



## MATERIAL SAFETY DATA SHEET

*This Material Safety Data Sheet complies with the European Union Directives*

### 1. Product and Supplier Identification

**Product:** Rodding Compound

**Product Use:** Embedding Resin for Quartz, Stone and Steel or FRP Reinforcing Rods

**Supplier:** Integra Adhesives Inc.

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### 2. Composition

#### Part A

Component	% (w/w)	LD <sub>50</sub>	LC <sub>50</sub>	Exposure Limits
Styrene CAS No 100-42-5	55-65	5000 mg/kg (rat/oral)	5640ppm (rat/ 4hr)	ACGIH <sup>1</sup> TLV-TWA: 20 ppm Carcinogen A4 ACGIH STEL: 40 ppm
Inert Ingredients	35-45	N. App	N. App	N Applicable

#### Part B

Component	% (w/w)	LD <sub>50</sub>	LC <sub>50</sub>	Exposure Limits
Benzoyl Peroxide <sup>2</sup> (Active O <sub>2</sub> < 1.0%) CAS No 94-36-0	2-4	7710 mg/kg (rat/oral)	N. Av.	ACGIH TLV: 5 mg/m <sup>3</sup>
Dibutyl Phthalate CAS No 84-74-2	5-10	800 mg/kg (rat/oral)	12500 mg/m <sup>3</sup> (mouse /4hr)	ACGIH TLV: 5 mg/m <sup>3</sup>
Reaction product of Epichlorohydrin and Bisphenol A CAS No 25085-99-8	75-90	11400 mg/kg (rat/oral)	N. Av.	N. Established

## Rodding Compound

- <sup>1</sup> ACGIH: American Conference of Environmental Industrial Hygienists  
<sup>2</sup> Part B does not meet the requirements for inclusion in Class 5.2 under Part 2.5.3.2.1 of the thirteenth revise edition of the Recommendations on the Transport of Dangerous Goods, Model Regulations

### 3. Hazards Identification

#### Routes of Entry:

Skin Contact: Yes(Part A)  
Ingestion: Yes (Part A)

Eye Contact: Yes (Part B)  
Inhalation: Yes (Part A)

**Emergency Overview:** Part A contains styrene. This component has a sweet, almost floral odour at low concentrations and a sharp, penetrating, pungent, disagreeable odour at high concentrations. FLAMMABLE LIQUID AND VAPOUR. Vapour can be ignited by a static charge. Being heavier than air, it may spread long distances and sources of ignition may cause flashbacks to source. Liquid may float on water spreading fire. This product is a confined space hazard. Closed container may rupture when exposed to heat or to sunlight. Central Nervous System depressant. High vapour concentrations may cause headache, nausea, dizziness, drowsiness, confusion and incoordination. Very high concentrations may cause loss of consciousness and death. Can decompose at high temperatures forming toxic gases. This component may be unstable at high temperatures and may undergo hazardous polymerization. EYE IRRITANT. Causes severe eye irritation. Aspiration hazard. Swallowing or vomiting of the liquid may result in aspiration into the lungs. POSSIBLE CANCER HAZARD - The International Agency for Research on Cancer (IARC) has determined that there is limited evidence for carcinogenicity of styrene to animals. POSSIBLE MUTAGEN - may cause genetic damage, based on animal data.

Ingredients in Part B may cause severe eye irritation.

**Acute Health Effects: INHALATION:** This product contains materials that are extremely volatile. Low concentrations probably irritating to the nose, throat and respiratory tract. Higher concentrations can probably cause symptoms of central nervous system depression, such as headache, nausea dizziness, drowsiness, and confusion. Extremely high concentrations can cause loss of consciousness and death. Dues to its irritating nature, methyl methacrylate may cause fluid build up in lungs. Symptoms are shortness of breath, pain in chest and difficulty breathing. Symptoms may be delayed up to 24 hours.

**SKIN CONTACT:** Part A can cause skin irritation. Symptoms may include redness, burning, and drying and/or cracking of the skin. May be absorbed through the skin, but is used as recommended, it is unlikely that this route of entry will cause harmful effects.

**EYE CONTACT:** Ingredients in Part A and Part B may cause severe eye irritation.

**INGESTION:** Ingestion of small amounts accidentally through handling may have no ill effect, however larger amounts are harmful. Risk of aspiration into the lungs! Lung damage may occur from aspiration.

**Chronic Health Effects:** In most exposure situation, prolonged exposure may cause central nervous system depression. In addition, prolonged inhalation exposure may cause bronchitis which includes coughing. This product is a skin sensitizer. One sensitized to this material, even a small additional exposure will produce severe allergic reactions such as rash, itching, and swelling. This material cannot be classified by IARC as a carcinogen to humans.

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### Medical Conditions Aggravated by Exposure:

Pre-existing eye, skin, respiratory tract disorders may be aggravated by exposure. Other organs affected include, central nervous systems, male reproductive organs, and hearing.

## 4. First Aid Measures

**INHALATION:** This product is flammable. Take proper precautions. Remove victim to fresh air. Give artificial respiration if indicated. Get medical attention.

**SKIN CONTACT:** Avoid direct contact. Wear chemical protective clothing, if necessary. Quickly and gently blot or brush away excess product. Wash gently and thoroughly with water and non-abrasive soap for 15-20 minutes or until chemical is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Completely decontaminate clothing, shoes and leather goods before re-use or discard. If the contact is severe and pain persists after long term rinsing with water, rinse the contaminated area with lukewarm pasteurized milk. After pain has stopped, rinse thoroughly with water. Obtain medical attention immediately.

**EYE CONTACT:** MAY CAUSE EYE IRRITATION. Check and remove any contact lenses. Flush with plenty of water for at least 20 minutes, occasionally lifting the upper and lower eyelids. DO NOT INTERRUPT FLUSHING. Take care not to contaminate non-affected eye. Seek medical attention.

**INGESTION:** If patient is conscious, give three or four glasses of water. **Do not induce vomiting** Do not give anything by mouth to a convulsing or unconscious person. Get medical attention.

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

## 5. Fire Fighting Measures

### Part A

<b>Flash point:</b>	31°C TCC (Styrene)
<b>Autoignition Temperature:</b>	490°C. See information under "Fire Fighting Instructions"
<b>Lower Explosive Limit:</b>	0.9 % by volume
<b>Upper Explosion Limit:</b>	6.1% by volume
<b>Sensitivity to Impact:</b>	No
<b>Sensitivity to Static Discharge:</b>	Styrene is sensitive to static discharge

### Part B

<b>Flash point:</b>	Not applicable
<b>Autoignition Temperature:</b>	Not applicable
<b>Lower Explosive Limit:</b>	Not applicable
<b>Upper Explosion Limit:</b>	Not applicable
<b>Sensitivity to Impact:</b>	No
<b>Sensitivity to Static Discharge:</b>	No

**Hazardous Combustion Products:** Burning may produce oxides of carbon.

**Extinguishing Media:** Use carbon dioxide, alcohol foam, or dry chemical. Water should be used to cool surrounding containers.

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**Fire Fighting Instructions:** Vapour will flash and the liquid will burn. Keep away from all sources of ignition and avoid elevated temperatures. Vapours are heavier than air, and may collect in low-lying areas. Firefighters must wear self-contained breathing apparatus and full protective clothing.

### 6. Accidental Release Measures

**Personal Protection:** Wear adequate personal protection to prevent skin contact. See Section 8 for specific recommendations. Persons not wearing protective equipment should be excluded from the spill area.

**Environmental Precautions:** Prevent release into waterways and sewers. Stop spill as soon as possible to prevent contamination of soil, groundwater, or surface water.

**Cleanup Procedures:** Toxic, combustible liquid, insoluble or very slightly soluble in water. Do not touch spilled material. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand, or other non-combustible material. Prevent entry into sewers, basements, or confined areas. Dike if needed. Call for assistance on disposal. Consult national, provincial, and local regulations.

### 7. Handling and Storage

**Handling Procedures:** Keep away from heat and all sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas, fumes, vapor, or spray. Follow safe work procedures and wear appropriate personal protective equipment. Empty containers contain product residues and must be treated as hazardous.

**Storage:** Keep well away from all sources of ignition. Store in a cool well-ventilated area out of direct sunlight and away from heat and ignitions sources. Do not store near foodstuffs. Styrene should not be stored for longer than 3 months. Containers should be checked weekly after 30 days to determine inhibitor concentration and possible polymerization. Store away from oxidizers and corrosives and other incompatible materials such as sulfuric acid, peroxides, alkali metal, which increase the risk of fire and explosion.

### 8. Exposure Controls, Personal Protection

**Engineering Controls:** If used indoors, ensure adequate non-sparking ventilation. Remove all sources of ignition and post "No Smoking" signs in the work place. Keep away from heat, and never weld, cut, or solder empty containers. Use adequate ventilation to reduce concentration to below TLV.

**Respiratory Protection:** Use a NIOSH approved organic vapour respirator if concentration below minimum IDLH of 500 ppm in the workplace. For vapour concentrations in excess of 500 ppm, use a positive pressure respirator.

**Skin Protection:** Wear impervious gloves (butyl rubber) and clothing to prevent skin contact.

**Eye and Face Protection:** Chemical splash-proof goggles must be worn at all times.

**Other:** Eye wash station should be located near work area.

## 9. Physical and Chemical Properties

### Part A

<b>Appearance:</b>	Light amber transparent viscous liquid	<b>Vapour Density:</b>	Heavier than air
<b>Odour:</b>	Pungent	<b>Melting Point:</b>	Not applicable.
<b>pH:</b>	Not applicable.	<b>Boiling Point:</b>	Not available
<b>Vapour Pressure:</b>	≈ 0.85 kPa @ 25°C	<b>Freezing Point:</b>	Not available.
<b>Solubility:</b>	Practically insoluble in water	<b>Relative Density:</b>	1.32 (water = 1)
		<b>Partition Coefficient:</b>	No data
		<b>Evaporation Rate:</b>	Not available.

### Part B

<b>Appearance:</b>	Paste	<b>Boiling Point:</b>	Not established
<b>Odour:</b>	Faint odour	<b>Freezing Point:</b>	0°C
<b>pH:</b>	Not applicable.	<b>Relative Density:</b>	1.11 (water = 1)
<b>Vapour Pressure:</b>	Not applicable	<b>Partition Coefficient:</b>	No data
<b>Solubility:</b>	Slight solubility	<b>Evaporation Rate:</b>	Not applicable
<b>Vapour Density:</b>	Not applicable		
<b>Melting Point:</b>	Not applicable.		

## 10. Stability and Reactivity

**Chemical Stability:** This product may be unstable at elevated temperatures.

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

**Incompatibility:** 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.

Part B is an organic peroxide listed as an incompatible substance to Part A. Mixing Part A and B must be done under controlled conditons as prescribed in the product directions. Use of the resin dispensers provided with the resin kits are adequate for measuing correct amounts of each.

**Hazardous Decomposition Products:** Various oxides of carbon and unidentified compounds in smoke.

## 11. Toxicological Information

<b>Acute Exposure (LD<sub>50</sub>):</b>	See Section 2
<b>Acute Exposure (LC<sub>50</sub>):</b>	See Section 2
<b>Chronic Exposure:</b>	See Section 3.
<b>Exposure Limits:</b>	See Section 2.
<b>Irritancy:</b>	See Section 3.
<b>Sensitization:</b>	No.
<b>Neurotoxicity:</b>	None observed other than central nervous system depression
<b>Carcinogenicity:</b>	The International Agency for Research on Cancer (IARC) has determined that there is limited evidence for carcinogenicity of styrene to animals.
<b>Teratogenicity:</b>	Not reported
<b>Reproductive Toxicity:</b>	No evidence reported
<b>Mutagenicity:</b>	Styrene has caused sister chromatid exchanges (SCE) in somatic cells. May be weakly mutagenic.
<b>Synergistic Products:</b>	Styrene metabolism is slowed down by the presence of other organic solvents, including ethyl alcohol. Thus, the toxic effects of styrene are enhanced by exposure to other solvents.

## 12. Ecological Information

**Environmental Toxicity:** No data available.

**Biodegradability:** No data available.

## 13. Disposal Considerations

Review federal, provincial or state, and local government requirements prior to disposal. Store material for disposal as indicated in Storage Conditions. Disposal by controlled incineration may be acceptable.

## 14. Transport Information

<b>Transport Canada (TDG):</b>	Adhesives, Class 3, UN 1133, PG III, (When labeled for retail trade, may be classified as "Consumer Commodity")
<b>US DOT (CFR49):</b>	Adhesives, Class 3, UN 1133, PG III, (When labeled for retail trade, may be classified as "Consumer Commodity, ORMD)
<b>RIA/ADR:</b>	Adhesives, Class 3, UN 1133, PG III, (When labeled for retail trade, may be classified as "Consumer Commodity")
<b>International Air Transport Association (IATA):</b>	Adhesives, Class 3, UN 1133, PG III (When labeled for retail trade, may be classified as "Consumer Commodity, Class 9, ID 8000")

## 15. Regulatory Information

European Labelling:



## 16. Other Information

Comments:

**Classification:** R10 Xn: R20 Xi: R36/38

**Risk Phrases:** Flammable; Harmful by inhalation; Irritating to eyes and skin.  
[R10, 20, 36/38]

**Safety Phrases:** Keep out of reach of children. Do not breathe vapours. Avoid contact with the skin. Wear suitable gloves. [S:(2),23,24,25,37]

**Original Preparation Date:** June 10, 2007

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Comments: This Material Safety Data Sheet was prepared using information provided by Integra Adhesives Inc. and CCINFO.

**Revisions:** None