Package For/Supply By:





1

MATERIAL SAFETY DATA SHEET

PRODUCT IDENTIFICATION

| Product Name: | TIM-818 EX |
|-----------------|------------------------------------|
| Product Number: | Delta Bond 156-K |
| Product Type: | Thermally Conductive Acrylic Resin |

II. COMPOSITION

| Ingredients | % |
|---------------------------|-------|
| Alumina* | 70-75 |
| Alkyl Methacrylate | 15-20 |
| Hydroxyalkyl Methacrylate | 5-10 |
| Elastomer | 5-10 |
| Cumene Hydroperoxide* | 1-2 |
| Saccharin* | 0.1-1 |
| Maleic Acid | 0.1-1 |

*This component is listed as a SARA Section 313 Toxic Chemical.

III. CHEMICAL AND PHYSICAL PROPERTIES

| Vapor Pressure: | Unknown Unknown |
|---------------------------------|--------------------|
| Vapor Density: | 0 |
| Solubility in Water: | Slight |
| Specific Gravity: | 1.6 |
| Boiling Point: | 300°F |
| Volatile Organic Compound | |
| (EPA Method 24) | |
| Evaporation Rate (Ether $= 1$) | |
| Appearance: | Blue paste |
| pH: | |
| Odor: | Mild Odor |

IV. FLAMMABILITY AND EXPLOSIVE PROPERTIES

| Flash Point: | 200°F | Method: TCC |
|------------------------------------|---------------------|-------------|
| Estimated NFPA Code: | | |
| Fire Hazard: | 1 | |
| Reactivity Hazard: | 1 | |
| Specific Hazard: | Does not apply | |
| Estimated HMIS Code: | | |
| Health Hazard: | 2 | |
| Flammability Hazard: | 1 | |
| Reactivity Hazard: | 1 | |
| Personal Protection: | Does not apply | |
| Explosive Limits: | | |
| (% by volume in air) Lower | DNA | |
| (% by volume in air) Upper | DNA | |
| Recommended Extinguishing Agents: | CO2, Foam, Dry Chen | nical |
| Hazardous Products Formed by Fire | | |
| Or Thermal Decomp: | | |
| Unusual Fire or Explosion Hazards: | None | |
| Compressed Gases: | | |
| Pressure at Room Temp: | | |



Package For/Supply By:



V. SPILL OR LEAK AND DISPOSAL PROCEDURES

Steps to be taken in case of spill or leak:

Scrape up as much as possible. Residues may be cleaned with solvent. Store in partly filled, closed container until disposal. Landfill or incinerate following EPA and Local regulation.

Recommended methods of disposal:

VI. STORAGE AND HANDLING PROCEDURES

| Storage: | Store below 110°F to preserve shelf life. |
|-----------|---|
| Handling: | Avoid prolonged skin contact. |

VII. SHIPPING REGULATIONS

| DOT | (49 CFR 172) | |
|-----|---------------------------|--------------|
| | Proper Shipping Name | Unrestricted |
| | Hazard Class or Division: | Unrestricted |
| | Identification Number | None |

IATA

| Proper Shipping Name: | Unrestricted |
|-----------------------|--------------|
| Class or Division: | Unrestricted |
| UN or ID Number: | None |

IMO

| Substance | NA |
|-------------------------|----|
| Marine Pollutant Status | NA |
| Class | NA |
| Subsidiary Risk | NA |
| IMDG Code Page | NA |
| UN Number | NA |

VIII. REACTIVITY DATA

| Stability: | Stable |
|----------------------------------|----------------|
| Hazardous Polymerization: | Will not occur |
| Hazardous Decomposition Products | |
| (non-thermal): | None |
| Incompatibility: | None |

IX. EMERGENCY TREATMENT PROCEDURES

| Ingestion: | Do NOT induce vomiting. Keep individual calm. Obtain medical attention. Low toxicity. |
|---------------|--|
| Inhalation: | Remove to fresh air. |
| Skin Contact: | Wash with soap and water and flush for at least 15 minutes with water. Obtain medical attention. |
| Eye Contact: | Wash with water and flush for at least 15 minutes with water. Obtain medical attention. |

X. PERSONAL PROTECTION

| Eyes: | Safety glasses or goggles |
|--------------|---------------------------------------|
| Skin: | Impermeable rubber or plastic gloves. |
| Ventilation: | Not normally needed |

 XI. HEALTH HAZARD DATA

 Toxicity:

 Primary Routes of Entry:

 Signs and Symptoms of Exposure:

 Prolonged contact with sensitive individuals may cause dermatitis.



Existing Conditions Aggravated By Exposure:

KEFIELD 33 Bridge Street, Pelham, NH 03076 Phone: (603) 635-2800 Fax: (603) 635-1900

www.wakefield.com

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| Exposure Limits (TWA) Ingredients | ACGIH (TLV) | OSHA (PEL) | Other |
|--|-------------------|-----------------|---------------|
| Alumina Alkyl Methacrylate | 10 mg./m3 None | 15mg/m3 None | None None |
| Hydroxyalkyl Methacrylate | None | None | 3 ppm ceiling |
| Elastomer | None | None | None |
| Cumene Hydroperoxide | None | None | None |
| Saccharin | None | None | None |
| Maleic Acid | None | None | None |
| Exposure Limits (STEL) | ACGIH | OSHA | |
| | (TLV) | (PEL) | |
| Ingredients for which no Exposure Limits have been established are not listed above. | | | |

| | | Literature Refere | enced | | | Carcino | gen | |
|------------------------|------------|-------------------|-------------|--------------------|-----|---------|---------------|------|
| Ingredients | | Target Organ an | d Other Hea | alth Effects | | NTP | IARC | OSHA |
| Alumina | No data | | | No | No | No | | |
| Alky Methacrylate | | No data | | | | No | No | No |
| Hydroxyalkyl Methacryl | ate | ALG KID LIV | | | No | No | 3 ppm ceiling | |
| Elastomer | | ALG KID LIV | | | No | No | 3 ppm ceiling | |
| Cumene Hydrperoxide | | MUT SOM | | | No | No | No | |
| Saccharin | | MUT | | | Yes | 2B | No | |
| Maleic Acid | | IRR | | | | No | No | No |
| Abbreviations | | | | | | | | |
| ALG Allergen SOM | LUN MUT | Lungs Mutagen | KID IRR | Kidney Irritant | LIV | Liver | | |

XII. PREPARATION INFORMATION

| Prepared by: | Prakash Khatri |
|--------------|--------------------|
| Title: | Technical Director |
| Revision: | February, 2010 |

NOTICE

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*This component is listed as a SARA Section 313 Toxic Chemical.

III. CHEMICAL AND PHYSICAL PROPERTIES

| Vapor Pressure: | Unknown Unknown |
|---------------------------------|--------------------|
| Vapor Density: | 0 |
| Solubility in Water: | Slight |
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| Boiling Point: | 300°F |
| Volatile Organic Compound | |
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|------------------------------------|---------------------|-------------|--|
| Estimated NFPA Code: | | | |
| Fire Hazard: | 1 | | |
| Reactivity Hazard: | 1 | | |
| Specific Hazard: | Does not apply | | |
| Estimated HMIS Code: | | | |
| Health Hazard: | 2 | | |
| Flammability Hazard: | 1 | | |
| Reactivity Hazard: | 1 | | |
| Personal Protection: | Does not apply | | |
| Explosive Limits: | | | |
| (% by volume in air) Lower | DNA | | |
| (% by volume in air) Upper | DNA | | |
| Recommended Extinguishing Agents: | CO2, Foam, Dry Chen | nical | |
| Hazardous Products Formed by Fire | | | |
| Or Thermal Decomp: | | | |
| Unusual Fire or Explosion Hazards: | None | | |
| Compressed Gases: | | | |
| Pressure at Room Temp: | | | |



Package For/Supply By:



V. SPILL OR LEAK AND DISPOSAL PROCEDURES

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| Handling: | Avoid prolonged skin contact. |

VII. SHIPPING REGULATIONS

| DOT | (49 CFR 172) | |
|-----|---------------------------|--------------|
| | Proper Shipping Name | Unrestricted |
| | Hazard Class or Division: | Unrestricted |
| | Identification Number | None |

IATA

| Proper Shipping Name: | Unrestricted |
|-----------------------|--------------|
| Class or Division: | Unrestricted |
| UN or ID Number: | None |

IMO

| Substance | NA |
|-------------------------|----|
| Marine Pollutant Status | NA |
| Class | NA |
| Subsidiary Risk | NA |
| IMDG Code Page | NA |
| UN Number | NA |

VIII. REACTIVITY DATA

| Stability: | Stable | |
|----------------------------------|----------------|--|
| Hazardous Polymerization: | Will not occur | |
| Hazardous Decomposition Products | | |
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| Hydroxyalkyl Methacrylate | None | None | 3 ppm ceiling |
| Elastomer | None | None | None |
| Cumene Hydroperoxide | None | None | None |
| Saccharin | None | None | None |
| Maleic Acid | None | None | None |
| Exposure Limits (STEL) | ACGIH | OSHA | |
| | (TLV) | (PEL) | |
| Ingredients for which no Exposure | Limits have been established | are not listed above. | |

| | Literature Referenced | | | Carcinogen | | | | |
|------------------------|-----------------------|------------------|-------------|--------------------|-----|-------|---------------|------|
| Ingredients | | Target Organ an | d Other Hea | alth Effects | | NTP | IARC | OSHA |
| Alumina | | No data | | | No | No | No | |
| Alky Methacrylate | | No data | | No | No | No | | |
| Hydroxyalkyl Methacryl | ate | ALG KID LIV | | | No | No | 3 ppm ceiling | |
| Elastomer | | ALG KID LIV | | | No | No | 3 ppm ceiling | |
| Cumene Hydrperoxide | | MUT SOM | | | No | No | No | |
| Saccharin | | MUT | | | Yes | 2B | No | |
| Maleic Acid | | IRR | | | | No | No | No |
| Abbreviations | | | | | | | | |
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