



Revision Date: March 21, 2006

## **KiON® Defense Technologies, Inc.**

1957 Pioneer Road, Building A, Huntingdon Valley, Pennsylvania 19006

Phone: 1-215-682-2060

Fax: 1-215-674-1589

24-Hour Emergency Phone:

CHEMTREC (USA) 1-800-424-9300, (International) 1-703-527-3887

## **MATERIAL SAFETY DATA SHEET**

### **SECTION 1 Chemical Product Identification**

NAME: **KDT Thermal Cure Coating Resin**

PRODUCT CODE: KDT-1034

### **SECTION 2 Composition/Information on Ingredients**

COMPOSITION:

CASRN:	503590-70-3
Chemical Name:	Proprietary Polysilazane Resin
Chemical Identity:	Polysilazane
Percent:	>99 %

### **SECTION 3 Hazards Identification**

HMIS RATINGS

Health hazard	3	Serious
Flammability hazard	3	Serious
Reactivity hazard	1	Slight

POTENTIAL HEALTH EFFECTS:

Signs and Symptoms of Overexposure in the Workplace:

**WARNING:** Corrosive, Flammable liquid  
May cause severe eye irritation or eye burns.  
Causes skin burns with redness, pain and swelling.  
May cause irritation of mucous membranes if vapor or mist is inhaled.

Medical Conditions Aggravated by Exposure: None known

Product Code: KDT-1034

Primary Routes of Exposure/Entry:

Eye or skin contact; inhalation of dust. Ingestion unlikely.

Note: Contact of this product with moisture can produce ammonia, which can cause irritation of the eyes, skin, nose, throat, lungs, etc.

**SECTION 4 First-Aid Measures**

**EYE EXPOSURE:**

In case of contact with eyes immediately flush with copious amounts of water for at least 15 minutes. If irritation or redness persists seek medical treatment.

**DERMAL EXPOSURE:**

In case of contact with skin or clothing; remove contaminated clothing and wash skin thoroughly with soap and water. If irritation or redness persists seek medical treatment.

**INHALATION EXPOSURE:**

If inhaled, remove to fresh air. If breathing is difficult, give oxygen and seek immediate medical assistance. If not breathing give artificial respiration and seek immediate medical assistance.

**ORAL EXPOSURE:**

If swallowed do not induce vomiting. Seek immediate medical treatment.

**SECTION 5 Fire Fighting Measures**

**EXTINGUISHING MEDIA:**

Carbon dioxide, dry chemical powder or appropriate foam.

**SPECIAL FIREFIGHTING PROCEDURES:**

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Use water spray to cool fire-exposed containers.

**UNUSUAL FIRE AND EXPLOSIONS HAZARDS:**

Container explosion may occur under fire conditions.

May emit toxic fumes under fire conditions.

**SECTION 6 Accidental Release Measures**

For small spills: Cover with an inorganic absorbent, like vermiculite, perlite, ground clay, or sand, sweep up, and dispose appropriately.

Product Code: KDT-1034

For large spills: Dike to contain and pump into drums for use or disposal. If any material remains add inorganic absorbent (as above), sweep up, and dispose appropriately. Clean contaminated area with soap and water. In case of accidental spill or release, refer to Section 8, Personal Protective Equipment and General Hygiene Practices.

## **SECTION 7 Handling and Storage**

Flammable. Store in areas designated for flammable liquid storage (see NFPA requirements). Keep away from heat, sparks, and open flame. Keep tightly closed. Vent periodically to release head pressure.

## **SECTION 8 Exposure Controls/Personal Protection**

### **APPROPRIATE HYGIENIC PRACTICES:**

Avoid contact with eyes, skin, and clothing. Avoid breathing vapors, fumes and mists. Avoid prolonged or repeated exposure. Wash thoroughly after handling, and before eating, drinking, or smoking.

### **ENGINEERING CONTROLS:**

Engineering controls should always be used when available as a first choice over personal protective equipment. Provide adequate ventilation. Use of fume hoods or closed booths recommended when product is used in a manner that may generate mist or aerosol.

### **PERSONAL PROTECTIVE EQUIPMENT:**

Normal laboratory protective clothing recommended, i.e. lab coat and/or apron, impervious gloves and safety glasses. If mists or aerosols are generated during handling, and engineering controls are not present to prevent exposure, wear chemical safety goggles and a respirator equipped with an organic vapor cartridge.

### **WORK PRACTICES:**

Easily accessible eyewash fountains and safety showers recommended.

### **PROTECTIVE MEASURES DURING REPAIR AND MAINTENANCE:**

Completely isolate and thoroughly clean all equipment, piping or vessels with high flash non-polar solvents before beginning maintenance or repairs.

## **SECTION 9 Physical and Chemical Properties**

**APPEARANCE AND ODOR:** Liquid, clear to pale yellow. May detect slight odor of ammonia immediately after opening container.

Product Code: KDT-1034

**PHYSICAL PROPERTIES:**

Boiling Point: Not applicable, material slowly cross-links to a solid upon heating.  
Flash Point: 29°C (84°F) closed cup  
Specific Gravity: 1.020  
Viscosity: 80 cps at 19°C (67°F) nominal  
Refractive Index: 1.4900 at 23°C (69°F)  
Water Solubility/Miscibility: Virtually Insoluble (reacts slowly with water)

**SECTION 10 Stability and Reactivity**

STABILITY: Stable

**INCOMPATIBILITIES:**

Reacts vigorously and exothermically with isocyanates. Material will react slowly with water and other protic solvents. This product may react with mineral acids, alkalis, and oxidizing agents. Caution should be taken when mixing this product with any of these materials.

**HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS:**

Carbon monoxide, Carbon dioxide, Silicon dioxide

HAZARDOUS POLYMERIZATION: Will not occur.

**SECTION 11 Toxicological Information****CARCINOGENICITY INFORMATION:**

Not listed as a carcinogen by NTP (National Toxicology Program]; not regulated as a carcinogen by OSHA (Occupational Safety and Health Administration); not evaluated by IARC (International Agency for Research on Cancer).

**REPORTED HUMAN EFFECTS:**

No human studies have been conducted with this material. The use of recommended protective equipment should prevent any adverse effects. KDT has not received any reports of adverse effects from workers handling this material.

**REPORTED ANIMAL EFFECTS:**

Oral LD50, rat: > 2,000 mg/kg.  
Skin irritation, rabbit: severe erythema with signs of necrosis after 1-hour exposure.

**SECTION 12 Ecological Information**

This material may be hazardous to aquatic organisms. Avoid release to surface waters and waste treatment systems.

Product Code: KDT-1034

**SECTION 13 Disposal Considerations**

Do not mix this product with aqueous or other protic wastes streams. Incineration of combustible waste material in a permitted facility in accordance with the local, state, and federal regulations is the recommended disposal method.

**SECTION 14 Transportation Information**

US DOT: Corrosive liquid, flammable  
IATA: UN 2920, Corrosive liquid, flammable, n.o.s., (polysilazane), 8 (3), II

**SECTION 15 Regulatory Information**

SARA 313: This product does not contain any chemicals subject to reporting under Section 313 of Title III of the Superfund Amendments and Reauthorization Act and 40CFR372.

CERCLA: This product does not contain any chemicals subject to reporting as a CERCLA Hazardous Substance under 40CFR302.4.

TSCA: This product is TSCA listed.

## EU Labeling

C: Corrosive  
F: Flammable

## EU Risk and Safety Phrases:

R10: Flammable  
R35: Causes severe skin burns.  
S16: Keep away from sources of ignition. No smoking.  
S23: Do not breathe gas/fumes/vapor/spray.  
S24/25/26: Avoid contact with skin and eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S28: After contact with skin, wash immediately with plenty of water.  
S37/39: Wear suitable gloves and eye/face protection.

**SECTION 16 Other Information**

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. KDT shall not be held liable for any damage resulting from handling or from contact with the above product.