



## MATERIAL SAFETY DATA SHEET

*This Material Safety Data Sheet meets or exceeds the requirements of the Canadian Controlled Product Regulations (WHMIS)*

### 1. Product and Supplier Identification

**Product:** Composite Bonder RTP-01

**Product Use:** Bonding agent for composite materials

**Supplier:** Integra Adhesives Inc.

Unit 4-33759 Morey Ave  
Abbotsford, BC, Canada, V2S 2W5  
Telephone: (604) 850-1321  
Facsimile: (604) 850-1354

### 2. Composition

#### Part A

Component	% (w/w)	LD <sub>50</sub>	LC <sub>50</sub>	Exposure Limits
Methyl Methacrylate Monomer CAS No 80-62-6	38-48	7940 mg/kg (rat/oral)	7093ppm (rat/ 4hr)	ACGIH TLV-TWA: 50 ppm Carcinogen A4, Sensitizer ACGIH STEL: 100 ppm

#### Part B

Component	% (w/w)	LD <sub>50</sub>	LC <sub>50</sub>	Exposure Limits
Benzoyl Peroxide (Active O <sub>2</sub> < 1.0%) CAS No 94-36-0	2-4	7710 mg/kg (rat/oral)		ACGIH H TLV: 5 mg/m <sup>3</sup>

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Dibutyl Phthalate CAS No 84-74-2	5-10	800 mg/kg (rat/oral)	(mouse /4hr)	ACGI H 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. Esta blish ed

### 3. Hazards Identification

#### Routes of Entry:

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

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

**Emergency Overview:** Methyl methacrylate is extremely volatile and can form high concentration of vapours at room temperature. 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. **Dangerously reactive!** Closed container may rupture when exposed to heat or to sunlight. High vapour concentrations may cause headache, nausea, dizziness, drowsiness, confusion and incoordination. Very high concentrations may cause loss of consciousness and death. **Skin sensitizer!** May cause severe allergic skin reactions.

**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:** This product is mildly irritating to the skin, but exposure is considered major due to its ability to sensitize the skin.

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

**INGESTION:** Ingestion may cause effects similar to those experienced under the heading "INHALATION"

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**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.

### **Medical Conditions Aggravated by Exposure:**

Pre-existing eye, skin, respiratory tract disorders may be aggravated by exposure.

## 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 chemical. Wash gently and thoroughly with water and non-abrasive soap for 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>	9°C TCC (Methyl Methacrylate)
<b>Autoignition Temperature:</b>	435°C. See information under "Fire Fighting Instructions"
<b>Lower Explosive Limit:</b>	2.1 % by volume
<b>Upper Explosion Limit:</b>	12.5% by volume
<b>Sensitivity to Impact:</b>	No
<b>Sensitivity to Static Discharge:</b>	No

### **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

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**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.

**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

**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, flammable liquid, insoluble or very slightly soluble in water. 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. Eliminate all sources of ignition. 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 breath gas, fumes, vapor, or spray. Follow safe work procedures and wear appropriate personal protective equipment.

**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>	Clear transparent liquid, maybe tinted	<b>Melting Point:</b>	Not applicable.
<b>Odour:</b>	Typical Resin	<b>Boiling Point:</b>	≈101 °C
<b>pH:</b>	Not applicable.	<b>Freezing Point:</b>	Not available.
<b>Vapour Pressure:</b>	29 mm Hg	<b>Relative Density:</b>	1.06 (water = 1)
<b>Solubility:</b>	Slightly soluble in cold water	<b>Partition Coefficient:</b>	No data
<b>Vapour Density:</b>	Heavier than air	<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 is stable.

**Hazardous Polymerization:** May polymerize violently with risk of fire and explosion. Uninhibited methyl methacrylate 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 BB must be done under controlled condidtons 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

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<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>	Part A is a skin sensitizer. See Section 3.
<b>Neurotoxicity:</b>	None observed other than central nervous system depression
<b>Carcinogenicity:</b>	No ingredients listed by IARC
<b>Teratogenicity:</b>	Not reported
<b>Reproductive Toxicity:</b>	No evidence reported
<b>Mutagenicity:</b>	No evidence reported
<b>Synergistic Products:</b>	Methyl methacrylate 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

**Canadian Transportation of Dangerous Goods Regulations:** Adhesives, Class 3, UN 1133, PG II (When packaged for the consumer market place, it may be shipped under Consumer Commodity designation)

**International Air Transport Association (IATA):** Adhesives, Class 3, UN 1133, PG II

**International Maritime Organization (IMO):** Adhesives (Limited Quantity), Class 3, UN 1133, PG II, Flash Point = 9°C, EmS F-E, S-D, Stowage Category "A"

## 15. Regulatory Information

### CANADIAN FEDERAL REGULATIONS:

**CEPA, DOMESTIC SUBSTANCES LIST:** Listed

**WHMIS CLASSIFICATION:** B2, D2A, D2B, F

### UNITED STATES REGULATIONS:

**29CFR 1910.1200:** Hazardous

**40CFR 116-117:** Hazardous

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<b>40CFR 355, Appendices A and B:</b>	Not subject to Emergency Planning and Notification
<b>40CFR 372:</b>	Listed
<b>40CFR 302:</b>	Listed, Reportable Quantity, 1000 lbs (454 Kg)

**16. Other Information**

**Original Preparation Date:** October 08, 2002

**Prepared by:** Kel-Ex Agencies Ltd., P.O. Box 52201, Lynnmour RPO, North Vancouver, BC, Canada, V7J 3V5

Comments: This Material Safety Data Sheet was prepared using information provided by Duraglas Composites Corp, and CCINFO.

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