

Material Safety Data Sheet

UV640

Issue date: 12/06/13

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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| Product Name: PERMABOND UV640 | MSDS REQUESTS: HELP LINE: 732-868-1372 or 800-640-7599 |
| Product Type: Light Curing Adhesive | Website: www.permabond.com |
| Company: PERMABOND | |
| 14 Robinson Street | Medical: Poison Control Center 866-827-6282 |
| Pottstown, PA 19464 | Transport: CHEMTREC 800-424-9300 |
| USA | |

2. COMPOSITION / INFORMATION ON INGREDIENTS

| Hazardous components | % | ACGIH TLV | OSHA PEL | OTHER |
|---|---------|--|---|---|
| 2-Hydroxyethyl methacrylate 868-77-9 | 1 – 20 | None | None | 3 ppm (ceiling) |
| Modified acrylamide 2680-03-7 | 10 – 20 | None | None | 0.1mg/m ³ TWA (skin) 0.025 ppm TWA (skin) |
| Tetrahydrofurfuryl Methacrylate 2455-24-5 | 10 – 30 | None | None | None |
| Acrylate Esters 5888-33-5 | 10 – 40 | None | None | None |
| Diphenyl (2,4,6-trimethylbenzoyl) phosphine oxide 75980-60-8 | 1 – 5 | None | None | None |
| Treated Fumed Silica 67762-90-7 | 1 – 5 | 10mg/m ³ Inhalable fraction, 3 mg/m ³ respirable fraction, TWA | 5mg/m ³ Respirable dust, 15 mg/m ³ total dust | None |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HMIS:

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|-------------------------------|-----------------------------|---------------|
| Physical state: Liquid | HEALTH: | 2* |
| Color: Clear | FLAMMABILITY: | 1 |
| Odor: Mild | PHYSICAL HAZARD: | 1 |
| | Personal Protection: | See Section 8 |

WARNING: COMBUSTIBLE LIQUID.
 CAUSES EYE AND SKIN IRRITATION
 MAY CAUSE ALLERGIC SKIN REACTION
 MAY BE HARMFUL IF SWALLOWED OR INHALED OR ABSORBED THROUGH THE SKIN

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects

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| Inhalation: | Modified acrylamide is harmful if inhaled. May cause irritation to nose and throat. Do NOT heat or spray as this increases the inhalation hazard. |
| Skin contact: | Modified acrylamide may be absorbed through the skin in harmful amounts. Irritating to skin. May cause allergic skin reaction. |
| Eye contact: | Vapors may irritate eyes. Contact with eyes will cause irritation. |
| Ingestion: | Modified acrylamide is harmful if swallowed. May cause gastrointestinal tract irritation if swallowed. |
| Existing conditions aggravated by exposure: | Skin disorders. Eye disorders. |

See Section 11 for additional toxicological information.

4. FIRST AID MEASURES

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| Inhalation: | Remove to fresh air. If symptoms develop and persist, get medical attention. |
| Skin contact: | Wash with soap and water. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if symptoms occur. |
| Eye contact: | Flush with copious amounts of water, preferably, lukewarm water for at least 15 minutes, holding eyelids open all the time. Get medical attention. |
| Ingestion: | Do not induce vomiting. Keep individual calm. Obtain medical attention. |

5. FIRE-FIGHTING MEASURES

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| Flash point: | 71°C (160°F) Tagliabue closed cup |
| Autoignition temperature: | Not available |
| Flammable/Explosive limits-lower %: | Not available |
| Flammable/Explosive limits-upper %: | Not available |
| Extinguishing media: | Foam, dry chemical or carbon dioxide. |
| Special fire fighting procedures: | Wear self-contained breathing apparatus and full protective clothing |
| Unusual fire or explosion hazards: | Uncontrolled polymerization may occur at high temperatures |
| Hazardous combustion products: | Oxides of carbon. Oxides of nitrogen. Irritating organic vapors. |

6. ACCIDENTAL RELEASE MEASURES

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| Environmental precautions: | Prevent product from entering drains or open waters. Remove sources of ignition. |
| Clean-up methods: | Remove all ignition sources. Ensure adequate ventilation. Soak up with inert absorbent. Store in a partly filled, closed container until disposal. |

7. HANDLING AND STORAGE

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| Handling: | Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Keep away from heat, spark and flame. Use only with adequate ventilation. |
| Storage: | Store away from heat, sparks, flames, or other sources of ignition. For safe storage, store between 5°C and 25°C (41°F and 77°F). |
| Incompatible products: | Refer to Section 10. |

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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| Engineering controls: | Use local exhaust ventilation to maintain airborne concentrations below established exposure limits. |
| Respiratory protection: | Use NIOSH approved respirator if there is potential to exceed exposure limit(s). |
| Skin protection: | Use impermeable gloves and protective clothing as necessary to prevent skin contact. Neoprene gloves. |
| Eye/face protection: | Safety goggles or safety glasses with side shields. See Section 2 for exposure limits. |

9. PHYSICAL AND CHEMICAL PROPERTIES

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|---|-----------------------------------|
| Physical state: | Liquid |
| Color: | Clear |
| Odor: | Mild |
| Vapor pressure: | Less than 10 mm Hg at 24°C (75°F) |
| pH: | Not applicable |
| Boiling point/range: | Greater than 93°C (200°F) |
| Melting point/range: | Not available |
| Specific gravity: | 1.1 |
| Vapor density: | Not available |
| Evaporation rate: | Not available |
| Solubility in water: | Slight |
| Partition coefficient (n-octanol/water): | Not available |
| VOC content: | <4 %, 42 grams/liter |

10. STABILITY AND REACTIVITY

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| Stability | Stable. |
| Hazardous polymerization: | Will not occur. |
| Hazardous decomposition products: | Oxides of carbon. Oxides of nitrogen. Irritating organic vapors. |
| Incompatibility: | Strong oxidizers. |
| Conditions to avoid: | Heat, flames, sparks and other sources of ignition. |

11. TOXICOLOGICAL INFORMATION

Carcinogen Status

| Hazardous components | NTP Carcinogen | IARC Carcinogen | OSHA Carcinogen |
|--|----------------|-----------------|-----------------|
| 2-Hydroxyethyl methacrylate 868-77-9 | No | No | No |
| Modified acrylamide 2680-03-7 | No | No | No |
| Tetrahydrofurfuryl Methacrylate 2455-24-5 | No | No | No |
| Acrylate Esters 5888-33-5 | No | No | No |
| Diphenyl (2,4,6-trimethylbenzoyl) phosphine oxide 75980-60-8 | No | No | No |
| Treated fumed silica | No | No | No |

| Hazardous components | Health Effects/Target Organs |
|--|--|
| 2-Hydroxyethyl methacrylate 868-77-9 | Allergen, irritant |
| Modified acrylamide 2680-03-7 | Less weight gain and food intake., Mutagen, Kidney, Irritant, Eyes |
| Tetrahydrofurfuryl Methacrylate 2455-24-5 | Allergen, Irritant |
| Acrylate Ester 5888-33-5 | Allergen, Irritant |
| Diphenyl (2,4,6-trimethylbenzoyl) phosphine oxide 75980-60-8 | No data |
| Treated fumed silica | Irritant |

12. ECOLOGICAL INFORMATION

Ecological information: Not available

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Dispose of according to Federal, State and local governmental regulations.

Not a RCRA hazardous waste.

EPA hazardous waste number:

14. TRANSPORT INFORMATION

The shipment information in this section is for non-bulk packaging. Shipping classification might be different for bulk packaging.

U.S. Department of Transportation Ground (49 CFR):

Proper shipping name: Unrestricted
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA):

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|----------------------------------|--------------|
| Proper shipping name: | Unrestricted |
| Hazard class or division: | None |
| Identification number: | None |
| Packing group: | None |

Water Transportation (IMO/IMDG):

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|----------------------------------|--------------|
| Proper shipping name: | Unrestricted |
| Hazard class or division: | None |
| Identification number: | None |
| Packing group: | None |
| Marine pollutant: | None |

15. REGULATORY INFORMATION

United States Regulatory Information

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| TSCA 8 (b) Inventory Status: | All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory. |
| TSCA 12 (b) Export Notification: | 4-Methoxyphenol (150-76-5). |
| CERCLA/SARA Section 302 EHS: | None above reporting de minimus. |
| CERCLA/SARA Section 311/312: | Immediate Health Hazard, Delayed Health Hazard |
| CERCLA/SARA 313: | This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). None. |
| California Proposition 65: | This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. |

16. OTHER INFORMATION

This MSDS was reviewed and released with new date 12/06/13

This material safety data sheets contains changes from the previous one in section1: Transport Emergency Number was changed.

ADDITIONAL INFORMATION: The information given and the recommendations made herein apply to our product(s) alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guaranty of accuracy is made. It is the purchaser's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.