 mg/L (Pimephales)	EC (30min) = 500 mg/L (Activated sludge of a

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	subcapitata) EPA OTS 797.1050	NOEC = 1.9 mg/L (Daphnia magna) OECD 202	promelas) OECD 203	predominantly domestic sewage) OECD 209
Silica, amorphous, fumed, crystalline- free 112945-52-5		EL50 (24h) >= 1000 mg/L (Daphnia magna) OECD 202	LC50 (96h) > 10000 mg/L (Brachydanio rerio) OECD 203	
ethane-1,2-diol 107- 21-1	EC50 (96h) = 3536 mg/L (greenn algae), Chronic values (ChV) = 479 mg/L EPA 600/9-78-018, 1978	EC50 (48h) > 100 mg/L (Daphnia magna) OECD 202	LC50 (96h) = 72860 mg/L (Pimephales promelas)	EC20 (30min) > 1995 mg/L (Activated sludge, domestic) ISO 8192
cobalt octoate 136- 52-7	EC50 (72h) = 144 µg Codiss./L (Pseudokirchneriell a subcapitata) NOEC (72h) = 32.2 µg./L (Pseudokirchneriell a subcapitata) LOEC (72h) = 52.7 µg Codiss./L (Pseudokirchneriell a subcapitata) OECD 201		LC50 (96h) = 1.512 mg/L (Oncorhynchus mykiss) NOEC (96h) = 0.939 mg/L (Oncorhynchus mykiss) LOEC (96h) = 1.577 mg/L (Oncorhynchus mykiss) ASTM guideline (1996)	EC10 (30 min) = 3.73 mg/L (Activated sludge) EC50 (30 min) = 120 mg/L (Activated sludge) Read across with Cas N°: 7646-79-9 OECD 209
Paraffin waxes and Hydrocarbon waxes 8002-74-2	NOEL (72h) >= 100 mg/L (Pseudokirchnerella subcapitata), Read across with : N100DW OECD 201	LL50 (48h) > 1000 mg/L (Daphnia magna) QSAR	LL50 (96h) > 1000 mg/L (Oncorhynchus mykiss) QSAR	LL50 (40h) > 1000 mg/L (Tetrahymena pyriformis) NOEL (40h) >= 1000 mg/L (Tetrahymena pyriformis) QSAR

12.1.2. 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		
ethane-1,2-diol 107-21-1		EC50 (21d) = 33911 mg/L (Daphnia magna) NOEC > 15000 mg/L (Daphnia magna) ASTM	NOEC (weight) 7d = 15380 mg/L (Pimephales promelas) IC25 (7d) = 22520 mg/L (Pimephales promelas) NOEC (mortality) 7d = 32000 mg/L (Pimephales promelas) EPA 600/4-89/001	
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		
Paraffin waxes and Hydrocarbon waxes 8002-74-2		NOEL (21d) >= 1000 mg/L (Daphnia magna) QSAR	NOEL (28d) >= 1000 mg/L (Oncorhynchus mykiss) QSAR	

12.1.3. Effects on terrestrial organisms – Component Information

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
ethane-1,2-diol 107-21-1	90 - 100 % (10d) OECD 301A	Readily biodegradable
cobalt octoate 136-52-7	60% (> 10d), OECD 301 B	Readily biodegradable
Paraffin waxes and Hydrocarbon waxes 8002-74-2	31 % (28d) OECD 301F Read across with : MRD-94-981	Inherently biodegradable.

12.3. Bio-accumulative potential

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

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Calculation method		74
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Chemical Name	log Pow
Styrene 100-42-5	3
ethane-1,2-diol 107-21-1	-1.36

12.4. Mobility in Soil

Chemical Name	LogKoc	Koc
Styrene 100-42-5	2.55	352
ethane-1,2-diol 107-21-1	0	1

12.5. Results in 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).
Silica, amorphous, fumed, crystalline-free 112945-52-5	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).
ethane-1,2-diol 107-21-1	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).
Paraffin waxes and Hydrocarbon waxes 8002-74-2	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. Endocrine disrupting Properties:

No information available

12.7. Other Adverse Effects:

None known

13. Disposal Considerations

13.1. 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

13.2. Contaminated Packaging

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

13.3. 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 or ID number

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

14.2. UN number or ID number

- 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

ADN

- Classification Code F1
- Limited quantity 5 L
- ventilation VE01

Special precautions for users: No information available
Maritime transport in bulk according to IMO instruments

Transport in bulk according to Annex II of MARPOL and the IBC Code not applicable

15. Regulatory Information

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

Regulation (EC) No. 1907/2006 (REACH)

Regulation (EC) No. 1272/2008 (CLP)

Regulation (EU) No. 2020/878

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.

European Union

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

Chemical Safety Assessment Yes

Exposure scenario Relevant information for risk control are communicated in the form of exposure scenario attached to the safety data sheet.

16. Other Information

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

H319 - Causes serious eye irritation

H332 - Harmful if inhaled

H335 - May cause respiratory irritation

H360Fd - May damage fertility. Suspected of damaging the unborn child

H361d - Suspected of damaging the unborn child

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

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 25-Nov-2022

Revision date 29-Aug-2023

Revision Note: SDS sections updated: 1

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