

**SAFETY DATA SHEET**

Revision Date: 08/24/2021

Print Date: 8/25/2021

SDS Number: R0403645

Enguard™ NG-FR-9112 F 101 GELCOAT
™ Trademark, INEOS or its subsidiaries, registered
in various countries
121863

Version: 1.3

29 CFR 1910.1200 (OSHA HazCom 2012)

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**Product identifier**

Trade name : Enguard™ NG-FR-9112 F 101
GELCOAT
™ Trademark, INEOS or its subsidiaries, registered in
various countries

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

Recommended use : Industrial chemical

Details of the supplier of the safety data sheet

INEOS Composites US LLC
5220 Blazer Parkway
Dublin, OH 43017
United States of America (USA)
+1-614-790-9299 (in US)

sds.composites@ineos.com

Emergency telephone number

1-800-424-9300 (+1-703-527-3887 for direct dial)

Regulatory Information Number

+1-614-790-9299 (in US), or contact your local customer service representative

Product Information

+1-614-790-9299 (in US)

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Flammable liquids : Category 3
Combustible Dust :
Skin irritation : Category 2
Eye irritation : Category 2A
Skin sensitization : Category 1
Carcinogenicity : Category 2
Reproductive toxicity : Category 1B
Specific target organ toxicity : Category 3 (Respiratory system)
- single exposure

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Specific target organ toxicity : Category 1 (Auditory system)
 - repeated exposure
 (Inhalation)

GHS label elements

Hazard pictograms :



Signal Word : Danger

Hazard Statements : Flammable liquid and vapor.
 May form combustible dust concentrations in air.
 Causes skin irritation.
 May cause an allergic skin reaction.
 Causes serious eye irritation.
 May cause respiratory irritation.
 Suspected of causing cancer.
 May damage fertility. Suspected of damaging the unborn child.
 Causes damage to organs (Auditory system) through prolonged
 or repeated exposure if inhaled.

Precautionary Statements : **Prevention:**
 Obtain special instructions before use.
 Do not handle until all safety precautions have been read and
 understood.
 Keep away from heat/ sparks/ open flames/ hot surfaces. No
 smoking.
 Keep container tightly closed.
 Ground/bond container and receiving equipment.
 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
 Use only non-sparking tools.
 Take precautionary measures against static discharge.
 Do not breathe mist or vapors.
 Wash skin thoroughly after handling.
 Do not eat, drink or smoke when using this product.

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Use only outdoors or in a well-ventilated area.
 Contaminated work clothing must not be allowed out of the workplace.
 Wear protective gloves/ protective clothing/ eye protection/ face protection.
 Keep dust/air mixtures away from ignition sources.
 Hazardous polymerization can occur under certain conditions.
 Avoid excessive heat, direct sunlight, peroxides, and other polymerization catalysts. Store in a cool place and maintain proper concentrations of inhibitor and oxygen.

Response:

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 IF exposed or concerned: Get medical advice/ attention.
 If skin irritation or rash occurs: Get medical advice/ attention.
 If eye irritation persists: Get medical advice/ attention.
 Take off contaminated clothing and wash before reuse.
 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

Store in a well-ventilated place. Keep container tightly closed.
 Store in a well-ventilated place. Keep cool.
 Store locked up.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards

Static Accumulating liquid
 Hazardous polymerization may occur.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Static Accumulator

Hazardous components

Chemical name	CAS-No.	Classification	Concentration (%)
Styrene	100-42-5	Flam. Liq. 3; H226	32.8225

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		Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2A; H319 STOT SE 3; H335 STOT RE 1; H372 Asp. Tox. 1; H304	
ALUMINUM HYDROXIDE	21645-51-2	This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).	13.141
TALC	14807-96-6	This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).	6.0748
TITANIUM DIOXIDE (TiO ₂)	13463-67-7	This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).	4.7332
SILICA AMORPHOUS (SiO ₂)	7631-86-9	This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).	2.7501
ANTIMONY TRIOXIDE	1309-64-4	Eye Irrit. 2A; H319	1.1505

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		Carc. 2; H351	
cobalt bis (2-ethylhexylethanoate)	136-52-7	Eye Irrit. 2A; H319 Skin Sens. 1A; H317 Repr. 1B; H360Fd	0.1197

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Call a POISON CENTRE or doctor/physician if exposed or you feel unwell.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : Move to fresh air.
IF INHALED: Call a POISON CENTER/ doctor if you feel unwell.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.
- In case of skin contact : Remove contaminated clothing. If irritation develops, get medical attention.
If on skin, rinse well with water.
Wash contaminated clothing before re-use.
If on clothes, remove clothes.
- In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : Obtain medical attention.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
antimony measles (a red, pimply rash)

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stomach or intestinal upset (nausea, vomiting, diarrhea)
 irritation (nose, throat, airways)
 Lung irritation
 confusion
 Causes skin irritation.
 May cause an allergic skin reaction.
 Causes serious eye irritation.
 May cause respiratory irritation.
 Suspected of causing cancer.
 May damage fertility. Suspected of damaging the unborn
 child.
 Causes damage to organs through prolonged or repeated
 exposure if inhaled.

Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local
 circumstances and the surrounding environment.
 Water spray
 Foam
 Alcohol-resistant foam
 Carbon dioxide (CO₂)
 Dry chemical

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : Organic dusts at sufficient concentration can form explosive
 mixtures in air.
 Never use welding or cutting torch on or near drum (even
 empty) because product (even just residue) can ignite
 explosively.
 Beware of vapours accumulating to form explosive
 concentrations. Vapours can accumulate in low areas.
 Do not allow run-off from fire fighting to enter drains or water
 courses.

Hazardous combustion products : Carbon dioxide (CO₂)
 Carbon monoxide
 Hydrocarbons
 Metal oxides
 Hydrogen chloride gas

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Specific extinguishing methods :

Product is compatible with standard fire-fighting agents.

Further information :

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Use a water spray to cool fully closed containers.

Polymerization will take place under fire conditions. If polymerization occurs in a closed container, there is a possibility it will rupture violently. Cool storage container with water, if exposed to fire.

Special protective equipment for firefighters :

In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures :

Evacuate personnel to safe areas.
 Remove all sources of ignition.
 Use personal protective equipment.
 Ensure adequate ventilation.
 Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
 Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Environmental precautions :

Prevent product from entering drains.
 Prevent further leakage or spillage if safe to do so.
 If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials 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).

Other information :

Comply with all applicable federal, state, and local regulations. Suppress (knock down) gases/vapours/mists with a water spray jet.

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SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).
 No sparking tools should be used.
 Keep away from open flames, hot surfaces and sources of ignition.
 Use only explosion-proof equipment.

Static ignition hazard can result from handling and use. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Special precautions may be necessary to dissipate static electricity for non-conductive containers. Use proper bonding and grounding during product transfer as described in National Fire Protection Association document NFPA 77.

Advice on safe handling : Open drum carefully as content may be under pressure.
 Avoid formation of aerosol.
 Provide sufficient air exchange and/or exhaust in work rooms.
 Do not breathe vapours/dust.
 Do not smoke.
 Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
 Container hazardous when empty.
 Take precautionary measures against static discharges.
 Avoid exposure - obtain special instructions before use.
 Avoid contact with skin and eyes.
 Smoking, eating and drinking should be prohibited in the application area.
 For personal protection see section 8.
 Dispose of rinse water in accordance with local and national regulations.
 Secondary operations, such as grinding and sanding, may produce dust.
 Maintain good housekeeping. Do not permit dust layers to accumulate, for example, on floors, ledges, and equipment, in order to avoid any potential for dust explosion hazards.

For further guidance on prevention of dust explosions, refer to National Fire Protection Association (NFPA) 654: "Standard for the Prevention of Fire and Dust Explosions, from the Manufacturing, Processing and Handling of Combustible Particulate Solids".

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Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
 Containers which are opened must be carefully resealed and kept upright to prevent leakage.
 Observe label precautions.
 No smoking.

Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Styrene	100-42-5	TWA	50 ppm 215 mg/m3	NIOSH REL
		ST	100 ppm 425 mg/m3	NIOSH REL
		TWA	100 ppm	OSHA Z-2
		CEIL	200 ppm	OSHA Z-2
		Peak	600 ppm	OSHA Z-2
		TWA	50 ppm 215 mg/m3	OSHA P0
		STEL	100 ppm 425 mg/m3	OSHA P0
		C	500 ppm	CAL PEL
		PEL	50 ppm 215 mg/m3	CAL PEL
		STEL	100 ppm 425 mg/m3	CAL PEL
ALUMINUM HYDROXIDE	21645-51-2	TWA	10 ppm	ACGIH
		STEL	20 ppm	ACGIH
TALC	14807-96-6	TWA	1 mg/m3 Respirable particulate matter (Aluminium)	ACGIH
		TWA	20 Million particles per cubic foot Dust	OSHA Z-3
		TWA	2 mg/m3	OSHA P0


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			respirable dust fraction	
		TWA	2 mg/m3 Respirable	NIOSH REL
		PEL	2 mg/m3 Respirable dust	CAL PEL
		TWA	0.1 fibres per cubic centimeter	ACGIH
		TWA	2 mg/m3 Respirable particulate matter	ACGIH
TITANIUM DIOXIDE (TiO ₂)	13463-67-7	TWA	15 mg/m3 total dust	OSHA Z-1
		TWA	10 mg/m3 Total dust	OSHA P0
		PEL	10 mg/m3 Total dust (Titanium)	CAL PEL
		PEL	5 mg/m3 respirable dust fraction (Titanium)	CAL PEL
		TWA	10 mg/m3 (Titanium dioxide)	ACGIH
SILICA AMORPHOUS (SiO ₂)	7631-86-9	TWA	20 Million particles per cubic foot Dust (Silica)	OSHA Z-3
		TWA	80 mg/m3 / %SiO ₂ Dust (Silica)	OSHA Z-3
		TWA	6 mg/m3 (Silica)	NIOSH REL
		PEL	6 mg/m3	CAL PEL
ANTIMONY TRIOXIDE	1309-64-4	TWA	0.5 mg/m3 (antimony)	OSHA Z-1
		TWA	0.5 mg/m3 (antimony)	OSHA P0
		TWA	0.5 mg/m3 (antimony)	NIOSH REL
		PEL	0.5 mg/m3 (antimony)	CAL PEL
		TWA	0.5 mg/m3 (antimony)	ACGIH

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ETHYL BENZENE	100-41-4	TWA	20 ppm	ACGIH
		TWA	100 ppm 435 mg/m ³	NIOSH REL
		ST	125 ppm 545 mg/m ³	NIOSH REL
		TWA	100 ppm 435 mg/m ³	OSHA Z-1
		TWA	100 ppm 435 mg/m ³	OSHA P0
		STEL	125 ppm 545 mg/m ³	OSHA P0
		PEL	5 ppm 22 mg/m ³	CAL PEL
		STEL	30 ppm 130 mg/m ³	CAL PEL

Hazardous components without workplace control parameters

Components	CAS-No.
cobalt bis (2-ethylhexylethanoate)	136-52-7

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Styrene	100-42-5	Mandelic acid plus phenylglyoxylic acid	Urine	End of shift (As soon as possible after exposure ceases)	400 mg/g Creatinine	ZUS_A CGIHB
Remarks:	Nonspecific					
		Styrene	Urine	End of shift (As soon as possible after exposure ceases)	40 µg/l	ZUS_A CGIHB

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.
 Provide appropriate exhaust ventilation at places where dust is formed.

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Personal protective equipment

- Respiratory protection : In the case of vapour formation use a respirator with an approved filter.
- Filter type : Organic vapour type
- Hand protection
- Material : Laminate (Barrier© or Silvershield©)
- Break through time : 480 min
- Glove thickness : > 0.5 mm
- Remarks : The exact break through time can be obtained from the protective glove producer and this has to be observed. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. The suitability for a specific workplace should be discussed with the producers of the protective gloves.
- Eye protection : Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.
- Skin and body protection : Wear as appropriate:
 Impervious clothing
 Safety shoes
 Flame-resistant clothing
 Choose body protection according to the amount and concentration of the dangerous substance at the work place.
 Discard gloves that show tears, pinholes, or signs of wear.
 Wear resistant gloves (consult your safety equipment supplier).
- Hygiene measures : Wash hands before breaks and at the end of workday.
 When using do not eat or drink.
 When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical state : liquid
- Odour : pungent
- Odour Threshold : No data available
- pH : No data available

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Melting point/freezing point : No data available

Boiling point/boiling range : No data available

Flash point : 29 °C
 Method: Seta closed cup

Evaporation rate : No data available

Flammability (solid, gas) : May form combustible dust concentrations in air (during processing).

Flammability (liquids) :
 Flammability (liquids) : Static Accumulating liquid

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapour pressure : No data available

Relative vapour density : > 1(Air = 1.0)

Relative density : No data available

Density : 1.078 g/cm³ (25 °C)

Solubility(ies)
 Water solubility : No data available

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Thermal decomposition : No data available

Viscosity
 Viscosity, dynamic : No data available

Viscosity, kinematic : > 20.5 mm²/s (40 °C)

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Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

- Reactivity : No decomposition if stored and applied as directed.
- Chemical stability : Stable under recommended storage conditions.
- Possibility of hazardous reactions : Hazardous polymerisation may occur.
 Vapours may form explosive mixture with air.
 This product does not present a dust explosion hazard as delivered. However, fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source, is a potential dust explosion hazard.
- Conditions to avoid : Exposure to air.
 Exposure to sunlight.

 Heat, flames and sparks.
- Incompatible materials : Acids
 aluminum
 aluminum chloride
 Bases
 chlorinated rubber
 Copper
 Copper alloys
 fluorides
 halogens
 iron chloride
 metal salts
 perchloric acid
 strong bases
 Strong oxidizing agents
 Peroxides
- Hazardous decomposition products : No hazardous decomposition products are known.
 Hydrocarbons
 Acetone
 Carbon dioxide (CO₂)
 Carbon monoxide
 aluminum oxides
 hydrogen chloride

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SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation
 Skin contact
 Eye Contact
 Ingestion

Acute toxicity

Not classified based on available information.

Components:

Styrene:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): 11.8 mg/l, 2770 ppm
 Exposure time: 4 h
 Test atmosphere: vapour

No observed adverse effect level (Humans): 100 ppm
 Exposure time: 7 h
 Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
 Method: OECD Test Guideline 402
 Assessment: No adverse effect has been observed in acute dermal toxicity tests.

ALUMINUM HYDROXIDE:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

LD50 (Rat, female): > 2,000 mg/kg
 Method: OECD Test Guideline 423
 GLP: yes
 Assessment: No adverse effect has been observed in acute oral toxicity tests.

Acute inhalation toxicity : LC50 (Rat): > 2.3 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist
 Assessment: Not classified as acutely toxic by inhalation under GHS.
 Remarks: Information given is based on data obtained from similar substances.

TALC:


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Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
 Method: OECD Test Guideline 423

TITANIUM DIOXIDE (TiO₂):

Acute oral toxicity : LD50 (Rat): > 24,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 6.82 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist
 Assessment: Not classified as acutely toxic by inhalation
 under GHS.

Acute dermal toxicity : LD50 (Rabbit): > 10,000 mg/kg

SILICA AMORPHOUS (SiO₂):

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
 Method: OECD Test Guideline 401
 GLP: yes

Acute inhalation toxicity : LC50 (Rat): > 2.08 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist
 Method: OECD Test Guideline 403
 GLP: yes
 Assessment: No adverse effect has been observed in acute
 inhalation toxicity tests.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

ANTIMONY TRIOXIDE:

Acute oral toxicity : LD50 (Rat): > 34,600 mg/kg
 Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
 Method: OECD Test Guideline 402
 Assessment: Not classified as acutely toxic by dermal
 absorption under GHS.

cobalt bis (2-ethylhexylethanoate):

Acute oral toxicity : LD50 (Rat, female): ca. 3,129 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 10 mg/l
 Exposure time: 1 h

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Test atmosphere: dust/mist
 Assessment: Not classified as acutely toxic by inhalation
 under GHS.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

Skin corrosion/irritation

Causes skin irritation.

Product:

Result: Repeated exposure may cause skin dryness or cracking.

Remarks: May cause skin irritation and/or dermatitis.

Components:

Styrene:

Species: Rabbit

Result: Irritating to skin.

Species: human skin

Result: No skin irritation

ALUMINUM HYDROXIDE:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

GLP: yes

TALC:

Species: reconstructed human epidermis (RhE)

Result: No skin irritation

TITANIUM DIOXIDE (TiO₂):

Result: Slight, transient irritation

SILICA AMORPHOUS (SiO₂):

Result: Slight, transient irritation

ANTIMONY TRIOXIDE:

Result: No skin irritation

cobalt bis (2-ethylhexylethanoate):

Result: No skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

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Remarks: Vapours may cause irritation to the eyes, respiratory system and the skin., Causes serious eye irritation.

Components:

Styrene:

Result: Irritating to eyes.

Remarks: Vapour during processing may be irritating to the respiratory tract and to the eyes.

ALUMINUM HYDROXIDE:

Species: Rabbit

Result: No eye irritation

Method: OECD Test Guideline 405

GLP: yes

TALC:

Species: Rabbit

Result: Slight, transient irritation

Method: OECD Test Guideline 405

TITANIUM DIOXIDE (TiO₂):

Result: Slight, transient irritation

SILICA AMORPHOUS (SiO₂):

Result: Slight, transient irritation

ANTIMONY TRIOXIDE:

Result: Irritating to eyes.

cobalt bis (2-ethylhexylethanoate):

Species: Rabbit

Result: Irritating to eyes.

Method: OECD Test Guideline 405

Respiratory or skin sensitisation

Skin sensitisation: May cause an allergic skin reaction.

Respiratory sensitisation: Not classified based on available information.

Components:

Styrene:

Exposure routes: Skin contact

Species: Guinea pig

Assessment: Does not cause skin sensitisation.

Result: negative

Exposure routes: inhalation (vapour)

Species: Humans

Assessment: Does not cause respiratory sensitisation.

Result: negative

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ALUMINUM HYDROXIDE:

Test Type: Maximisation Test

Species: Guinea pig

Assessment: Did not cause sensitisation on laboratory animals.

Method: OECD Test Guideline 406

GLP: yes

TALC:

Test Type: Maximisation Test

Species: Guinea pig

Assessment: Did not cause sensitisation on laboratory animals.

Method: OECD Test Guideline 406

ANTIMONY TRIOXIDE:

Test Type: Maximisation Test

Species: Guinea pig

Method: Directive 67/548/EEC, Annex V, B.6.

Result: Does not cause skin sensitisation.

cobalt bis (2-ethylhexylethanoate):

Test Type: Local lymph node assay

Species: Mouse

Assessment: The product is a skin sensitiser, sub-category 1A.

Method: OECD Test Guideline 429

Germ cell mutagenicity

Not classified based on available information.

Components:

TALC:

Genotoxicity in vitro : Test Type: In vitro gene mutation study in bacteria
 Test species: Salmonella typhimurium
 Metabolic activation: with and without metabolic activation
 Result: negative

: Test Type: In vitro gene mutation study in bacteria
 Test species: Saccharomyces cerevisiae
 Metabolic activation: with and without metabolic activation
 Result: negative

Genotoxicity in vivo : Test Type: dominant lethal test
 Test species: Rat (male)
 Cell type: Bone marrow


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Result: negative

ANTIMONY TRIOXIDE:

Genotoxicity in vitro : Remarks: In vitro tests have shown mutagenic effects.

Genotoxicity in vivo : Test Type: Micronucleus test
 Test species: Mouse
 Cell type: peripheral blood cells
 Method: OECD Test Guideline 474
 Result: negative

cobalt bis (2-ethylhexylethanoate):

Genotoxicity in vitro : Test Type: Ames test
 Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test
 Result: negative

Carcinogenicity

Suspected of causing cancer.

Product:

Carcinogenicity - : Styrene has been tested for carcinogenicity in rats and mice.
 Assessment : Styrene caused lung tumors in mice only. These tumors are
 not considered to be relevant to humans.

Components:
ANTIMONY TRIOXIDE:

Carcinogenicity - : Limited evidence of carcinogenicity in animal studies
 Assessment

Reproductive toxicity

May damage fertility. Suspected of damaging the unborn child.

Components:
cobalt bis (2-ethylhexylethanoate):

Reproductive toxicity - : Clear evidence of adverse effects on sexual function and
 Assessment : fertility, based on animal experiments., Some evidence of
 adverse effects on development, based on animal
 experiments.

STOT - single exposure

May cause respiratory irritation.

Components:

Styrene:

Assessment: May cause respiratory irritation.

STOT - repeated exposure

Causes damage to organs (Auditory system) through prolonged or repeated exposure if inhaled.


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Components:

Styrene:

Exposure routes: inhalation (vapour)

Target Organs: Auditory system

Assessment: Causes damage to organs through prolonged or repeated exposure.

Repeated dose toxicity
Components:

Styrene:

Species: Human

85 mg/m³

Application Route: inhalation (vapour)

Species: Human

615 mg/kg

Application Route: Skin contact

Aspiration toxicity

Not classified based on available information.

Components:

Styrene:

May be fatal if swallowed and enters airways.

Further information
Product:

Remarks: Solvents may degrease the skin.

Carcinogenicity:
IARC

Group 2A: Probably carcinogenic to humans

Styrene 100-42-5

Group 2B: Possibly carcinogenic to humans

TITANIUM DIOXIDE (TiO₂) 13463-67-7

ANTIMONY TRIOXIDE 1309-64-4

ETHYL BENZENE 100-41-4

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

Reasonably anticipated to be a human carcinogen

Styrene 100-42-5

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SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Ecotoxicology Assessment

Short-term (acute) aquatic hazard : Acute aquatic toxicity Category 2; Toxic to aquatic life.

Long-term (chronic) aquatic hazard : Chronic aquatic toxicity Category 3; Harmful to aquatic life with long lasting effects.

Components:

Styrene:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 4.02 mg/l
 Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 4.7 mg/l
 Exposure time: 48 h

Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): 4.9 mg/l
 Exposure time: 72 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 1.01 mg/l
 Exposure time: 21 d

Toxicity to bacteria : EC50 (activated sludge): ca. 500 mg/l
 Exposure time: 0.5 h

Toxicity to soil dwelling organisms : NOEC (Eisenia fetida (earthworms)): 34 mg/kg
 Exposure time: 14 d
 Method: OECD Test Guideline 207

TITANIUM DIOXIDE (TiO₂):

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l
 Exposure time: 48 h
 Test Type: static test

SILICA AMORPHOUS (SiO₂):

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 10,000 mg/l
 Exposure time: 96 h
 Method: OECD Test Guideline 203
 GLP: yes

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ANTIMONY TRIOXIDE:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 833 mg/l
 Exposure time: 96 h

Toxicity to daphnia and other : LC50 (Daphnia magna (Water flea)): > 530 mg/l
 aquatic invertebrates Exposure time: 48 h

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): 206
 mg/l
 End point: Growth inhibition
 Exposure time: 72 h
 Remarks: Information given is based on data obtained from
 similar substances.

Toxicity to fish (Chronic : NOEC (Pimephales promelas (fathead minnow)): 1.135 mg/l
 toxicity) Exposure time: 28 d
 End point: Growth rate
 Remarks: Information given is based on data obtained from
 similar substances.

Toxicity to daphnia and other : NOEC (Daphnia magna (Water flea)): 4.16 mg/l
 aquatic invertebrates Exposure time: 28 d
 (Chronic toxicity) End point: Reproduction Test
 Test Type: static test
 Remarks: Information given is based on data obtained from
 similar substances.

cobalt bis (2-ethylhexylethanoate):

M-Factor (Short-term (acute) : 1
 aquatic hazard)

Ecotoxicology Assessment
 Short-term (acute) aquatic : Acute aquatic toxicity Category 1
 hazard

Long-term (chronic) aquatic : Chronic aquatic toxicity Category 3
 hazard

Persistence and degradability

Components:

Styrene:

Biodegradability : Result: Readily biodegradable.
 Biodegradation: > 60 %
 Exposure time: 10 d

TALC:

Biodegradability : Result: The methods for determining biodegradability are not

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applicable to inorganic substances.

ANTIMONY TRIOXIDE:

Biodegradability : Result: The methods for determining biodegradability are not applicable to inorganic substances.

cobalt bis (2-ethylhexylethanoate):

Biodegradability : Result: Readily biodegradable.
 Biodegradation: 60 %
 Exposure time: 10 d
 Method: OECD Test Guideline 301B

No data available

Bioaccumulative potential

Components:

Styrene:

Bioaccumulation : Bioconcentration factor (BCF): < 100

Partition coefficient: n-
 octanol/water : log Pow: 2.96 (25 °C)

ANTIMONY TRIOXIDE:

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

No data available

Mobility in soil

Components:

Styrene:

Distribution among
 environmental compartments : Koc: 352

No data available

Other adverse effects

Product:

Additional ecological
 information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Toxic to aquatic life., Harmful to aquatic life with long lasting effects.

Components:

Styrene:

Results of PBT and vPvB
 assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

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SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

General advice : Dispose of in accordance with all applicable local, state and federal regulations.

The product should not be allowed to enter drains, water courses or the soil.

Do not contaminate ponds, waterways or ditches with chemical or used container.

Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
 Dispose of as unused product.
 Empty containers should be taken to an approved waste handling site for recycling or disposal.
 Do not re-use empty containers.
 Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION**International transport regulations****REGULATION**

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.
-----------	----------------------	---------------	--------------------	---------------	------------------------------

U.S. DOT - ROAD

UN	1866	Resin solution	3	III	
----	------	----------------	---	-----	--

CFR_RAIL_C

UN	1866	Resin solution	3	III	
----	------	----------------	---	-----	--

U.S. DOT - INLAND WATERWAYS

UN	1866	Resin solution	3	III	
----	------	----------------	---	-----	--

TDG_ROAD_C

UN	1866	RESIN SOLUTION	3	III	
----	------	----------------	---	-----	--

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TDG_RAIL_C

UN	1866	RESIN SOLUTION	3	III
----	------	----------------	---	-----

TDG_INWT_C

UN	1866	RESIN SOLUTION	3	III
----	------	----------------	---	-----

INTERNATIONAL MARITIME DANGEROUS GOODS

UN	1866	RESIN SOLUTION	3	III
----	------	----------------	---	-----

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

UN	1866	Resin solution	3	III
----	------	----------------	---	-----

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

UN	1866	Resin solution	3	III
----	------	----------------	---	-----

MX_DG

UN	1866	RESIN SOLUTION	3	III
----	------	----------------	---	-----

***ORM = ORM-D, CBL = COMBUSTIBLE LIQUID**

Marine pollutant	no
------------------	----

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15. REGULATORY INFORMATION**TSCA list**

The following substance(s) is/are subject to a Significant New Use Rule:
 Alkanes, C20-28, chloro 2097144-43-7
 Alkanes, C18-20, chloro 106232-85-3

The following substance(s) is/are subject to TSCA 12(b) export notification requirements:
 Alkanes, C20-28, chloro 2097144-43-7

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EPCRA - Emergency Planning and Community Right-to-Know Act**CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Styrene	100-42-5	1000	3046

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Arsenic oxide	1327-53-3	1	90909

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
 Combustible Dust
 Hazard not otherwise classified (physical hazards)
 Skin corrosion or irritation
 Serious eye damage or eye irritation
 Respiratory or skin sensitisation
 Carcinogenicity
 Reproductive toxicity
 Specific target organ toxicity (single or repeated exposure)

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 The following components are subject to reporting levels established by SARA Title III, Section 313:

Styrene	100-42-5	32.82 %
ANTIMONY TRIOXIDE	1309-64-4	1.15 %
ETHYL BENZENE	100-41-4	0.11 %

California Prop. 65

WARNING: This product can expose you to chemicals including styrene, Titanium dioxide, antimony trioxide, ethylbenzene, Quartz, cumene, lead compounds, diarsenic trioxide, Pigment Black 6, benzene, formaldehyde, 1,4-dioxane, acetaldehyde, ethylene oxide, 4-methylpentan-2-one, naphthalene, 2-phenylpropene, which is/are known to the State of California to cause cancer, and toluene, diarsenic trioxide, benzene, ethylene oxide, 4-methylpentan-2-one, methanol, chloromethane, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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The components of this product are reported in the following inventories:

TCSI	: Not in compliance with the inventory
TSCA	: All substances listed as active on the TSCA inventory
AiIC	: Not in compliance with the inventory
DSL	: All components of this product are on the Canadian DSL
ENCS	: Not in compliance with the inventory
KECI	: Not in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory
NZIoC	: Not in compliance with the inventory

Inventories

AiIC (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

SECTION 16. OTHER INFORMATION**Further information**

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NFPA:**HMIS III:**

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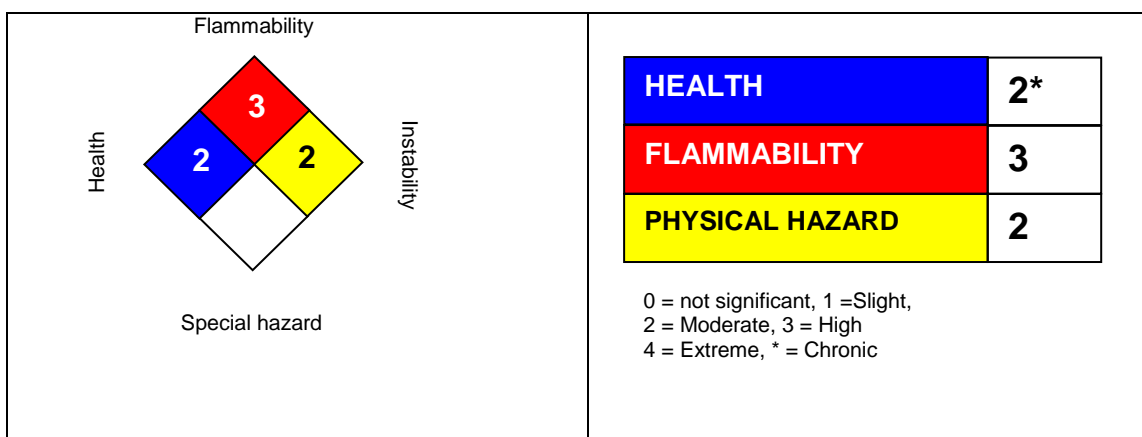
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NFPA Flammable and Combustible Liquids Classification

Flammable Liquid Class IC

Full text of H-Statements

H226	Flammable liquid and vapor.
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.
H351	Suspected of causing cancer.
H360Fd	May damage fertility. Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure if inhaled.

Sources of key data used to compile the Safety Data Sheet

INEOS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by INEOS's Environmental Health and Safety Department +1-614-790-9299 (in US).

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Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative