



# SAFETY DATA SHEET

TO COMPLY WITH OSHA HAZARD COMMUNICATION STANDARD 29 CFR.1910.1200 & THE  
GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS

## 1. PRODUCT AND COMPANY IDENTIFICATION

### 1.1 Product Identifier

Substance Name: ORCA 281 LOW PROFILE LOW VOC LAMINATING RESIN  
Product Code(s): 050228126215

### 1.2 Details of the Supplier of the Safety Data Sheet

Distributor:

Fiberlay Inc.  
1468 Northgate Blvd  
Sarasota, FL 34234  
T 206-782-0660  
F 888-782-0662  
[www.Fiberlay.com](http://www.Fiberlay.com)  
[www.OrcaComposites.com](http://www.OrcaComposites.com)

### 1.3 Emergency Telephone Number

Emergency Number: CHEMTREC: Domestic - 800-424-9300

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the Substance or Mixture

Health Hazard: 2\*

Flammability Hazard: 3

Physical Hazard: 1

Hazard Codes: \*=Chronic Hazard---0=Minimal Hazard, 1=Slight Hazard, 2=Moderate Hazard, 3=Serious Hazard, 4=Severe Hazard

### 2.2 Label Elements

Most important hazards:

Flammable liquid and vapor.  
May be harmful if swallowed  
May be harmful if inhaled  
Causes skin irritation  
Causes eye irritation  
Suspected of causing genetic defects  
Suspected of causing cancer  
Suspected of damaging fertility or the unborn child  
May cause respiratory irritation and damage to the central and peripheral nervous system and respiratory tract through prolonged or repeated exposure.  
Toxic to aquatic life.

**Adverse effects to the human health:** It can cause central and peripheral nervous system effects, can cause chemical pneumonitis if inhaled and gastrointestinal disturbances

**Environmental effects:** Dangerous to aquatic life

**Physical and chemical hazards:** Flammable product. Containers may explode when heated. When

heated, may release toxic and irritating fumes

**GHS-US Labeling:**



**Signal Word (GHS-US):**

DANGER

**Hazard Statement:**

H226-Flammable liquid vapor  
H315-Causes skin irritation  
H319-Causes serious eye irritation  
H341-Suspected of causing genetic defects  
H351-Suspected of causing cancer  
H361-Suspected of damaging fertility or the unborn child  
H370-Causes damage to the central and peripheral nervous system  
H335-May cause respiratory irritation  
H336-May cause drowsiness or dizziness  
H373-May cause damage to the central and peripheral nervous system and respiratory tract through prolonged or repeated exposure  
H304-May be fatal if swallowed and enters airways

**Precautionary Statements (GHS-US)**

P210-Keep away from heat/sparks/open flames/hot surfaces. NO smoking  
P233-Keep container tightly closed  
P240-Ground/bond container and receiving equipment  
P241-Use explosion-proof electrical/ventilating/lighting/equipment  
P242-Use only non-sparking tools  
P243-Take precautionary measures against static discharge  
P280-Wear protective gloves/protective clothing/eye protection/face protection  
P264-Wash with water thoroughly after handling  
P201-Obtain special instructions before use  
P202-Do not handle until all safety precautions have been read and understood  
P260-Do not breathe dust/fumes/gas/mist/vapors/spray  
P270-Do not eat, drink or smoke when using this product  
P261-Avoid breathing dust/fumes/gas/mist/vapors/spray  
P270-Use only outdoors or in a well-ventilated area

**Symbol:**

Xi, Xn, T, T+

**Risk Phrases:**

R10-Flammable  
R38-Irritating to skin  
R36-Irritating to eyes  
R68-Possible risk of irreversible effects  
R40-Limited evidence of a carcinogenic effect  
R60 & T R61-May impair fertility. May cause harm to the unborn child  
T+, R39-Danger of very serious irreversible effects  
R37, R67-Irritating to respiratory system. Vapors may cause drowsiness and dizziness  
R48-Danger of serious damage to health by prolonged exposure  
R65-Harmful: May cause lung damage if swallowed

**Safety Phrases:**

S3-Keep in a cool place  
S9-Keep container in a well-ventilated place  
S13-Keep away from food, drink and animal food  
S16-Keep away from sources of ignition-NO smoking  
S24-Avoid contact with skin  
S25-Avoid contact with eyes  
S29-Do not empty into drains  
S36-Wear suitable protective clothing  
S37-Wear suitable gloves  
S45-In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)  
S56-Dispose of this material and its container to hazardous or special waste collection point

## 2.3 Other Hazards

Other hazards not contributing to the classification: Styrene Monomer

## 2.4 Unknown Acute Toxicity (GHS-US)

No Data Available

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

### 3.1. Substances

Component	CAS Number	Concentration (%)
cobalt bis(2-ethylhexanoate)	136-52-7	≤0.3
Styrene Monomer	100-42-5	35-46

## 4. FIRST AID MEASURES

### 4.1. First Aid Measures

**Inhalation:** No risks concerning inhalation at room temperature. Remove the victim to fresh air. Monitor respiratory function. If there is breathing difficulty, provide oxygen. If necessary, give artificial respiration. Seek medical attention.

**Ingestion:** Rinse the victim's mouth out with water. Provide plenty of water for the victim to drink if he/she is conscious. Seek medical attention.

**Skin Contact:** Remove contaminated clothing and shoes. Wash affected area with water and soap. Wash contaminated clothing and shoes before reuse. Seek medical attention.

**Eye Contact:** Wash eyes immediately with running water, keeping the eyelids open. Remove contact lenses if present and easily removable. Seek medical attention.

**Most important symptoms and effects:** Redness and pain in the skin. Redness, pain, and watery eyes. Cough, sore throat, difficulty breathing, nausea, abdominal pain and diarrhea. Fatigue, muscle weakness, feeling of drunkenness, dizziness, drowsiness, headaches and incoordination. Difficulty concentrating and remembering. It can affect balance, the ability to learn and time of reflection.

**Notes for physician:** Avoid contact with the product while helping the victim. Keep victim heated and at rest. Symptomatic treatment should include, above all, supportive measures such as correction of electrolyte, metabolic and respiratory abnormalities.

## 5. FIRE FIGHTING MEASURES

### 5.1. Extinguishing Media

Flammable product. compatible with any means of extinction as dry chemical, alcohol resistant foam and water mist.

### 5.2. Special Hazards Arising from the Substance or Mixture

When in fire, may produce irritating and toxic gases like carbon monoxide and dioxide

### 5.3. Advice for Firefighters

Self-contained breathing apparatus (SCBA) operated in positive pressure mode and complete protective clothing.

### 5.4. Special Hazards from the Combustion of the Chemical

In combustion, can form toxic and irritant gases such as carbon monoxide and carbon dioxide. Releases gases and/or fumes when heated and they might be respiratory sensitizers.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1. Removal of Ignition Sources

Flammable product. Eliminate preventively all the ignition sources around the area. Do not smoke.

### 6.2. Provision of Enough Ventilation

Use in a well-ventilated area or with exhaust system adequate to eliminate mists and vapors

### 6.3. Prevention of Inhalation and Skin, Mucous Membranes and Eyes Contact

Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation, eye and skin contact. Use appropriate personal protective equipment as indicated in Section 8

### 6.4. Environmental Precautions

Do not let this chemical enter the environment (soil, waterways and groundwater).

### 6.5. Methods and Material for Containment and Cleaning Up

Use water fog or vapor suppressing foam to reduce the spread of fumes use physical barriers or containment of spills. Collect spilled material and place into containers. Absorb the remaining product with sand, earth, vermiculite or other inert material. Place absorbed material in appropriate containers and remove to safe place.

## 7. HANDLING AND STORAGE

### 7.1. Precautions for Safe Handling

Avoid inhalation and contact with eyes, skin, and clothing. Wash hands thoroughly after handling and before eating or drinking. Remove and wash contaminated clothing before reuse. Use with adequate ventilation. Ground and bond containers when transferring the material to prevent static electricity sparks which could ignite the vapor. Use spark-proof tools and explosion-proof equipment. Consult your supplier of promoters and catalysts for additional instructions on proper mixing and usage. Empty containers may retain product residue (liquid and/or vapor). Do not pressurize, cut, weld, braze, solder, drill, grind, or expose these containers to heat, flame, sparks, static electricity, or other sources of ignition as the container may explode and may cause injury or death. Empty drums should be completely drained and properly bunged. Empty drums should be promptly returned to a drum re-conditioner or properly disposed.

### 7.2. Conditions for Safe Storage, Including Any Incompatibilities

Keep away from ignition sources: flames, pilot lights, electrical sparks, and sparking tools. NO SMOKING. Do not store in direct sunlight. Store separate from oxidizing material, peroxides, and metal salts. Keep container closed when not in use. To ensure maximum stability and maintain optimum resin properties, resins should be stored in closed containers at temperatures below 75°F (25°C). Copper or copper containing alloys should be avoided as containers.

### 7.3. Hygiene Advice

Do not eat, drink or smoke when using this product. Wash hands before eating, drinking, smoking or going to the toilet. Take off all contaminated clothing and wash before reuse.

### 7.4. Packing Materials

Metals should not be used.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1. Control Parameters

Component	CAS Number	%	Exposure Limits	Source
Styrene Monomer	100-42-5	35-46	20ppm TLV-TWA 50ppm 8hr PEL 85mg/m <sup>3</sup> TLV 50mg/m <sup>3</sup> 8hr PEL 75mg/m <sup>3</sup> 15min PEL	ACGIH OSHA ACGIH WCB WCB
cobalt bis(2-ethylhexanoate)	136-52-7	≤0.3	0.1 mg/m <sup>3</sup> PEL-TWA 0.02 mg/m <sup>3</sup> 8hr TLV	OSHA ACGIH

**Biological indicators:** BEI: Mandelic acid + Fenilgloxilic acid in urine-400 mg/g creatinine

### Appropriate engineering controls:

Provide mechanical ventilation or direct exhaust to the external media. It is recommended safety shower and eye bath available near working area. The engineering controls measures are the most effective to reduce exposure to the product.

## 8.2. Exposure Controls

### Eye/Face protection:

Wear 1) safety glasses with side shields and a face-shield or 2) goggles and a face-shield. Facilities storing or utilizing this material should be equipped with an eyewash station and safety shower

### Respiratory protection:

A NIOSH/MSHA approved air purifying respirator with organic vapor cartridge or canister may be necessary under certain circumstances where airborne concentrations are expected to exceed exposure limits. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if 1) there is any potential for an uncontrolled release, 2) exposure levels are not known, or 3) during other circumstances where air purifying respirators may not provide adequate protection.

**Thermal Hazard:** Complete air-ventilated suit, with air supply, or any thermo-resistant clothing available.

**Environmental exposure controls:** Do not dump directly into the environment or into the sewer system. The dilution water from tire fighting can cause pollution.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on Basic Physical and Chemical Properties

Physical state:	Liquid
Color:	Amber
Odor:	Aromatic
Odor Threshold:	0.01 - 0.1 ppm ( <i>Styrene</i> )
pH:	NA
Relative evaporation rate (butylacetate=1):	NA
Melting Point:	-23.8°F / -30.6°C ( <i>Styrene</i> )
Freezing Point:	NA
Boiling point:	293°F (145°C)
Flash point:	88°F (31°)
Self-ignition Temperature:	914°F (490°C)
Decomposition Temperature:	NA
Flammability (solid, gas):	NA
Vapor pressure:	5.0 mm Hg@ 68°F / 20°C ( <i>Styrene</i> )
Relative vapor density at 20°:	3.6 (Air = 1) ( <i>Styrene</i> )
Relative density:	1.1 (Water = 1)
Solubility:	Slight.
Log Pow:	NA
Log Kow:	NA
Viscosity, kinematic:	NA
Viscosity, dynamic:	NA
Explosive properties:	NA
Oxidizing properties:	NA
Explosive Limits:	Upper-6.1% Lower-1.1%

### 9.2. Other Information

None available

## 10. STABILITY AND REACTIVITY

### 10.1. Hazardous Polymerization

May polymerize violently with risk of fire and explosion. Uninhibited styrene, or styrene with low inhibitor concentration, polymerizes slowly at room temperature and on exposure to light and air, and readily at elevated temperatures, greater than 149°F (65°C). Polymerization becomes self-sustaining above 203°F (95°C). Metal salts (e.g. ferric or aluminum chloride), peroxides, oxidizers and strong acids may also cause polymerization.

## 10.2. Chemical Stability

This product is stable

## 10.3. Conditions to Avoid

Elevated temperatures, heat, sparks, open flame and other ignition sources.

## 10.4. Incompatible Materials

Oxygen, oxidizing agents-Increased risk of fire and explosion. Can form explosive peroxides. Strong acids (e.g. sulfuric acid, oleum, chlorosulfonic acid) – Increased temperature and pressure; increased risk of fire and explosion. Alkali metal, graphite compounds, metallic halide salts, peroxides (dibenzoyl peroxide di-tertbutyl peroxide), azoisobutyronitrile-Can initiate polymerization. Byllithium- Explosion can occur. Halogens-Can react with low concentrations of halogens, in the presence of UV light, to form a strong irritant. Can form peroxides in the presence of light and air or on contact with acids. Styrene monomer has been involved in several plant-scale explosions when stored inappropriately or accidentally heated

## 10.5. Hazardous Decomposition Products

Styrene Oxide

# 11. TOXICOLOGICAL INFORMATION

## 11.1. Information on Toxicological Effects

### Acute Toxicity

Ingredient	Result	Species	Dose	Exposure
Styrene	LC50 Inhalation Gas	Rat	2770 ppm	4 hours
	LC50 Inhalation Vapor	Rat	11800 mg/m <sup>2</sup>	4 hours
	LC50 Inhalation Vapor	Rat	5634.2 ppm	4 hours
Cobalt bis(2-ethylhexanoate)	LD50 Oral	Rat	2650 mg/kg	-
	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	1.22 g/kg	-

### Irritation/Corrosion

Ingredient	Result	Species	Score	Exposure	Observation
styrene	Eyes-Mild irritant	Human	-	50ppm	-
	Eyes-Moderate Irritant	Rabbit	-	24hrs 100mg	-
	Eyes-Severe Irritant	Rabbit	-	100 mg	-
	Skin-Mild Irritant	Rabbit	-	500 mg	-
	Skin-Moderate Irritant	Rabbit	-	100 percent	-

### Sensitization

May cause sensitization by skin contact

### Symptoms related to the physical, chemical and toxicological characteristics:

#### Acute Eye Toxicity:

Studies indicate that exposures to concentrations of styrene above 200 ppm cause irritation of the eyes. Styrene causes transient moderate eye irritation without corneal involvement. Acute Inhalation Toxicity: Studies indicate that exposures to concentrations of styrene above 200 ppm cause irritation of the upper respiratory tract.

### Delayed and immediate effects and also chronic effects from short and long term exposure:

#### Sub-chronic:

Overexposure to styrene has been suggested as a cause of the following effects in laboratory animals and may aggravate pre-existing disorders of the following organs in humans; mild, reversible kidney effects, effects on hearing, respiratory tract damage, testis damage and liver damage

#### Chronic/Carcinogenicity:

The International Agency for Research on Cancer (IARC) has classified styrene in Group 1B, possibly carcinogenic to humans. IARC concluded that evidence of carcinogenicity from human health studies, was inadequate and based the classification on animal and other relevant data. IARC considered the combined results of these cancer studies to provide "limited evidence" of carcinogenicity. The relevance of these findings 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.

Ingredient	ACGIH	IARC	HTP
Styrene	-	2A	Reasonably anticipated to be a human carcinogen
Cobalt bis(2-ethylhexanoate)	-	2B	Reasonably anticipated to be a human carcinogen

**Teratology:**

Styrene did not cause birth defects in orally-dosed rats, mice, rabbits and hamsters exposed by inhalation. Styrene given by inhalation for six hours a day during organ development has been shown to be toxic to fetal mice at 250 ppm and to fetal hamsters at 1000 ppm. Information from human experience and the results of animal studies suggest no significant risk of birth defects or reproductive toxicity of styrene to humans.

**Mutagenicity:**

Styrene has given mixed positive and negative results in a number of mutagenicity tests. It was not mutagenic in the Ames test without metabolic activation but gave negative and positive mutagenic results with metabolic activation. It has also given negative mutagenic results in the Chinese Hamster Ovary Test, and the Forward Gene Mutation Test and positive results in the Sister Chromatid Exchange and the Chromosomal Aberration Assay.

**12. ECOLOGICAL INFORMATION**

**12.1. Toxicity**

Ingredient	Result	Species	Exposure
Styrene	Acute EC50 1400 ug/l Fresh water	Algae-Pseudokirchneriella subcapitata	72 hours
	Acute EC50 720 ug/l Fresh water	Algae-Pseudokirchneriella subcapitata	96 hours
	Acute EC50 4700 ug/l Fresh water	Daphnia-Daphnia magna	48 hours
	Acute LC50 52mg/l Marine water	Crustaceans-Artmia salina	48 hours
	Acute LC50 4020 ug/l Fresh water	Fish-Pimephales promelas	96 hours
	Chronic NOEC 3 ug/l Fresh water	Algae-Pseudokirchneriella subcapitata	96 hours

**12.2. Persistence and Degradability**

NA

**12.3. Bio-Accumulative Potential**

Ingredient	LogPow	BCF	Potential
Styrene	0.35	13.49	Low
Cobalt bis(2-ethylhexanoate)	-	15600	high

**12.4. Mobility in Soil**

NA

**12.5. Other Adverse Effects**

NA

**13. DISPOSAL CONSIDERATIONS**

**13.1. Waste Treatment Methods**

Preferred method of disposal: Includes incineration under controlled conditions in accordance with all local and national laws and regulations. The generation of waste should be avoided or minimized wherever possible. Untreated material is not suitable for disposal. Waste, even small quantities, should never be poured down drains, sewers or water courses. Waste must be disposed of in accordance with federal, state and local environmental control regulations.

**Contaminated Packaging:** Empty containers can only be disposed of when the remaining product adhering to the container walls has been removed. Hazard warning labels should be removed from the container walls.

**14. TRANSPORT INFORMATION**

**14.1 UN Number**

UN-No. (DOT): 1866

**14.2 UN Proper Shipping Name****DOT Proper Shipping Name:** Resin Solution**DOT Hazard Class:** 3-Class 3-Flammable and combustible liquid  
49 CFR 173.120**Hazard Labels (DOT):**

DOT Special Provisions (49 CFR 172.102):	B1, B52, IB3, T2, TP1
Packing Group (DOT):	III
DOT Packaging Exceptions:	150
DOT Packaging Non Bulk:	173
DOT Packaging Bulk:	242

**14.3 Additional Information**

Other Information:	No supplementary information available
State during transport (ADR-RID):	As liquid

**Overland Transport**

Proper Shipping Name:	Resin Solution
Packing Group:	III
Class:	3-Flammable Liquids
UN Number:	UN1866

**Transport by Sea**

Proper Shipping Name:	Resin Solution
Packing Group:	III
Class:	3-Flammable Liquids
UN Number:	UN1866
Marine Pollutant:	No
EmS:	F-E, S-E, Stowage Category "A"

**Air Transport**

Proper Shipping Name:	Resin Solution
Packing Group:	III
Class:	3-Flammable Liquids
UN Number:	UN1866

**15. REGULATORY INFORMATION****15.1. US Federal Regulations**

29 CFR 1910.1200:	Hazardous
40 CFR 116-117:	Hazardous
40 CFR 355, Appendices A and B:	Not subject to Emergency Planning and Notification
40 CFR 372:	Listed
40 CFR 302:	Listed, Reportable Quantity-1000lbs (454kg)

**EU-Regulations**

No Restrictions

**Occupational Safety and Health Act (OSHA)**

This material is classified as a hazardous chemical under the criteria of the US Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR 1910.1200.

**SARA Title III: Section 304-CERCLA**

Styrene Monomer (CAS# 100-42-5): Reportable Quantity= 1000 lb

**SARA Title III: Section 311/312- Hazard Communication Standard (HCS)**

This material is classified as an IMMEDIATE HEALTH HAZARD, DELAYED HEALTH HAZARD,



FLAMMABILITY HAZARD, and REACTIVITY HAZARD under the US Superfund Amendment and Reauthorization Act Section 311/312)

**SARA Title III: Section 313 Toxic Chemical List (TCL)**

	<b>Ingredient</b>	<b>CAS number</b>
Form R-Reporting requirements	Styrene Cobalt bis(2-ethylhexanoate)	100-42-5 136-52-7

**TSCA Section 8(b)-Inventory Status**

All components of this material are listed on the Toxic Substances Control Act (TSCA) inventory

**TSCA Section 12(b)-Export Notification**

This material does not contain any components that are subject to the US Toxic Substances Control Act (TSCA) Section 12(b) Export Notification requirements

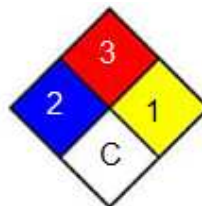
**16. OTHER INFORMATION**

**Full text of H-phrases:**

Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
STOT SE 3	Specific target organ toxicity-Single exposure, Category 3, Narcosis
H225	Highly flammable liquid and vapor
H226	Flammable liquid and vapor
H302	Harmful if swallowed
H311	Toxic in contact with skin
H319	Causes serious eye irritation
H336	May cause drowsiness or dizziness

**HMIS III Rating**

Health: 2-Moderate Hazard  
Flammability: 3-Serious Hazard  
Physical: 1-Slight Hazard  
Personal Protection: C



ORCA Composites believes the law requires us to inform you that detectable amounts of any of the listed chemicals might be present in ORCA products. Based on a review of the list, ORCA 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.

**Pop65 WARNING:** This product can expose you to chemicals including styrene which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

**Preparation Date:** 1-2-2019

**Prepared by:** Kevin Aber

**Comments:** This Safety Data Sheet was prepared using information provided by Orca Composites

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