MATERIAL SAFETY DATA SHEET

For 1 Shot/Chromatic Liquid Coatings and Associated Liquid Materials

Distributed By:
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I. CHEMICAL PRODUCT IDENTIFICATION

Product Name : **"1-Shot" Hardener (4007)**

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II. COMPOSITION/INFORMATION ON INGREDIENTS - *(EXPOSURE LIMITS - SEE SECTION VIII)*

INGREDIENT NAME	CAS #	%
Resin, Polyisocyanate	TS18210000	50.01 - 75.00
Xylene	1330-20-7	25.01 - 30.00
Methoxypropanol acetate	108-65-6	10.01 - 15.00
Ethylbenzene	100-41-4	5.01 - 10.00

If ingredient percentages do not total 100%, the balance is due to rounding or applies to ingredient(s) deemed nonhazardous under 29 CFR 1910.1200 (Hazard Communication Standard).

III. HAZARDS IDENTIFICATION

	HMIS
HEALTH	2 *
FLAMMABILITY	3
REACTIVITY	0

0 = Least 1 = Slight 2 = Moderate 3 = High 4 = Extreme * = Chronic Health Effects

Routes of Entry: Eye contact, Inhalation, Skin contact, Absorption, Ingestion.

Medical Conditions Aggravated: Eye disease, Liver disease, Kidney disease, Skin disease including eczema and sensitization, Digestive tract disease, Lung disease.

Immediate (Acute) Health Effects:

Inhalation: Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache. Vapors or mist of Hexamethylene Diisocyanate (HDI) or polyisocyantates can irritate mucous membranes in the respiratory tract causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and obstruct breathing. Susceptible individuals with preexisting bronchial hyperreactivity may exhibit similar symptoms at low concentrations in addition to an asthma attack. High exposure may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitive pneumonitis (flu-like symptoms, including fever and chills) is possible. These effects are usually reversible.

Skin Contact: HDI and polyisocyanates can cause skin irritation with symptoms such as reddening, swelling, rash, scaling and blistering. Skin sensitization is possible in some individuals. Cured HDI is difficult to remove. Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.

Eye Contact: Contact with the eyes may cause moderate to severe eye injury. Eye contact may result in tearing and reddening, but not likely to permanently injure eye tissue. Temporary vision impairment (cloudy or blurred vision) is possible. Liquid, aerosols and vapors of this product are irritating and can cause pain, tearing, reddening and swelling accompanied by a stinging sensation.

Skin Absorption: Harmful if absorbed through the skin. May cause severe irritation and systemic damage.

Ingestion: May be slightly toxic by ingestion. Can cause abdominal discomfort, nausea, vomiting and diarrhea.

Target Organ Acute Toxicity: CNS, Eyes, Blood, Liver, Kidneys, Skin, Digestive Tract, Respiratory System, Thyroid, Pituitary, Testes.

Long-Term (Chronic) Health Effects:

Inhalation: Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache. Overexposure to isocyanates like HDI and polyisocyanates can induce isocyanate sensitization (chemical asthma). Individuals with this condition will react to an isocyanate exposure at levels well below acceptable exposure limits. Symptoms such as chest tightness, wheezing, cough, shortness of breath or asthmatic attack could be immediate or delayed up to several hours after exposure. Dust, cold air or other irritants can trigger symptoms in sensitized individuals. This can persist for weeks and in severe cases for several years. Chronic overexposure to isocyanates can cause physiological changes in the lungs and a decrease in lung function. Lung damage may be permanent. Pulmonary sensitization may be either temporary or permanent.

Skin Contact: Upon prolonged or repeated contact, can cause minor skin irritation, defatting, and dermatitis. Prolonged contact with HDI or polyisocyanates can cause symptoms similar to acute skin exposure (see above). In skin sensitized individuals symptoms can develop after contact with very small amounts or even as a result of vapor-only exposure.

Eye Contact: Upon prolonged or repeated contact, can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.

Skin Absorption Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause severe irritation and systemic damage.

Carcinogenicity: IARC: Yes NTP: No OSHA: No

Target Organ Chronic Toxicity: CNS, Eyes, Blood, Liver, Kidneys, Skin, Digestive Tract, Respiratory System, Pituitary, Testes.

NOTICE - Reports have associated repeated and prolonged occupational overexposure to solvents with brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Lifetime inhalation exposure of rats and mice to high concentrations of ethylbenzene (750 ppm) resulted in increases in certain types of cancer, including kidney, lung and liver tumors. Testicular adenomas were increased as were thyroid effects in rats at 750 ppm. Pituitary effects were observed in female mice at 250 ppm. These effects were absent when exposure was below 75 ppm ethylbenzene. The study does not address the relevance of these results to humans.

IV. FIRST AID

Inhalation: Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.

Eyes: Immediately flush eyes with plenty of luke warm water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician.

Skin Contact: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

Ingestion: Seek medical advice immediately. Provide ingredients information from Section II of this MSDS to the medical care provider. Contact your local Poison Control Center (listed in the telephone book), or dial the local "Emergency" (911) number for additional information. Do not induce vomiting unless instructed to do so by a physician or other competent medical personnel. Never give anything by mouth to an unconscious person.

V. FIRE FIGHTING MEASURES

Flammability Summary: **Highly Flammable**

Flash Point: 21 °C; 70 °F

Autoignition Temperature: 333 °C; 631 °F

Lower Flammable/Explosive Limit, % in air: 1.1 **Upper Flammable/Explosive Limit, % in air:** 13.1

Fire Hazards: Can release vapors that form explosive mixtures at temperatures at or above the flash point. Empty containers that retain product residue (liquid, solid/sludge, or vapor) can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind or crush used containers. Do not expose containers or product to heat, flame, sparks, static electricity, or other sources of ignition. Any of these actions can potentially cause an explosion that may lead to injury or death. Vapors may be ignited by sparks, flames or other sources of ignition if material is above the flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and flash back. This product, when dried or cured, may support combustion when subjected to sources of ignition or heat in sufficient amount.

Extinguishing Media: Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water may be ineffective but water spray can be used to extinguish a fire if swept across the base of the flames. Water can absorb heat and keep exposed material from being damaged by fire.

Fire Fighting Instructions: Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Use methods for the surrounding fire. Flammable component(s) of this material may be lighter than water and burn while floating on the surface.

Hazardous Combustion Products: Carbon dioxide, Carbon monoxide, Nitrogen containing gases, Hydrogen cyanide, Isocyanates.

VI. ACCIDENTAL RELEASE MEASURES

Health Consideration for Spill Response: Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section VIII of this MSDS. Additional precautions may be necessary based on special circumstances created by the spill including: the material spilled, the quantity of the spill, and the area in which the spill occurred. Also consider the expertise of employees in the area responding to the spill. Evaporation of volatile substances can lead to the displacement of air creating an environment that can cause asphyxiation.

Spill Mitigation Procedures:

General Methods: Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section VIII at a minimum. For liquid spills, dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation. Shut off ignition sources; including electrical equipment and flames. Do not allow smoking in the area.

Air Release: Ventilate the area by opening door and/or turning on fans and blowers.

Water Release: Retain all contaminated water for treatment.

Land Spills: Avoid runoff into storm sewers and ditches that lead to waterways.

VII. HANDLING AND STORAGE

Handling: Harmful or irritating; avoid overexposure to the material. Use only in a well ventilated area. As with all chemicals, good industrial hygiene practices should be followed when handling this material. Use spark-proof tools and explosion-proof equipment. Do not get in eyes, on skin and clothing. Ground and bond containers when transferring material. Keep in air-tight containers- material is hygroscopic. Remove contaminated clothing and wash before reuse.

Storage: Store in a cool dry ventilated location. Isolate from incompatible materials and conditions. Keep container(s) closed when not in use. Keep away from sources of ignition. Store in a tightly closed container.

VIII. ENGINEERING CONTROLS, PERSONAL PROTECTIVE EQUIPMENT, AND EXPOSURE LIMITS

Engineering Controls: Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure. See table below for exposure limits.Vapor concentrations should be monitored and controlled in accordance with 29 CFR 1910.1000. Explosion proof exhaust ventilation should be used. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Protective Equipment:

Respiratory Tract: If general or local exhaust ventilation is not available or sufficient to reduce exposure to below acceptable levels, then respiratory protection is required to avoid overexposure when handling this product.

Eyes: Wear safety glasses with side shields when handling this product. When the possibility exists for eye contact with splashing or spraying liquid, or airborne material, wear additional eye protection such as chemical splash goggles and/or face shield . Do not wear contact lenses. Have an eye wash station available.

Skin: Wear protective gloves. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

Protective Clothing: Wear chemically resistant gloves and apron. (Consult your safety equipment supplier).

CHEMICAL NAME	CAS #	ACGIH TLV	OSHA PEL	IDLH
Resin, Polyisocyanate	TS18210000	No TLV	No PEL established	Not determined.
Xylene	1330-20-7	100 ppm TWA 150 ppm STEL	100 ppm TWA; 435 mg/m3 TWA	900 ppm IDLH
Methoxypropanol acetate	108-65-6	No TLV	No PEL established	Not determined.
Ethylbenzene	100-41-4	100 ppm TWA 125 ppm STEL	100 ppm TWA; 435 mg/m3 TWA	800 ppm IDLH

IX. PHYSICAL DATA

Appearance: Clear Liquid.
Color: Clear
Odor: Aromatic
pH: N/A
Octanol/Water Coeff: Not Determined.
Solubility in Water: Low.
Vapor Density: Heavier than air. Vapors that evolve from this product will tend to settle and accumulate near the floor.
Evaporation Rate: Slower than n-Butyl Acetate.
Specific Gravity/Density: 1.03 / 8.6 Lbs./Gl.
V.O.C. 3.82 Lbs/Gl less water & exempt solvent; 458 g/l less water & exempt solvent; 3.8 Lbs/Gl as packed

The VOC content is determined by using a percent solids basis, less water and exempt solvents, for adhesives, coatings and inks and the calculations of EPA Reference Method 24 or equivalent ASTM method approved by the executive office.

Initial Boiling Point: 133 ºC; 271 ºF

X. STABILITY AND REACTIVITY

Stability Information: Stable under normal conditions. Reacts slowly with water to liberate carbon dioxide.
Conditions to Avoid: Sparks, open flame, other ignition sources, and elevated temperatures.Contamination.,
Chemical Incompatibility: Strong alkalies.
Hazardous Decomposition Products: Carbon dioxide, Carbon monoxide, Isocyanates, Hydrogen cyanide, Nitrogen containing gases.

XI. TOXICOLOGICAL INFORMATION

Chemical Name	LD50/LC50
Xylene	Inhalation LC50 Rat: 5000 ppm/4H; Oral LD50 Rat: 4300 mg/kg; Dermal LD50 Rabbit: >1700 mg/kg
Acetic acid, 2-methoxy-1-methylethyl ester	Oral LD50 Rat: 8532 mg/kg; Dermal LD50 Rabbit: >5 gm/kg
Benzene, ethyl-	Oral LD50 Rat: 3500 mg/kg; Dermal LD50 Rabbit: 17800 uL/kg

XII. ECOLOGICAL INFORMATION

Overview: Care should be taken to minimize releases of any industrial chemicals to the environment.

XIII. DISPOSAL CONSIDERATIONS

Waste Description for Unused Product: Spent or discarded material is a hazardous waste.
Disposal Methods: Information in this MSDS is provided only as a guide. Consult with competent authority to determine proper waste disposal procedures. Clean up and dispose of waste and clean-up materials in accordance with all federal, state, and local environmental regulations.

Potential EPA Waste Codes: D001, .

Some Components Possibly Subjected to USEPA Land Disposal Restrictions:

When disposing of unused products or any waste, the preferred options are to send to a licensed reclaimer or to permitted incinerators. There may be some other ingredients subject to LDR categories.

Xylenes (o-, m-, p- isomers)	1330-20-7
Ethyl benzene	100-41-4

XIV. TRANSPORTATION INFORMATION

Agency	Basic Description and Label
DOT	Paint Related Material, 3, UN1263, PG II

Hazardous Substance

Xylenes (isomers and mixture)	RQ = 100 pounds (45.4 kg); also listed as Xylene; also listed as Xylene (mixed); also listed as Benzene, dimethyl-
Ethyl benzene	RQ = 1000 pounds (454 kg)

XV. REGULATORY INFORMATION

Regulation

SARA 313 Reportable : Xylene (mixed isomers), ethylbenzene

TSCA Inventory : All components of this product are listed in, or exempt from, the TSCA 8(b) Inventory.

M.S.D.S. Reportable HAP(s) : Xylenes (nos), ethylbenzene.

California Proposition 65 : The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65: "WARNING: This product contains chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm."

SARA/CERCLA Section 302 : N/A

XVI. ADDITIONAL INFORMATION

Major References: VENDOR'S MSDS's, PAINT & COATINGS HANDBOOK, EPA's LIST OF LISTS, AND OTHER PUBLISHED MATERIALS.

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