

M A T E R I A L S A F E T Y D A T A S H E E T

I. IDENTIFICATION

MANUFACTURED FOR Liberty Bell Equipment Corp.
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General Information:
Mon-Fri 8 AM - 5 PM
712-737-4993

TRADE NAME: ZIP CURE - MEDIUM ACTIVATOR

MFG. PRODUCT NUMBER: 8524

II. HAZARDOUS INGREDIENTS

CAS #28182-81-2	Polymeric Isocyanate	WT %:	20-50
ACGIH TLV:	NA	ACGIH STEL:	NA
OSHA PEL:	NA	OSHA CEILING:	NA
VAPOR PRESSURE:	NA	LEL%:	Unk
CAS #123-86-4	Butyl Acetate	WT %:	20-50
ACGIH TLV:	150 ppm TWA	ACGIH STEL:	200 ppm
OSHA PEL:	150 ppm TWA	OSHA CEILING:	
VAPOR PRESSURE:	7.8mm Hg _{20C}	LEL%:	1.7
Trade Secret		WT %:	5-20
ACGIH TLV:	N.E.	ACGIH STEL:	N.E.
OSHA PEL:	N.E.	OSHA CEILING:	N.E.
VAPOR PRESSURE:		LEL%:	
CAS #64742-95-6	Aromatic 100	WT %:	5-20
ACGIH TLV:	25 ppm TWA	ACGIH STEL:	
OSHA PEL:	25 ppm TWA	OSHA CEILING:	
VAPOR PRESSURE:	2.7mmHg _{20c}	LEL%:	0.9
CAS #1330-20-7	Xylene	WT %:	1-5
ACGIH TLV:	100 ppm	ACGIH STEL:	150 ppm
OSHA PEL:	100 ppm	OSHA CEILING:	NE
VAPOR PRESSURE:	7 mmHg@ _{20C}	LEL%:	1
CAS #100-41-4	Ethyl Benzene	WT %:	0.300
ACGIH TLV:	100 ppm	ACGIH STEL:	125 ppm
OSHA PEL:	100 ppm	OSHA CEILING:	NE
VAPOR PRESSURE:	10 mmHg@ _{20C}	LEL%:	1

WARNING MESSAGES:

- (1) Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Chronic exposure may cause damage to the central nervous system, respiratory system, lung, eye, skin, liver, gastrointestinal tract, spleen, kidneys, and blood.
- (2) International Agency for Research on Cancer (IARC) Monograph Volume 77 (2000) concluded that Ethylbenzene is "possibly carcinogenic to humans (Group 2B)" based on inadequate evidence in humans and sufficient evidence in experimental animals.
- (3) See Section IX for reportable Hazardous Air Pollutants.

III. PHYSICAL DATA

BOILING RANGE: 244-356° F

EVAPORATION RATE: * slower than ether *

PERCENT VOLATILE BY VOLUME: 53.60%

WEIGHT PER GALLON: 8.46 LBS

VAPOR DENSITY: * heavier than air *

ACTUAL VOC (lb/gal): 3.94

EPA VOC (lb/gal): 3.94

EPA VOC (g/L): 472.17

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 22° C 72° F

LEL: Refer to Section II

FLAMMABILITY CLASSIFICATION: CLASS 1B

HAZARD CLASSIFICATION: *Flammable Liquid

EXTINGUISHING MEDIA: Carbon dioxide, dry chemical, foam,
water spray for large fires.

CAUTION! Note that water or foam may cause frothing due to the liberation of carbon dioxide and that the reaction of water with hot isocyanates may be violent. If water is used, it should be used in very large quantities.

UNUSUAL FIRE AND EXPLOSION HAZARDS: With excessive heat, cans will rupture from internal pressure and discharge flammable contents. Vapors may ignite explosively. Keep away from heat, sparks and flame. Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and other sources of ignition during use and until all vapors are gone. Prevent build up of vapors by opening all windows and doors to achieve cross-ventilation.

SPECIAL FIRE FIGHTING PROCEDURES:

During a fire, monomeric isocyanate vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Wear self-contained breathing apparatus and full turn-out gear to fight fire. Isolate from heat, electrical equipment, sparks and open flame. Solvent vapors may be heavier than air. Stagnant air may cause vapors to accumulate and travel along the ground to an ignition source which may result in a flashback to the source of the vapors.

V. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: See Section II.

EFFECTS OF OVEREXPOSURE:

Odor Threshold- There is no available information on the polymeric isocyanate. The odor threshold of monomeric isocyanate is 0.4 ppm. The monomeric isocyanate is considered to have poor warning properties, that is if you can smell it, then it is above the recommended occupational standards for the compound.

Irritation Threshold- The irritation threshold for this product has not been clearly established because those persons sensitized to monomeric isocyanate may show signs and symptoms of irritation at levels far below those that are not sensitized.

Inhalation-

Acute: Exposure may cause mucous membrane and respiratory tract irritation, tightness of chest, headache, shortness of breath, dry cough, dizziness, anesthesia, drowsiness, unconsciousness, asthma like symptoms (coughing, wheezing, and shortness of breath) and other nervous system effects, including death. Minute amounts aspirated into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death. A hyperesensitive pneumonitis may also occur if the person is sensitized. This syndrome is characterized by fever, nonproductive cough, wheezing, chills, and shortness of breath. The effects of acute exposure may be delayed in onset up to 12-24 hours.

Chronic: Repeated exposure may cause an allergic sensitization of the respiratory tract. This is characterized by an asthma-like response upon reexposure to the chemical. The symptoms may include coughing, wheezing, shortness of breath and chest tightness.

Skin-

Acute: Skin contact may cause an irritation consisting of transient redness. This irritant effect would not be expected to result in permanent damage.

Chronic: Repeated contact may cause irritation of the skin and an allergic skin reaction consisting of a hive-like rash on locations not even directly contacted by the liquid.

Eye-

Acute: The effects of liquid directly contacting the eye can be significant. This may result in severe irritation and possible damage to the cornea and impairment of vision. The effects of high vapor concentration may vary from slight irritation with tearing and a burning sensation to keratitis consisting of inflammation of the cornea and impairment of vision.

Ingestion-

Acute: Can result in irritation of the mouth, stomach tissue and digestive tract. Gastroenteritis may result with any

or all of the following symptoms; nausea, vomiting, diarrhea, headache.

Chronic: More pronounced gastroenteritis effects would probably occur if this material was repeatedly ingested.

Target organ toxicity- Irritation to the skin, eyes, mucous membrane and respiratory tract.

Reproductive and developmental toxicity- This material is not known or reported to be a developmental or reproductive toxin.

Carcinogenicity- Xylene contains ethylbenzene which has been classified as a possible carcinogen to humans, Group 2B, by the International Agency for Research on Cancer (IARC), based on sufficient evidence in laboratory animals but inadequate evidence for cancer in humans. Prolonged or repeated overexposure to ethylbenzene may cause the following: Kidney effects, liver effects, lung effects, thyroid effects, testicular effects, pituitary effects.

Mutagenicity- Monomeric isocyanate has been tested to determine its potential for mutagenic activity in the Ames assay and under the conditions of the study was found to be negative. There is no available information on the polymeric isocyanate.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

Asthma, Chronic respiratory disease (e.g. Bronchitis, Emphysema)
Eye disease, Skin disorders and Allergies.

PRIMARY ROUTE(S) OF ENTRY: Eyes, Ingestion, Skin, Inhalation

EMERGENCY AND FIRST AID PROCEDURES:

EYES- Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Call a physician at once.

SKIN- Immediately flush with water for 15 minutes. Wash the contaminated skin with soap and water. If irritation develops, call a physician. If clothing comes in contact with the product, the clothing should be laundered before reuse.

INGESTION- Immediately drink large quantities of water. DO NOT induce vomiting. Call a physician at once. DO NOT give anything by mouth if the person is unconscious or if having convulsions.

INHALATION- If person experiences nausea, headache or dizziness, person should stop work immediately and move to fresh air until these symptoms disappear. If breathing is difficult, administer oxygen, keep the person warm and at rest. Call a physician. In the event that an individual inhales enough product to lose consciousness, person should be moved to fresh air at once and a physician should be called immediately. If breathing has stopped, artificial respiration should be given immediately. In all cases, ensure adequate ventilation and provide respiratory protection

before the person returns to work.

VI. REACTIVITY DATA

STABILITY: *stable*

HAZARDOUS POLYMERIZATION: *will not occur*

INCOMPATIBILITY: Material can react violently with strong bases, strong oxidizing agents, strong reducing agents, water, amines, alcohols, and surface active compounds.

HAZARDOUS DECOMPOSITION PRODUCTS: Burning will produce toxic fumes. CO, nitric oxide, isocyanate-containing vapors.

CONDITIONS TO AVOID:

In the absence of catalyst, the reaction with water is slow and nonviolent, generating carbon dioxide gas. This gas can cause sealed containers to expand and possibly rupture. Elevated temperatures will increase the reaction rate of this material with water. This material should be stored in tightly closed containers to prevent moisture contamination. Do not reseal containers if moisture contamination is suspected.

VII. SPILL OR LEAK PROCEDURES

SPILL/LEAK PROCEDURES: Evacuate nonessential personnel. Remove all sources of ignition and ventilate the area. Notify appropriate authorities if necessary. Put on personal protective equipment. Dike or impound spilled material and control further spillage if feasible. Use vermiculite, Fuller's earth or other absorbent material. Pour decontamination solution over spill area and allow to react for at least 10 minutes. Collect material in open containers and add further amounts of decontamination solution. Remove containers to a safe place, cover loosely, and allow to stand for 24 to 48 hours. Wash down spill area with decontamination solutions. Decontamination solutions: nonionic surfactant Union Carbide's Tergitol TMN-10 (20%) and water (80%); concentrated ammonia (3-8%), detergent (2%) and water (90-95%).

WASTE DISPOSAL METHOD: Waste must be disposed of in accordance with federal, state and local environmental control regulations. Incineration is the preferred method. Empty containers must be handled with care due to product residue. Decontaminate prior to disposal. DO NOT HEAT OR CUT EMPTY CONTAINER WITH ELECTRIC OR GAS TORCH.

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: A respirator that is recommended or approved for use in isocyanate containing environments

(air purifying or fresh air supplied) may be necessary for spray applications or other situations such as high temperature use which may produce inhalation exposures. A supplied air respirator (either positive pressure or continuous flow type) is recommended. Before an air-purifying respirator can be used, air monitoring must be performed to measure airborne concentrations of isocyanate monomer, polymeric isocyanate and organic solvent. During nonspray operations such as mixing, brushing and rolling applications, etc., at elevated temperatures (for example, heating of material or application to a hot substrate), it is possible to be exposed to airborne isocyanate vapors. Therefore, when the coatings system contains solvents and will be applied in a nonspray manner, a supplied-air (either positive pressure or continuous flow type) respirator may be appropriate or mandatory.

VENTILATION: Good industrial hygiene practice dictates that worker protection should be achieved through engineering controls such as ventilation whenever feasible. When such controls are not feasible to achieve full protection, the use of respirators and other personal protective equipment is mandated. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination. Curing ovens must be ventilated to prevent emissions into the workplace. If oven off-gases are not vented properly, it is possible to be exposed to airborne monomeric isocyanates.

PROTECTIVE GLOVES: Impermeable gloves to prevent skin contact.

EYE PROTECTION:

Splash proof eye goggles. In emergency situations, use eye goggles with a full face shield.

OTHER PROTECTIVE EQUIPMENT: Where contact is likely, wear rubber apron and boots. Eye wash station and safety shower should be available.

HYGIENIC PRACTICES: See Section V

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN DURING HANDLING AND STORAGE:

Keep away from heat. Keep away from sparks, flames and other sources of ignition. Store in a cool, dry place. Keep container closed when not in use. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use with

adequate ventilation. Ground and bond containers when transferring material. Use explosion proof equipment. Follow all MSDS/label precautions even after the container is emptied because it may retain product residues. Wash thoroughly after handling.

OTHER PRECAUTIONS: Avoid resealing containers that have been contaminated with water. The resulting reaction could cause a pressure within the container which is great enough to burst the container.

LIST OF HAZARDOUS AIR POLLUTANTS SUBJECT TO THE PROVISIONS OF THE CLEAN AIR ACT, TITLE I SECTION 112 'National Emission Standards for Hazardous Air Pollutants':

Ingredient	CAS #	Wt% of HAPS in product	Pounds HAPS/ Gal product
Xylene	1330-20-7	1.4 %	0.1
