



# MATERIAL SAFETY DATA SHEET

Chemtrec 24-Hour Emergency Telephone  
 Domestic North America (800) 424-9300  
 International (703) 527-3887

*This MSDS complies with 29 CFR 1910.1200 (Hazard Communication)*

## 1. Product and Supplier Identification / Product Hazard Summary

**Product:** ORCA SHIELD VE Black Tooling Gelcoat

**Trade Name:** Vinyl Ester Gelcoat in Monomer

**Supplier:** Fiberlay Inc.  
 24 S. Idaho St  
 Seattle, Wa 98134  
 (206)782-0660

### HMIS

**HEALTH: 2**

**\*CAUTION!**

\*May be harmful if swallowed or inhaled

\*May be irritating to the skin eyes and respiratory tract

\*May cause allergic skin reaction

\*Heated material may cause thermal burns

**FLAMMABILITY: 3**

\*Warning!

Flammable Liquid & Vapor

**REACTIVITY: 2**

\*Caution! Unstable

at high temperatures

**SPECIFIC**

**HAZARD: --**

## 2. Composition

Component	%	CAS Number	Exposure Limits
Styrene	38-39.8	100-42-5	<b>ACGIH TLV (United States, 1/2009). Skin</b> TWA: 20 ppm 8 hour(s). TWA: 85 mg/m <sup>3</sup> 8 hour(s). STEL: 40 ppm 15 minute(s). STEL: 170 mg/m <sup>3</sup> 15 minute(s). <b>OSHA PEL Z2 (United States, 11/2006).</b> TWA: 100 ppm 8 hour(s). CEIL: 200 ppm AMP: 600 ppm 5 minute(s). <b>NIOSH REL (United States, 6/2009).</b> TWA: 50 ppm 10 hour(s). TWA: 215 mg/m <sup>3</sup> 10 hour(s). STEL: 100 ppm 15 minute(s). STEL: 425 mg/m <sup>3</sup> 15 minute(s).
Unsaturated Polyester Resin	16-26	Mixture	N/A
Unsaturated Vinylester Resin	21-31	Mixture	N/A

## ORCA SHIELD VE BLACK TOOLING GELCOAT

Silicon Dioxide	1-8	007631-86-9	ACGIH TLV 20 mppcf OSHA PEL Z2 10 mg/m <sup>3</sup>
Acrylic Polymer	1-6	015625-89-5	N/A
Carbon Black	10-12	001333-86-4	OSHA PEL/TWA: 3.5 Mg/Cu. M.

### 3. Hazards Identification

#### Routes of Entry:

**Skin Contact:** Moderate    **Eye Contact:** Moderate    **Ingestion:** Moderate    **Inhalation:** Major

**Emergency Overview:** Central nervous system depressant. High vapour concentration may cause headache, nausea, dizziness, drowsiness and confusion. Causes skin and eye irritation. Aspiration hazard. Swallowing or vomiting of the liquid may result in aspiration into the lungs.

#### Potential Acute Health Effects

**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 judgement and general weakness.

#### Potential Chronic 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.

**Methyl Methacrylate:** Classified A4 (not classifiable for human or animal) by ACGIH. Classified 3 (not classifiable for human) by IARC.

**Silica, Amorphous:** Classified 3 (not classifiable for human) by IARC.

**Cobalt Compounds:** Classified A3 (proven for animal) by ACGIH. Classified 2B (possible for human) by IARC.

**MUTAGENIC or TERATOGENIC EFFECTS:** No known effect according to our database.

**Other:** Prolonged exposure may cause dermatitis. Repeated or prolonged overexposure to near lethal concentrations can produce liver and kidney damage.

### 4. First Aid Measures

**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.

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

**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.

**INGESTION:** Do not induce vomiting. Seek immediate medical attention.

**GENERAL COMMENTS:** Good personal hygiene is essential. Avoid eating, smoking or drinking in work areas.

### 5. Fire Fighting Measures

## ORCA SHIELD VE BLACK TOOLING GELCOAT

<b>The Product Is:</b>	<b>Flammable liquid</b>
<b>Flash point:</b>	75 - 89°F (24.8 - 32°C)
<b>Flammability Classification:</b>	Class 1C
<b>Autoignition Temperature:</b>	790°F(421°C) Methyl Methacrylate
<b>Lower Explosive Limit:</b>	0.09 % by volume
<b>Upper Explosion Limit:</b>	12.5% by volume
<b>Sensitivity to Impact:</b>	No
<b>Sensitivity to Static Discharge:</b>	No

**Hazardous Combustion Products:** May produce carbon monoxide, carbon dioxide, and irritating or toxic vapors, gases or particulate

**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 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 Procedures:** 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.

**Note:** If product contains metal compounds (Section III), avoid dust from dried product or grinding of articles made from this material.

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

### 8. Exposure Controls, Personal Protection

**SEE COMPONENT EXPOSURE LIMITS SECTION 2**

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.

**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 Protection:** 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.

## ORCA SHIELD VE BLACK TOOLING GELCOAT

**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

<b>Appearance:</b>	Green Liquid	<b>Boiling Point:</b>	214°F(101°C)
<b>Odour:</b>	Aromatic		Methyl Methacrylate
<b>pH:</b>	Not applicable.	<b>Freezing Point:</b>	Not available.
<b>Vapour Pressure:</b>	<5 @ 20 C mm Hg	<b>Specific Gravity:</b>	1.1 to 1.4 (Water = 1)
<b>Solubility:</b>	Slight	<b>Partition Coefficient:</b>	No data
<b>Vapor Pressure:</b>	40 mm Hg@ 77°F (25°C) Methyl	<b>Evaporation Rate:</b>	<1
Methacrylate		<b>Molecular Weight:</b>	Not Available
<b>Vapour Density:</b>	3.5-3.6 (Air=1)	<b>Odor Threshold:</b>	,1.0 ppm
<b>Melting Point:</b>	Not applicable.	<b>Dispersibility:</b>	Slight in Wat

### 10. Stability and Reactivity

**Chemical Stability:** This product is normally stable, but can become unstable at elevated temperatures.

**Instability Temperature:** >120°F (48.9°C)

**Conditions of Instability:** Heat

**Incompatibility:** 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	Name	Result	Species	Dose	Exposure
	Styrene	LD50 Oral	Rat	2650 mg/kg	-
		LC50 Inhalation Vapor	Rat	5634.2 ppm	4 hours
	Methyl Methacrylate	LD50 Oral	Rat	7872 mg/kg	-
hours		LC50 Inhalation Gas.	Rat	7094 ppm	4
	Methanol	LD50 Dermal	Rabbit	15800 mg/kg	-
		LD50 Oral	Rabbit	14200 mg/kg	-
		LD50 Oral	Mouse	7300 mg/kg	-
		LD50 Oral	Rat	5628 mg/kg	-
		LD50 Oral	Rat	5600 mg/kg	-
hours		LC50 Inhalation Gas.	Rat	64000 ppm	4
	Cobalt Compounds	LD50 Oral	Rat	6171 mg/kg	-

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

## ORCA SHIELD VE BLACK TOOLING GELCOAT

**Special remarks on chronic effects on humans:** Repeated or prolonged overexposure to near lethal concentrations can produce liver and kidney damage.

**Special remarks on other toxic effects on humans: Methyl Methacrylate:** MMA has both acute and chronic effects. Inhalation overexposure may result in irritation of nose and throat, headache, nausea, vomiting, dizziness, irritation of upper respiratory tract and unconsciousness. Overexposure will result in moderate irritation to the skin, eyes and mucous membranes. Prolonged skin contact may cause dermatitis. Chronic exposure can cause headache and nausea, central nervous system depression, and ultimately liver, lung or kidney damage. An allergic skin reaction may also be possible.

**Molybdenum Compounds:** Some compounds may cause toxic effects similar to lead chromate and molybdenum. Lead chromate may effect changes to the blood, gastrointestinal, nervous and reproductive systems. Topical irritation may occur from skin or mucous membrane exposure. Molybdenum may cause general systemic health effects.

### 12. Ecological Information

**Environmental Toxicity:** 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 UN1866; Resin Solution; 3; III

**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

**This section does not reference all applicable regulatory compliance lists**

**TSCA:** All ingredients are listed or compliant with TSCA.

**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 313 component(s):** Styrene, Methyl Methacrylate, Cobalt Compounds, Methanol.

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

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

**CERCLA(RQ):**

Styrene - 1000 lbs. (453.6 kg)

Methyl Methacrylate - 1000 lbs. (453.6 kg)

Methanol - 5000 lbs. (2268 kg)

### 16. Other Information

**California Proposition 65 involving warnings of the presence of certain listed chemicals is now in effect.**

## ORCA SHIELD VE BLACK TOOLING GELCOAT

ORCA COMPOSITES/FIBERLAY INC. believes the law requires us to inform you that detectable amounts of any of the listed chemicals might be present in ORCA COMPOSITES products. Based on a review of the list, ORCA COMPOSITES products, like all synthetic and naturally occurring chemical substances, may conceivably contain trace contaminants of some of the listed substances. While not necessarily added to our products as ingredients, some of the listed chemicals may be present in the raw materials as received from suppliers over which we have no control.

In order to comply with the California Law, even though some of the listed substances may not represent a significant risk as defined by the regulations, we feel obligated to make the following statement:

**“Warning: This product may contain trace amounts of some chemicals considered by the State of California to be carcinogens or reproductive Toxicants.”**

**Preparation Date:** 5/15/11

**Prepared by:** Fiberlay Inc

**Revisions:** None