



MATERIAL SAFETY DATA SHEET

TRIROOF STANDARD DARK GREY TOPCOAT

Product Name:	TriRoof Standard Dark Grey Topcoat 1152511 Rev.3
Revision Date:	05-Sep-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:	TriRoof Standard Dark Grey Topcoat
Chemical Name:	Gel Coat Polyester for Composites
Pure Substance/Mixture:	Mixture

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

To form a protective and decorative layer for GRP composites. Contact us before using for food contact application.



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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

Leeds: Tel: +44 (0)113 270 3133 (office hours 9-5pm)

Newry: Tel: +44 (0)284 175 3738 (office hours 9-5pm)

UK: National Poisons Emergency Number: 0344 892 0111 I (for healthcare professionals use only). NHS public service number NHS 111.

Ireland: Emergency medical information: 8am-10pm (7 days) contact National Poisons Information Centre, Beaumont Hospital, Dublin 9 DOV2NO, Ireland. 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)
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: Styrene

2.2.1. 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

2.2.2. 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. Mixtures

Hazardous Components

Chemical Name	EC-No	REACH Registration Number	CAS-No	Weight percent	GHS Classification	M- Factor (acute)	M-Factor (chronic)	Concentr ation limit (%)

Styrene	202-851-5	01-2119457861-32	100-42-5	30 - 35	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 RE1 (H372) Aquatic Chronic 3 (H412)			
Talc	238-877-9	01-2120140278-58	14807-96-6	4 - 7	-			
Silica, amorphous, fumed, crystalline-free	231-545-4	01-2119379499-16	112945-52-5	4 - 7	-			
Titanium dioxide	236-675-5	01-2119489379-17	13463-67-7	3 - 6	-			
phthalic anhydride	201-607-5	01-2119457017-41	85-44-9	0.1 - < 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)			
(2-methoxymethyl ethoxy)propanol	252-104-2	01-2119450011-60	34590-94-8	0.1 - < 1	-			
Paraffin waxes and Hydrocarbon waxes	232-315-6	01-2119488076-30	8002-74-2	0.1 - < 1	-			
Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	919-446-0	01-2119458049-33	-	0.1 - < 0.25	Flam. Liq. 3 (H226) Asp. Tox. 1 (H304) STOT SE 3 (H336) STOT RE1 (H372) Aquatic Chronic 2 (H411) (EUH066)			
Diiron trioxide	215-168-2	01-2119457614-35	1309-37-1	0.1 - < 1	-			

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. 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
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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

Notes to physician	No information available
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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 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.
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**

Methods for 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 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.



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Materials to avoid Strong oxidizing agents, Catalyst, 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 Control 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 STEL 1080 mg/m ³ TWA 100 ppm TWA 430 mg/m ³	TWA 20 ppm TWA 85 mg/m ³ STEL 40 ppm STEL 170 mg/m ³
Talc 14807-96-6		TWA 2 mg/m ³	STEL 3 mg/m ³ TWA 1 mg/m ³	TWA 10 mg/m ³ TWA 0.8 mg/m ³
Titanium dioxide 13463-67-7		TWA 10 mg/m ³	STEL 30 mg/m ³ STEL 12 mg/m ³ TWA 10 mg/m ³ TWA 4 mg/m ³	TWA 10 mg/m ³ TWA 4 mg/m ³
phthalic anhydride 85-44-9		TWA 1 ppm	STEL 12 mg/m ³ TWA 4 mg/m ³ Sen+	TWA 4 mg/m ³ STEL 12 mg/m ³ Sensitizer
(2-methoxymethyl)propyl alcohol	TWA 50 ppm TWA 308 mg/m ³ S*	TWA 100 ppm	STEL 150 ppm STEL 924 mg/m ³ TWA 50 ppm TWA 308 mg/m ³ Skin	TWA 50 ppm TWA 308 mg/m ³ Skin

34590-94-8				
Paraffin waxes and Hydrocarbon waxes 8002-74-2		TWA 2 mg/m ³	STEL 6 mg/m ³ TWA 2 mg/m ³	TWA 2 mg/m ³ STEL 6 mg/m ³
Diiron trioxide 1309-37-1		TWA 5 mg/m ³	We are not aware of any national exposure limit.	We are not aware of any national exposure limit.
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

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	

Talc (14807-96-6)				
Type	DNEL oral	DNEL dermal	DNEL inhalation	Remark
Workers - Acute Short term - Systemic effect			2.16 mg/m ³	
Workers - Acute Short Term - Local effect			3.6 mg/m ³	
Workers - Long Term - Systemic effect		43.2 mg/kg bw/day	2.16 mg/m ³	
Workers - Long Term - Local effect		4.54 mg/cm ²	3.6 mg/m ³	
General Population - Acute Short Term - Systemic effect			1.08 mg/m ³	

General Population - Acute Short Term - Local effect			1.8 mg/m ³	
General Population - Long Term - Systemic effect	160 mg/kg bw/day	21.6 mg/kg bw/day	1.08 mg/m ³	
General Population - Long Term - Local effect		2.27 mg/cm ²	1.8 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	

Titanium dioxide (13463-67-7)				
Type	DNEL oral	DNEL dermal	DNEL inhalation	Remark
Workers - Long Term - Local effect			10 mg/m ³	
General Population - Long Term - Systemic effect	700 mg/kg bw/day			

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/m ³	
General Population - Long Term - Systemic effect	5 mg/kg bw/day	5 mg/kg bw/day	8.6 mg/m ³	

(2-methoxymethylethoxy)propanol (34590-94-8)				
Type	DNEL oral	DNEL dermal	DNEL inhalation	Remark
Workers - Long Term - Systemic effect		283 mg/kg bw/day	308 mg/m ³	
General Population - Long Term - Systemic effect	36 mg/kg bw/day	121 mg/kg bw/day	37.2 mg/m ³	

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%) (-)				
Type	DNEL oral	DNEL dermal	DNEL inhalation	Remark
Workers - Long Term - Systemic effect		21 mg/kg bw/day	330 mg/m ³	
General Population - Long Term - Systemic effect	21 mg/kg bw/day	12 mg/kg bw/day	71 mg/m ³	

Diiron trioxide (1309-37-1)				
Type	DNEL oral	DNEL dermal	DNEL inhalation	Remark
Workers - Long Term - Systemic effect			10 mg/m ³	

Workers - Long Term - Local effect			10 mg/m³	
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cobalt octoate (136-52-7)				
Type	DNEL oral	DNEL dermal	DNEL inhalation	Remark
Workers - Long Term - Local effect			235.1 µg/m³	
General Population - Long Term - Systemic effect	175 µg/kg bw/day			
General Population - Long Term - Local effect			37 µg/m³	

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

Talc (14807-96-6)		
Exposure	Type	PNEC
Marine water	PNEC Aqua	141.26 mg/L
Fresh water	PNEC Aqua	597.97 mg/L
Marine water	PNEC Sediment	3.13 mg/kg sediment dw
Fresh water	PNEC Sediment	31.33 mg/kg sediment dw

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

Titanium dioxide (13463-67-7)		
Exposure	Type	PNEC
Fresh water	PNEC Aqua	0.184 mg/L
Marine water	PNEC Aqua	0.0184 mg/L
Intermittent use/release	PNEC Aqua	0.193 mg/L
	PNEC STP	100 mg/L

Fresh water	PNEC Sediment	1000 mg/kg sediment dw
Marine water	PNEC Sediment	100 mg/kg sediment dw
	PNEC Soil	100 mg/kg soil dw

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

(2-methoxymethylethoxy)propanol (34590-94-8)		
Exposure	Type	PNEC
Marine water	PNEC Aqua	1.9 mg/L
Fresh water	PNEC Aqua	19 mg/L
Intermittent use/release	PNEC Aqua	190 mg/L
	PNEC STP	4168 mg/L
Fresh water	PNEC Sediment	70.2 mg/kg sediment dw
Marine water	PNEC Sediment	7.02 mg/kg sediment dw
	PNEC Soil	2.74 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

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
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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

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

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Property	Values	Remark
Physical state	Liquid	
Colour	Variable (This Data Sheet includes all the colours)	
Appearance		No data available
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
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 - 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 - 1.4 g/cm ³	20°C
Specific Gravity		No data available
Bulk density		No data available
Water solubility	Insoluble in water	
Solubility in other solvents	Soluble in most organic solvents	
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	9091 - 27273 mm ² /s	20°C
Viscosity, dynamic	10000 - 30000 mPa.s	20°C

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

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

Reactivity

Product may ignite and burn at temperatures exceeding the flash point

10.2. Chemical stability

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

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, Catalyst, 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

11. Toxicological 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	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	
Talc 14807-96-6	> 5000 mg/kg bw (Rat) OECD 423	> 2000 mg/kg bw (Rat) OECD 402		

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	
Titanium dioxide 13463-67-7	> 5000 mg/kg bw (Rat) OECD 425, EPA OPPTS 870.1100		> 6,82 mg/L air (Rat) 4h No guideline followed	
phthalic anhydride 85-44-9	1530 mg/kg bw (Rat)	> 3160 mg/kg bw (Rabbit)	> 2.14 mg/L (Rat) 4h OECD 403	
(2-methoxymethyl)propanol 34590-94-8	> 5000 mg/kg bw (Rat) Similar to OECD 401	9510 mg/kg bw (Rabbit) 24h Similar to OECD 402	LC0 (7h) > 275 ppm (1667 mg/m³) (Rat) Similar to OECD 403	
Paraffin waxes and Hydrocarbon waxes 8002-74-2	> 5000 mg/kg bw (Rat) OECD 420	> 2000 mg/kg bw (Rat) OECD 402		
Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	> 15000 mg/kg bw (Rat) Similar to OECD 401		> 13.1 mg/L air (Rat) 4h Similar to OECD 403	
Diiron trioxide 1309-37-1	> 5000 mg/kg bw (Rat) EU Method B.1		5.05 mg/L air (Rat) 4h OECD 403	
cobalt octoate 136-52-7	3129 mg/kg/bw (Rat) OECD 425	> 2000 mg/kg bw (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	
Talc 14807-96-6	No skin irritation in vivo assay in vitro study rabbit OECD 404 EU Method B.46	
Silica, amorphous, fumed, crystalline-free 112945-52-5	No skin irritation rabbit OECD 404	
Titanium dioxide 13463-67-7	No skin irritation in vivo assay rabbit OECD 404 EPA OPPTS 870.2500	

phthalic anhydride 85-44-9	Irritating to skin in vivo assay rabbit OECD 404	
(2-methoxymethylethoxy)propanol 34590-94-8	No skin irritation in vivo assay rabbit similar to OECD 404	
Paraffin waxes and Hydrocarbon waxes 8002-74-2	No skin irritation in vivo assay rabbit OECD 404	
Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	No skin irritation in vivo assay rabbit OECD 404	
Diiron trioxide 1309-37-1	No skin irritation 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	
Talc 14807-96-6	No eye irritation in vivo assay (rabbit) OECD 405	
Silica, amorphous, fumed, crystalline-free 112945-52-5	No eye irritation rabbit OECD 405	
Titanium dioxide 13463-67-7	No eye irritation in vivo assay rabbit OECD 405 EU Method B.5 EPA OPPTS 870.2400	
phthalic anhydride 85-44-9	Irritating to eyes in vivo assay rabbit Draize Test	
(2-methoxymethylethoxy)propanol 34590-94-8	No eye irritation in vivo assay	
Paraffin waxes and Hydrocarbon waxes 8002-74-2	No eye irritation in vivo assay rabbit OECD 405	
Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	No eye irritation in vivo assay (rabbit) OECD 405	
Diiron trioxide 1309-37-1	No eye irritation in vivo assay rabbit OECD 405	

cobalt octoate 136-52-7	Moderate eye irritation OECD 437 EU Method B.47 Irritating to eyes rabbit OECD 405	
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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	
Talc 14807-96-6	Does not cause skin sensitization in vivo assay guinea pig OECD 406	
Silica, amorphous, fumed, crystalline-free 112945-52-5	Does not cause skin sensitization Does not cause respiratory sensitization	
Titanium dioxide 13463-67-7	Does not cause skin sensitization in vivo assay guinea pig OECD 406 EU Method B.6 EPA OPP 81-6 mouse similar to OECD 429	
phthalic anhydride 85-44-9	May cause sensitisation by inhalation and skin contact in vivo assay guinea pig OECD 406	
(2-methoxymethylethoxy)propanol 34590-94-8	Does not cause skin sensitization in vivo assay	
Paraffin waxes and Hydrocarbon waxes 8002-74-2	Does not cause skin sensitization in vivo assay guinea pig OECD 406 EU Method B.6	
Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	Does not cause skin sensitization in vivo assay guinea pig OECD 406	
cobalt octoate 136-52-7	May cause sensitisation by skin contact in vivo assay mouse OECD 429	

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	
Talc 14807-96-6	negative In vitro gene mutation study in bacteria Salmonella sp. similar to OECD 471 EU Method B.13/14	
Silica, amorphous, fumed, crystalline-free 112945-52-5	negative In vitro gene mutation study in bacteria OECD 471	
Titanium dioxide 13463-67-7	negative In vitro gene mutation study in bacteria (S. typhimurium TA 1535, TA 1537, TA 98, TA100 and TA 102) 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	
(2-methoxymethylethoxy)propanol 34590-94-8	negative In vitro gene mutation study in bacteria (Escherichia coli WP2 uvrA) similar to OECD 471	
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	
Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	negative In vitro gene mutation study in bacteria (S. typhimurium TA 1535, TA 1537, TA 98, TA 100, TA 1538) similar to OECD 471	
Diiron trioxide 1309-37-1	negative In vitro gene mutation study in bacteria (S. typhimurium TA 1535, TA 1537, TA 98 and TA 100) (Escherichia coli WP2 uvrA)	Cas N° : 51274-00-1

	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 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	
Silica, amorphous, fumed, crystalline-free 112945-52-5	negative In vitro gene mutation study in mammalian cells OECD 476	
Titanium dioxide 13463-67-7	negative In vitro gene mutation study in mammalian cells mouse OECD 476	
phthalic anhydride 85-44-9	negative In vitro gene mutation study in mammalian cells hamster OECD 476	
(2-methoxymethylethoxy)propanol 34590-94-8	negative In vitro gene mutation study in mammalian cells rat similar to OECD 482	
Paraffin waxes and Hydrocarbon waxes 8002-74-2	negative In vitro gene mutation study in mammalian cells mouse OECD 476	
Diiron trioxide 1309-37-1	negative In vitro gene mutation study in mammalian cells hamster OECD 476	Cas N° : 1317-61-9
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	
Talc 14807-96-6	negative Chromosome aberration test in vitro rat similar to OECD 473 EU Method B.10	
Silica, amorphous, fumed, crystalline-free 112945-52-5	negative Chromosome aberration test in vitro OECD 473	
Titanium dioxide 13463-67-7	negative Chromosome aberration test in vitro hamster OECD 473	
phthalic anhydride 85-44-9	Ambiguous Chromosome aberration test in vitro hamster OECD 473	
(2-methoxymethylethoxy)propanol 34590-94-8	negative Chromosome aberration test in vitro hamster similar to OECD 473	
Paraffin waxes and Hydrocarbon waxes 8002-74-2	negative Chromosome aberration test in vitro hamster similar to OECD 473	
Hydrocarbons, C9-C12, n- alkanes, isoalkanes, cyclics, aromatics (2-25%)	negative Chromosome aberration test in vitro similar to OECD 473	
Diiron trioxide 1309-37-1	negative Chromosome aberration test in vitro hamster OECD 473	Cas N° : 1317-61-9

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	
Titanium dioxide 13463-67-7	negative rat OECD 474	

Paraffin waxes and Hydrocarbon waxes 8002-74-2	negative mouse similar to OECD 474	
Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	negative mouse similar to OECD 474 OECD 475	
Diiron trioxide 1309-37-1	negative rat OECD 489	
cobalt octoate 136-52-7	negative rat OECD 474 OECD 475	Cas N°: 68956-82-1, 14024-48-7, 10026-24-1

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
Oral	No information available	mouse	LOAEL (carcinogenicity) = 150 mg/kg bw /day	positive

Talc (14807-96-6)				
Routes of Exposure	Method	Species	Dose	Evaluation
Oral	OECD 453	rat	NOAEL (101d) = 100 mg/kg bw/day	negative
Inhalation	OECD 453	mouse	NOAEC (104 weeks) = 6-18 mg/m ³ air	negative
Inhalation	OECD 453	rat	NOAEC = 6-18 mg/m ³ air	negative

Silica, amorphous, fumed, crystalline-free (112945-52-5)				
Routes of Exposure	Method	Species	Dose	Evaluation
Oral	OECD 453	rat	NOAEL = 1800 - 3200	negative

			mg/kg bw/day	
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phthalic anhydride (85-44-9)				
Routes of Exposure	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

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

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%) (-)				
Routes of Exposure	Method	Species	Dose	Evaluation
Inhalation	similar to OECD 453	rat	NOAEC (female) >= 2200 mg/m³ air NOAEC (male) = 138 mg/m³ air	negative

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 = 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	negative

			air LOAEC (F2) = 0.64 mg/L air (70d)	
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Talc (14807-96-6)				
Routes of Exposure	Method	Species	Dose	Evaluation
Oral	similar to OECD 416	rabbit	NOAEL (reproduction & F1) > 900 mg/kg bw/day	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

phthalic anhydride (85-44-9)				
Routes of Exposure	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

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

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%) (-)				
Routes of Exposure	Method	Species	Dose	Evaluation

Inhalation	similar to OECD 421	rat	NOAEC (F1) = 1720 mg/m ³	negative
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cobalt octoate (136-52-7)				
Routes of Exposure	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

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 >= 2.56 mg/L air	negative
Inhalation	OECD 414	rabbit	NOAEC (maternal toxicity + developmental toxicity) 6-18d = 2.56 mg/L air	negative

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

Titanium dioxide (13463-67-7)				
Routes of Exposure	Method	Species	Dose	Evaluation
Oral	OECD 414	rat	NOAEL (maternal & developmental toxicity) 20d = 1000 mg/kg bw/day	negative

(2-methoxymethylethoxy)propanol (34590-94-8)				
Routes of Exposure	Method	Species	Dose	Evaluation
Inhalation	EPA OTS 798.4350	rat	NOAEL (maternal tox/teretogenicity) 6-15d = 300 ppm	negative

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 refined base oil	negative

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%) (-)				
Routes of Exposure	Method	Species	Dose	Evaluation
Inhalation	similar to OECD 414	rat	NOAEL (maternal toxicity) >= 5220 mg/m³ air NOAEC (developmental Toxicity) >= 5220 mg/m³ air	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)				
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) = 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	

Titanium dioxide (13463-67-7)				
Routes of Exposure	Method	Species	Dose	Remarks
Oral	OECD 407	rat	NOEL (29d) = 24000 mg/kg bw/day	

Oral	OECD 408	rat	NOAEL (92-93d) > 1000 mg/kg/day	
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phthalic anhydride (85-44-9)				
Routes of Exposure	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	

(2-methoxymethylethoxy)propanol (34590-94-8)				
Routes of Exposure	Method	Species	Dose	Remarks
Oral	KANPOGYO No.700, YAKUHATSU No. 1039.61 and KIKYKU No. 1014	rat	NOEL/NOAEL (4 weeks) = 200/1000 mg/kg	
Inhalation	similar to OECD 413	rat	NOAEL (13 weeks) = 200 ppm	
Dermal	similar to OECD 411	rabbit	NOAEL (90d) = 2850 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	
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Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%) (-)				
Routes of Exposure	Method	Species	Dose	Remarks
Oral	similar to OECD 408	rat	NOAEL (female) 30d = 1056 mg/kg bw LOAEL (male) 30d = 116 mg/kg bw	
Inhalation	similar to OECD 413	rat	NOAEC (female) = 3950 mg/m ³ LOAEC (male) = 1975 mg/m ³ LOAEC (female) = 7400 mg/m ³	
Dermal	similar to OECD 411	rat	NOAEL (systemic) >= 495 mg/kg bw/day	

Diiron trioxide (1309-37-1)				
Routes of Exposure	Method	Species	Dose	Remarks
Inhalation	Read-across (Analogy) Cas N°: 1317-61-9 OECD 412	rat	NOAEL (male) 4 weeks = 10.1 mg/m ³ air	
Inhalation	Read-across (Analogy) Cas N°: 1317-61-9 OECD 413	rat	NOAEL (13 weeks) = 4.7 mg/m ³ air	
Oral	OECD 408	rat	NOAEL (13 weeks) > 1000 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	

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

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 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
Talc 14807-96-6	EC50 (96h) = 7202.700 mg/L (Green Algae) NOEC (30d) = 918.089 mg/L (Green Algae) QSAR	LC50 (48h) = 36812.359 mg/L (Daphnid species) QSAR	LC50 (96h) = 89581.016 mg/L (Fishes species) QSAR	
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	
Titanium dioxide 13463-67-7	EC50 (72h) > 100 mg/L (Pseudokirchneriella subcapitata) NOEC (72h) >= 100 mg/L (Pseudokirchneriella subcapitata) OECD 201	EC50 (48h) > 100 mg/L (Daphnia magna) OECD 202	LC50 (96h) > 100 mg/L (Carassius auratus) NOEC (96h) >= 100 mg/L (Carassius auratus) OECD 203	EC50 (3h) > 1000 mg/L, NOEC (3h) >= 1000 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
(2-methoxymethyl ethoxy)propanol 34590-94-8	EC50 (72h) > 969 mg/L (Pseudokirchnerella subcapitata) OECD 201	LC50 (48h) = 1919 mg/L (Daphnia magna) Similar to OECD 202	LC50 (96h) > 1000 mg/L (Poecilia reticulata) OECD 203	EC10 (18h) = 4168 mg/L (Pseudomonas putida) No guideline followed

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
Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	EL50 (72h) = 4.1 mg/L (Pseudokirchnerella subcapitata) NOELR (72h) = 0.76 mg/L (Pseudokirchnerella subcapitata) OECD 201	EL50 (48h) = 10 - 22 mg/L (Daphnia magna) OECD 202	LL50 (96h) = 10 - 30 mg/L (Oncorhynchus mykiss) OECD 203	
Diiron trioxide 1309-37-1		EC50 (48h) > 100 mg/L (Daphnia magna) OECD 202		EC50 (3h) > 10000 mg/L (Activated sludge of a predominantly domestic sewage) ISO 8192
cobalt octoate 136-52-7	EC50 (72h) = 144 µg Codiss./L (Pseudokirchnerella subcapitata) NOEC (72h) = 32.2 µg./L (Pseudokirchnerella subcapitata) LOEC (72h) = 52.7 µg Codiss./L (Pseudokirchnerella 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

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, length, weight, embryotoxicity) 60d = 10 mg/L, OECD 210	
(2-methoxymethyl)propanol 34590-94-8		NOEC (22d) >= 0.5 mg/L (Daphnia magna) Similar to 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	
Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%) -		EC50 (21d) = 0.328 mg/L (Daphnia magna) OECD 211		
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	NOEC (21d) = 60.8 µg./L (Daphnia magna) LC50 (21d) = 121.3 mg/L (Daphnia magna) LOEC (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	
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(2-methoxymethylethoxy)propanol (34590-94-8)				
Chronic toxicity	Method	Species	Values	Remarks
plants	OECD 227	Grossypium hirsutum	NOEC (21d) = 250 g/L	

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
(2-methoxymethylethoxy)propanol 34590-94-8	96 % (28d) DOC removal, 75 % (10d) OECD 301F	Readily biodegradable
Paraffin waxes and Hydrocarbon waxes 8002-74-2	31 % (28d) OECD 301F Read across with : MRD-94-981	Inherently biodegradable.
Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%) -	74.7% (28d) (Activated sludge, domestic, non-adapted) OECD 301 F	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
Talc 14807-96-6	-9.4
phthalic anhydride 85-44-9	1.6
(2-methoxymethylethoxy)propanol 34590-94-8	0.0043

12.4. Mobility in soil

Chemical Name	logKoc	Koc
Styrene 100-42-5	2.55	352
Talc 14807-96-6	1.5027	31.82
phthalic anhydride 85-44-9	-	31

12.5. Results of PBT and vPvB

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).
Talc 14807-96-6	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).
Titanium dioxide 13463-67-7	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).
(2-methoxymethylethoxy)propanol 34590-94-8	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).
Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	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).
Diiron trioxide 1309-37-1	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).	

12.6. Endocrine disrupting properties

Endocrine disrupting properties No information available

12.7. 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 or ID number

ADR/RID	UN1866
IMDG/IMO	UN1866
ICAO/IATA	UN1866
ADN	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
ADN	
Classification Code	F1
Limited quantity	5 L
ventilation	VE01

Special precautions for users

Special precautions No information available

14.7. 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

Named dangerous substances per Seveso Directive (2012/18/EU)

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
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
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
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

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

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,



MATERIAL SAFETY DATA SHEET

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