

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

Product name : F010-TBN-23

Synonyms : Vinyl Ester Resin

Material uses : Industrial applications: Used in the manufacture of thermoset plastic parts.

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2. Hazards identification

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Preparation classification : R10
Xn; R20, R48/20
Xi; R36/37/38

Effects and symptoms: Exposure by inhalation, ingestion or skin contact may cause localized irritation, nausea, vomiting and/or diarrhea plus CNS disturbance. Contact with eyes may cause redness, burning and blurred vision.

3. Composition/information on ingredients

Ingredient name	CAS #	%	EC #	Symbol	R-Phrases*
Styrene	100-42-5	44.0	202-851-5	Xn	R10, R20, R48/20, R36/37/38
Silica, Amorphous	7631-86-9	1 - 5	231-545-4	Xi	R36/37

* See Section 16 for the full text of the R-phrases declared above..

Also contains a polyester polymer, not classified as a hazardous substance.

4. First aid measures

Inhalation : Move the victim to a safe area as soon as possible. If not breathing, give artificial respiration. If breathing is difficult, administer oxygen. Get medical attention.

Ingestion : Do not induce vomiting. Never give anything by mouth to an unconscious person. If potentially dangerous quantities of this material have been swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. If irritation persists, seek medical attention.

Eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Use of buffered baby shampoo will aid in removal. Get medical attention.

5. Fire-fighting measures

Suitable extinguishing media : Use carbon dioxide, foam, dry chemical or water fog to extinguish.

Unusual fire/explosion hazards : Can react with oxidizing materials. Explosive in the form of vapor when exposed to heat or flame. Material may polymerize when container is exposed to heat (fire) and polymerization will increase pressure in a closed container which may cause the container to rupture violently.

Hazardous thermal decomposition products : May produce carbon monoxide, carbon dioxide, and irritating or toxic vapors, gases or particulate.

Special fire-fighting procedures : Evacuate surrounding areas. Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

6. Accidental release measures

Personal precautions : Eliminate all ignition sources. Chemical resistant gloves, full protective suit, and boots. A self-contained breathing apparatus should be used to avoid inhalation of the product vapors.

Environmental precautions and clean-up methods : Stop leak if without risk. Contain with an inert material, recover as much as possible and place the remainder in an appropriate waste disposal container. Warn unauthorized personnel to move away. Prevent entry into sewers or confined areas.

7. Handling and storage

Handling : WARNING! Use only in well-ventilated areas. Store away from direct sunlight. Avoid inhalation and contact with eyes, skin, and clothing. Wear appropriate personal protective equipment for your task. Ground and bond all containers when transferring the material. Empty containers may retain product and product vapor. Do not expose to heat, flame, sparks or other ignition sources such as cutting, welding, drilling, grinding or static electricity. Do not pressurize. Provide adequate safety showers and eyewashes in the area of use.

Storage : Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place. Containers should be grounded.

8. Exposure controls and personal protection

Occupational exposure limits :

<u>Ingredient name</u>	<u>Occupational exposure limits</u>
Styrene	EH40/2005 WELs (United Kingdom (UK), 8/2007). STEL: 250 ppm 15 minute(s). TWA: 100 ppm 8 hour(s). TWA: 430 mg/m ³ 8 hour(s). STEL: 1080 mg/m ³ 15 minute(s).
Silica, Amorphous	EH40/2005 WELs (United Kingdom (UK), 8/2007). TWA: 6 mg/m ³ 8 hour(s). Form: inhalable dust TWA: 2.4 mg/m ³ 8 hour(s). Form: respirable dust

Engineering measures : Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Provide adequate safety showers and eyewashes in the area of use.

Hygiene measures : Wash hands, forearms and face thoroughly after handling compounds and before eating, smoking and using the lavatory and at the end of the day.

Personal protective equipment

Respiratory system : Wear respirator with organic vapour filter or SCBA when ventilation is inadequate.

Skin and body : Wear long sleeved shirt, long trousers and chemical resistant apron or coat.

Hands : Rubber or chemical resistant gloves.

Eyes : Splash goggles or faceshield with glasses.

9. Physical and chemical properties

Physical state : Liquid.

Color : Amber.

Odor : Aromatic.

Odor threshold : 0.14 ppm (Styrene)

pH : Not applicable.

Boiling point : 145°C (Styrene)

Melting point : Not available.

Flash point : 31° (Styrene)

Fire hazards in the presence of various substances : Flammable in the presence of the following materials or conditions: open flames, sparks and static discharge, heat.

Auto-ignition temperature : 490 °C (Styrene)

Explosive properties : Can react with oxidizing materials. Explosive in the form of vapor when exposed to heat or flame. Material may polymerize when container is exposed to heat (fire) and polymerization will increase pressure in a closed container which may cause the container to rupture violently.

Flammable limits : **Lower:** 0.9% **Upper:** 6.8% (Styrene)

Oxidizing properties : Not available.

Vapor pressure : 4.5 mm Hg @20°C (Styrene)

Density : 1.1 (Water = 1)

Solubility : Not soluble in water.

Partition coefficient: n- octanol/water : Not available.

Viscosity : 465 cps

Vapor density : 3.59 (Air = 1) (Styrene)

Evaporation rate : Not available.

10. Stability and reactivity

Stability : The product is stable as supplied.

Conditions to avoid : Sunlight, open flames and storage above 25 °C.

Materials to avoid : Peroxides, oxidizers, acids and bases.

Hazardous decomposition products : May produce carbon monoxide, carbon dioxide, and irritating or toxic vapors, gases or particulate.

11. Toxicological information





Acute toxicity:

<u>Ingredient name</u>	<u>Test</u>	<u>Species</u>	<u>Result</u>	<u>Exposure</u>
Styrene	LD50 Oral	Rat	2650 mg/kg	-
	LC50 Inhalation Vapor	Rat	5634.2 ppm	4 hours

Local effects**Skin irritation** : Yes.**Eye irritation** : Yes.**Sensitization** : No.**Chronic effects** : Repeated overexposure may produce general deterioration of health by an accumulation in one or more human organs. Repeated overexposure may cause dermatitis.**12. Ecological information****Ecotoxicity data**

This product or components of this product may be toxic to aquatic organisms.

Bioaccumulative potential : Low for styrene. Likely to be low for polyester polymer.**Persistence/degradability** : Styrene is readily biodegradable in the environment.**13. Disposal considerations****Methods of disposal** : Waste must be disposed of in accordance with relevant EU Directives and national, regional and local environmental control regulations. Liquid resin may be incinerated in a suitable facility provided local regulations are observed.**Waste classification** : For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used.**14. Transport information**

Regulation	Shipping description	Label	Additional information
IATA	UN1866; Resin Solution; 3; III.		Not available.
IMDG	UN1866; Resin Solution; 3; III.		Emergency schedules (EmS) 3-05
ADN/ADNR	UN1866; Resin Solution; 3; III.		-
ADR	UN1866; Resin Solution; 3; III.		UK Emergency Action Code: <u>Hazard identification number</u> 30 Exemption Note: ADR exempt (Section 2.2.3.1.5) in containers <450 liters: Special regulations for 'viscous substances' applicable.

15. Regulatory information

EU regulations

Hazard symbol or symbols :



Harmful

Risk phrases : R10- Flammable.
R20- Harmful by inhalation.
R48/20- Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R36/37/38- Irritating to eyes, respiratory system and skin.

Safety phrases : S23- Do not breathe vapor.

Contains : Styrene 100-42-5

Other EU regulations

16. Other information

Full text of R-phrases referred to in sections 2 and 3 : R10- Flammable.
R20- Harmful by inhalation.
R48/20- Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R36/37- Irritating to eyes and respiratory system.
R36/37/38- Irritating to eyes, respiratory system and skin.

Full text of classifications referred to in sections 2 and 3 : Xn - Harmful
Xi - Irritant

History

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Prepared by : AOC Corporate Regulatory Affairs

Notice to reader

The information in this SDS is based on the present state of our knowledge and on current laws. The product is not to be used for purposes other than those specified under section 1 without first obtaining written handling instructions. It is always the responsibility of the user to take all necessary steps to fulfill the demands set out in the local rules and legislation. The information in this SDS is meant to be a description of the safety requirements for our product. It is not to be considered a guarantee of the product's properties.