Orca Composites

MATERIAL SAFETY DATA

Chemtrec 24-Hour Emergency Telephone
Domestic North America (800) 424-9300
International (800) 527-3887

This MSDS complies with 29 CFR 1910.1200 (Hazard Communications)

1. Product and Supplier Identification

Product Name:	**ORCA 502 V/E Retardant Resin**
Product Number:	**055502D**
Date of Prep:	**10/01/10**
Product Type:	**Vinyl Ester Resin - Halogenated**
Supplier:	**Fiberlay Inc.** **24 S. Idaho S.** **Seattle, Wa 98134** **(206)782-0660**

2. Composition/Information On Ingredients

Chemical Name	Wt.%	CAS
Styrene	41.5	100-42-5

3. Hazards Identification

Routes of Entry: Eye and skin contact, inhalation of vapors, or accidental ingestion.

Emergency Overview:

Physical Appearance: Clear to amber liquid

Immediate Concerns:

Eyes: Severe eye irritant which may result in redness, burning, tearing and blurred vision.

Skin: Skin irritant which may result in burning sensation. Repeated or prolonged skin contact may cause dermatitis.

Ingestion: Ingestion may result in mouth, throat and gastrointestinal irritation, nausea, vomiting and diarrhea.

Inhalation: Inhalation of spray mist or liquid vapors may cause upper respiratory irritation and possible central nervous system effects including headaches, nausea, vomiting, dizziness, drowsiness, loss of coordination, impaired judgment and general weakness.

Potential Health Effects:

Carcinogenic Effects:

Styrene: Classified A4 (not classifiable for human or animal) by ACGIH. Classified 2B (possible for human) by IARC. An increased incidence of lung tumors was observed in mice from a recent inhalation study. The relevance of this finding is uncertain since data from other long-term animal studies and from epidemiology

studies of workers exposed to styrene do not provide a basis to conclude that styrene is carcinogenic to humans. Lung effects have been observed in mouse studies following repeated exposure.

Mutagenic or Teratogenic Effects: No known effect according to our database.

Inhalation: May be harmful if inhaled. Inhalation at levels above the occupational exposure limit could cause respiratory sensitization and risk of damage to the respiratory system.

4. First Aid Measures

Eye contact: Flush with a continuous flow of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Use of buffered baby shampoo will aid in removal. Seek medical attention.

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

Inhalation: Move the victim to a safe area as soon as possible. Allow the victim to rest in a well-ventilated area. If breathing is difficult, give oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Ingestion: Do not induce vomiting. Seek immediate medical attention.

5. Fire Fighting Measures

The product is: Flammable liquid, Class IC.

Auto-ignition temperature 914°F(490°C) Styrene

Flash point 87.6°F (31°C) Styrene

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

Products of combustion May produce carbon monoxide, carbon dioxide, and irritating or toxic vapors including hydrogen bromide and/or bromine.

Fire hazard Flammable in the presence of open flames, sparks, or heat.

Explosion hazard 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.

Fire-fighting media and instructions:

Small Fire: Use carbon dioxide, foam, dry chemical or water fog to extinguish.

Large Fire: Evacuate surrounding areas. Use carbon dioxide, foam, dry chemical or water fog to extinguish. Wear self-contained breathing apparatus (SCBA) and full fire-fighting protective clothing. Cool containing vessels with water spray in order to prevent pressure build-up, autoignition or explosion. Prevent run off to sewers or other water ways.

6. Accidental Release Measures

Small spill: Absorb with an inert material and place in an appropriate waste disposal container.

Large spill: Stop leak if without risk. Eliminate all ignition sources. 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. 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: To ensure maximum stability, store in closed containers below 75 °F.

8. Exposure Controls, Personal Protection

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)

		EXPOSURE LIMITS				
		OSHA PEL 72 (US, 11/2006)	ACGIH TLV (US, 1/2009)		NIOSH REL (US, 6/2009)	
Chemical Name		ppm	ppm	mg/m^3	ppm	mg/m^3
Styrene While the federal workplace exposure limit for styrene is 100 ppm, OSHA accepted the styrene industry's proposal to voluntarily meet a PEL of 50 ppm on an 8 hours TWA.	**TWA**	100 (8 hrs)	20 (8 hrs)	85 (8hrs)	50 (10 hrs)	215 (10 hrs)
	STEL	NE	40 (15 min)	170 (15 min)	100 (15 min)	425 (15 min)
	CEIL	200	NE	NE	NE	NE
	AMP	600 (5 min)	NE	NE	NE	NE

Engineering Controls: 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.

Personal Protective Equipment: Personal protective equipment may vary depending on the job being performed.

Eye/face: Wear eye protection such as safety glasses with side shields, splash goggles or face shield with safety glasses.

Skin: Avoid skin contact. Impervious gloves should be worn. Other items may include long sleeves, lab coats, or impervious jackets.

Respiratory: Determine if airborne concentrations are below the recommended exposure limits in accordance your company's PPE program and regulatory requirements. If they are not, select a NIOSH-approved respirator that provides adequate protection from the concentration levels encountered. Air-purifying respirators are generally adequate for organic vapors. Use positive pressure, supplied-air respirators if there is potential for an uncontrolled release, if exposure levels are unknown, or under circumstances where air-purifying respirators may not provide adequate protection. Reference OSHA 29 CFR 1910.134.

Personal protection in case of a large spill: Chemical resistant gloves, full protective suit, and boots. Respiratory protection in accordance with OSHA regulation 29 CFR 1910.134. A self-contained breathing apparatus should be used to avoid inhalation of the product vapors.

9. Physical and Chemical Properties

Physical State	Liquid
Odor	Aromatic
Odor threshold	0.14 ppm Styrene
Color	Clear to amber
pH	Not applicable
Vapor Pressure	45mm Hg at C 68°F 20°C
Vapor Density	3.59 Styrene (Air=1)

Boiling Point	293°F (145°C) Styrine
Molecular weight (g/mol)	1000 to 15000
Solubility in Water	Slight
Specific Gravity	1.15 to 1.32 (water = 1)
Melting point	Not available
Evaporation rate	Not available
Dispersability properties	Not dispersed in water
Water / oil dist. Coeff	Not available

10. Stability and Reactivity

Stability: This product is normally stable, but can become unstable at elevated temperatures and undergo polymerization, which could produce heat and fumes resulting in over-pressurization and rupture in a closed container.

Instability temperature: To ensure maximum stability, store in closed containers below 75 °F.

Conditions of instability: Heat.

Incompatibility with various substances: Polymerizes in the presence of organic peroxides, oxidizing materials, or heat.

Corrosivity: Our database contains no additional remark on the corrosivity of this product

11. Toxicological Information

TOXICITY TO ANIMALS

CHEMICAL NAME	ORAL LD_{50} (rat)	INHALATION LC_{50} (rat)
Styrene	2650 mg/kg	5634.2 ppm (4 hours)

Special remarks on toxicity to animals: Lung effects have been observed in mouse studies following repeated exposure.

Special remarks on chronic effects on humans: No additional remark.

Special remarks on other toxic effects on humans: No additional remark.

12. Ecological Information

Ecotoxicity: Toxic to aquatic organisms. Should not be released to sewage system or other bodies of water at concentrations above limits established in regulations or permits.

13. Disposal Considerations

Waste disposal: Recycle to process, if possible. Consult your local or regional authorities. Ignitable characteristic.

14. Transport Information

DOT : UN1866; Resin Solution; 3; III.

TDG: UN1866; Resin Solution; 3; III.

IATA/IMDG: IATA: UN1866; Resin Solution 3; III Pkg. Inst.:

Passenger - 309; Cargo – 310
IMDG: UN1866; Resin Solution; 3; III
FP=31°C; EmS No.: F-E, S-E

Additional information: US regulations require the reporting of spills when the amount exceeds the Reportable Quantity (RQ) for specific components of this material. See CERCLA in Section 15, Regulatory Information, for the Reportable Quantities.

15. REGULATORY INFORMATION

Other regulations:

This section does not reference all applicable regulatory compliance lists.

TSCA: All ingredients are listed or compliant with TSCA.

DSL: All ingredients are listed or compliant with the NSNR.

Proposition 65 Warning: This product contains a chemical(s) known to the State of California to cause cancer, birth defects and/or reproductive harm.

SARA 302 component(s): None. **SARA 313 component(s):** Styrene.

CERCLA(RQ): Styrene - 1000 lbs. (453.6 kg)

16. Other Information

HMIS RATING:		**NFPA**	**Protective Clothing**
Health	**2**	**3**	*** Goggles**
Flammability:	**3**	**2 2**	*** Respirator**
Physical Hazard:	**2**		
Personal Protection:	**X**		

Preparation Date: October 1, 2010

Prepared by: Fiberlay Inc

Comments: This Material Safety Data Sheet was prepared using information provided by AOC, LLC – Corporate Regulatory Affairs, Fiberlay Inc. and CCINFO.

Revisions: None

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