

1-4-17

MSDS • Poly A Isocyanate

POLYURETHANE A

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Issue Date 12/15/2014

SECTION 1: NAME & HAZARD SUMMARY

Material Name: A Component, all Isocyanates, excluding: AQUACAST ACS 1000 through ACS 1099 series, and all ACSX prefixes, UC 800 through UC 899 series and all UCX prefixes.

Hazard summary (as defined by OSHA Hazard Comm. Std., 29 CFR 1910.1200):

Physical hazards: None (see Section 5)

Health hazards: Based on MDI - irritant (eye, skin, respiratory passages, skin sensitizer), inhalation (TLV), harmful (respiratory sensitizer, lung injury).

Read the entire MSDS for a more thorough evaluation of the hazards.

SECTION 2: INGREDIENTS

	%	OSHA PEL
4,4'-Diphenylmethane diisocyanate (4,4'-MDI; CAS 101-68-8)	50-75	0.02 ppm, Ceiling
Modified MDIs and other oligomers	25-50	Not Listed

Ingredients not precisely identified are proprietary or nonhazardous.
Values are not product specifications.

SECTION 3: PHYSICAL DATA

Appearance and odor: Pale yellow to dark brown liquid

Boiling point: Decomposes at 646 degrees F, 341.1 degrees C

Vapor pressure (mm Hg at 20 degrees C): <0.0001

Vapor density (air = 1): 8.5-8.6

Solubility in water: Reacts

pH: No data

Specific gravity: 1.19-1.2

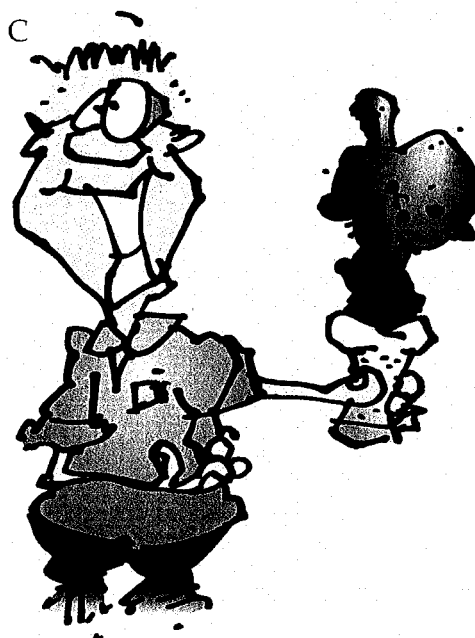
% Volatile by volume: No data

SECTION 4: FIRE AND EXPLOSION HAZARD DATA

Flash point 464 degrees F, 204 degrees C (COC)

Autoignition temperature: No data

Flammable limits (STP): No data



SECTION 4: FIRE AND EXPLOSION HAZARD DATA

Extinguishing media:

Dry chemical, foam, carbon dioxide, halogenated agents. If water is used, use large quantities. The reaction between water and hot isocyanate may be vigorous.

Special fire fighting protective equipment:

Self-contained breathing apparatus with full facepiece and protective clothing.

Unusual fire and explosion hazards:

Water contamination will produce carbon dioxide. Do not reseal contaminated containers as pressure buildup may rupture them.

SECTION 5: REACTIVITY DATA

Stability:

Stable under normal conditions.

Incompatibility:

This product will react with materials containing active hydrogens, such as water, alcohol, amines, alkalies and acids. The reaction with water is very slow under 50 Degrees C, but is accelerated at higher temperatures and in the presence of alkalies, tertiary amines, and metal compounds. Some reactions can be violent.

Hazardous decomposition products:

Combustion products: Carbon dioxide, carbon monoxide. Nitrogen oxides, ammonia. Trace amounts of hydrogen cyanide.

Hazardous polymerization:

May occur. High temperatures in the presence of alkalies, tertiary amines, and metal compounds will accelerate polymerization. Possible evolution of carbon dioxide gas may rupture closed containers.

SECTION 6: HEALTH HAZARD ASSESSMENT

General:

This health hazard assessment is based on information that is that is available on the properties of its components.

Ingestion:

The acute oral LD50 in rat is probably above 10,000mg/kg. Relative to other materials, a single dose of this product is practically nontoxic by ingestion. Irritation of the mouth, pharynx, esophagus and stomach can develop following ingestion.

Eye contact:

This material will probably irritate human eyes following contact.

SECTION 6: HEALTH HAZARD ASSESSMENT

Skin contact:

No irritation is likely to develop following short contact periods with human skin. Skin sensitization and/or irritation may develop after repeated and/or prolonged contact with human skin. Data derived from an animal model (guinea pig) demonstrate that dermal exposure to MDI can lead to respiratory sensitization. The data indicate that the greater the amount of MDI skin exposure, the greater the risk of developing respiratory sensitization. The potential for MDI to induce respiratory sensitization in humans and animals by inhalation is well known; however, this recent data indicates that this effect can be induced by skin contact. This data strongly indicates the need for increased emphasis on skin protection.

Skin absorption:

Systemically toxic concentrations of this product will probably not be absorbed through human skin.

Inhalation:

Vapors and aerosols can irritate eyes, nose and respiratory passages. Severe overexposure may lead to pulmonary edema. MDI can induce respiratory sensitization with asthma-like symptoms similar to those induced by TDI (toluene diisocyanate). Symptoms include chronic cough, tightness of chest with difficulty in breathing. These symptoms may be immediate or delayed up to several hours after exposure. There are reports that chronic exposures may result in permanent decreases in lung function.

Other effects of overexposure:

Recently, a study was completed where groups of rats were exposed for 6 hours/day, 5 days/week for a lifetime to atmospheres of respirable polymeric MDI aerosol. Overall, the tumor incidence, both benign and malignant, and the number of animals with tumors were not different from controls. However, at the top level only (6mg/cu.m), there was a significant incidence of a benign tumor of the lung (adenoma) and one malignant tumor (adenocarcinoma). There were no lung tumors at 1 mg/cu.m and no effects at 0.2 mg/cu.m. The increased incidence of lung tumors is associated with prolonged respiratory irritation and the concurrent accumulation of yellow material in the lung which occurred throughout the study. In the absence of prolonged exposure to high concentrations leading to chronic irritation and lung damage, it is highly unlikely that tumor formation will occur.

First aid procedures:

Skin: Wash material off of the skin with plenty of soap and water. If redness, itching, or a burning sensation develops, get medical attention.

Eyes: Immediately flush with plenty of water for at least 15 minutes. If redness, itching, or a burning sensation develops, have eyes examined and treated by medical personnel.

SECTION 6 HEALTH HAZARD ASSESSMENT (continued)

Ingestion:

Give 1 or 2 glasses of water to drink. If gastrointestinal symptoms develop, consult medical personnel. (never give anything by mouth to an unconscious person.)

Inhalation:

Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is labored, give oxygen. Consult medical personnel.

SECTION 7 SPILL, LEAK AND WASTE DISPOSAL INFORMATION

Steps to be taken if material is released or spilled:

Wear skin, eye, and respiratory protection during cleanup. Soak up material with absorbent and shovel into a chemical waste container. Cover container but do not seal, and remove from work area. Prepare a decontamination solution of 0.2-0.5% liquid detergent and 3-8% concentrated ammonium hydroxide in water (5-10% sodium carbonate may be substituted for ammonium hydroxide). Follow the precautions on the material suppliers MSDS. All operations should be performed by trained personnel familiar with the hazards of the chemicals used. Treat the spill area with the decontamination solution, using about 10 parts of solution for each part of the spill, and allow it to react for at least 10 minutes. Carbon dioxide will be evolved, leaving insoluble polyureas. For major spills, call CHEMTREC (chemical transportation emergency center) at 800-424-9300.

Disposal method:

Slowly stir the isocyanate waste into the decontamination solution described above using 10 parts of solution for each part of the isocyanate. Let stand for 48 hours, allowing the evolved carbon dioxide to vent away. Neutralize the waste. Neither the solid nor the liquid portion is a hazardous waste under RCRA, 40 CFR 261.

Container disposal:

Drums must be thoroughly drained to process or storage vessels before removal to an appropriate area for subsequent decontamination. Drums must be stored properly ventilated areas by personnel protected from the inhalation of isocyanate vapors. Spray or pour 5-15 liters of decontaminating solution in the drum, making sure the walls are well rinsed. Leave the drum soaking unsealed for 48 hours. Pour out the decontaminating solution and triple rinse the empty container before disposal. Note that the disposal of spent decontamination solutions may be subject to federal, state or local regulations, ordinances or conditions of discharge permits. Local regulations should also be consulted before final disposal of decontaminated drums.

SECTION 8 SPECIAL PROTECTION INFORMATION

TLV or suggested control value:

No ACGIH TLV or OSHA PEL is assigned to this mixture. Control of exposure to below the PEL for the ingredients (see section 2) may not be sufficient. Minimize exposure in accordance with good hygiene practice. The ACGIH TLV for MDI is 0.005 ppm 8-hour TWA. The OSHA PEL for MDI is 0.02 ppm, ceiling. NIOSH recommends 0.005 ppm TWA and 0.02 STEL. These control limits do not apply to previously sensitized individuals or to individuals with existing respiratory disease, such as chronic bronchitis, emphysema, or asthma. Sensitized individuals should be removed from any further exposure.

Ventilation:

If needed, use local exhaust ventilation to keep airborne concentrations below TLV. Follow guidelines in the ACGIH publication "Industrial Ventilation." Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

Respiratory protection:

Because of the low vapor pressure, ventilation is usually sufficient to keep vapors below TLV at room temperatures. Exceptions are when the material is sprayed or heated. If airborne concentrations exceed or are expected to exceed the TLV, use MSHA/NIOSH approved positive pressure supplied air respirator with a full facepiece, or an air-supplied hood. For emergencies, use a positive pressure self-contained breathing apparatus. Air purifying (cartridge type) respirators are not approved for protection against isocyanates.

Protective clothing:

Gloves determined to be impervious under the conditions of use. Depending on conditions of use, additional protection may be required such as apron, arm covers, or full body suit. Wash contaminated clothing before re-wearing. Testing of some commercially available protective clothing indicates that clothing constructed of butyl rubber, nitrile rubber, Saranex coated Tyvec and some neoprene garments have excellent resistance to permeation by MDI. Clothing constructed of neoprene/latex rubber and some PVC garments exhibited limited resistance to permeation by MDI. Clothing constructed of polyethylene, latex rubber, PVC, or poly laminated Tyvek showed little resistance to permeation by MDI. Protective clothing should be selected and used in accordance with "Guidelines for the Selection of Chemical Protective Clothing" published by ACGIH.

Eye protection:

Chemical tight goggles; full faceshield in addition if splashing is possible.

Other protective equipment:

Eyewash station and safety shower in work area.

SECTION 9 SPECIAL PRECAUTIONS OR OTHER COMMENTS

Special precautions or other comments:

Prevent skin and eye contact. Observe TLV limitations. Avoid breathing vapors or aerosols. Workers should shower and change to fresh clothing after each shift. A sensitized individual should not be exposed to the product which caused the sensitization. Store in tightly sealed containers to protect from atmospheric moisture. Store in a cool area. Individuals with existing respiratory disease such as chronic bronchitis, emphysema or asthma should not be exposed to isocyanates. These individuals should be identified through baseline and annual evaluation and removed from further exposure. Medical examination should include medical history, vital capacity, and forced expiratory volume at one second.

SECTION 10 REGULATORY INFORMATION

TSCA (Toxic Substances Control Act) Regulations, 40 CFR 710:

All ingredients are on the TSCA (Domestic Substances List).

CEPA (Canadian Environmental Protection Act):

All ingredients are on the DSL (Domestic Substances List).

CERCLA and SARA Regulations (40 CFR 355, 370, and 372):

Section 313 Supplier Notification. This product contains the following toxic chemicals subject to reporting requirements of Section 313 of the Emergency Planning and Community Right-to-know Act of 1986 and of 40 CFR 372:

50-75% MDI, listed as Methylenebis(phenylisocyanate), MBI (cas 101-68-8)

0-50% PMDI, listed as Polymeric diphenylmethane diisocyanate (cas 9016-87-9)

SECTION 11 • OTHER INFORMATION

This Material Safety Data Sheet (MSDS) is provided to you for your guidance only and is based upon publicly available information and tests that are believed to be reliable. However, Loose in the Lab, Inc. makes no guarantee of the accuracy or completeness of the data and shall not be liable for any damages relating thereto. This data is offered solely for your evaluation, consideration, investigation, and verification. The data should not be confused with local, state, federal or insurance mandates, regulations, or requirements and CONSTITUTE NO WARRANTY. Any use of this data and information must be determined by the science instructor purchasing and using the materials to be in accordance with applicable local, state or federal laws and regulations in addition to the mandates and guidelines of their specific school district.

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Prepared 07/08/2015