

MATERIAL SAFETY DATA SHEET

SECTION 1: MATERIAL IDENTIFICATION

PRODUCT NAME: XF-M1732 POLYURETHANE PREPOLYMER

PRODUCT CODE: (Experimental)

MSDS REVISION NUMBER: 0

MANUFACTURER: Air Products and Chemicals, Inc.
7201 Hamilton Boulevard, Allentown, PA. 18195-1501

TELEPHONE NUMBER: 800-345-3148

EMERGENCY TELEPHONE NUMBER(S):
800-523-9374 (Continental U.S.)
215-481-7711 (Outside Continental U.S.)
800-322-9092 (Pennsylvania Only)

EMERGENCY RESPONSE CODE: YAC-569-973

DATE PREPARED: February 1997

REVISION NOTES: New MSDS Format

C.A.S. CHEMICAL NAME: Trade Secret

SYNONYMS: None

CHEMICAL FAMILY: Polyurethane Resin

EMPIRICAL FORMULA: Mixture

INTENDED USE: No Data

SECTION 2: INGREDIENTS

%	CAS Number And Chemical Name
< 0.1	The composition is a trade secret.
	584-94-9 2,4 Toluene diisocyanate and
	91-08-7 2,6 Toluene diisocyanate

OSHA (ACGIH) EXPOSURE LIMITS

CAS #	TWA		STEL		CEILING	
	ppm	mg/m3	ppm	mg/m3	ppm	mg/m3
584-84-9						
OSHA	0.0050	0.0400	0.0200	0.1500	N/E	N/E
ACGIH	0.0050	0.0360	0.0200	0.1400	N/E	N/E

SECTION 3: HEALTH HAZARDS

EMERGENCY OVERVIEW

HMIS HEALTH RATING: 1 FLAMMABILITY: 1 REACTIVITY: 1

Viscous liquid. Straw yellow.

Mild eye irritant. Mild skin irritant.

Ignition will give rise to a Class B fire. In case of fire, use:

Carbon Dioxide (CO2), Dry Chemical, dry sand or Alcohol Foam.

ROUTES OF ENTRY

Eye contact

Skin absorption

Ingestion

Inhalation under the following conditions: the product is sprayed or heated at a temperature above ambient such as 150F.

EXPOSURE STANDARDS

See Section 2 for exposure standards on ingredients. Maintain air contaminant concentrations in the workplace at the lowest feasible levels.

HEALTH HAZARDS

Mild eye irritant.

Mild skin irritant.

TARGET ORGANS

None.

SIGNS AND SYMPTOMS OF EXPOSURE (Acute Effects)

Acute Skin Contact: Contact with skin causes mild irritation and discomfort.

Acute Eye Contact: Contact with eyes causes mild irritation and discomfort.

Acute Inhalation: Inhalation of mists may cause irritation in the respiratory tract.

ACUTE ORAL TOXICITY (LD50, RAT)

No Data.

ACUTE DERMAL TOXICITY (LD50, RABBIT)

No Data.

ACUTE INHALATION TOXICITY 9LC50, RAT)

No Data.

OTHER ACUTE EFFECTS

No Data.

IRRITATION EFFECTS DATA

Irritation data based on estimates.

SIGNS AND SYMPTOMS OF EXPOSURE (Possible Longer Term Effects)

No known effects.

CHRONIC/SUBCHRONIC DATA

No delayed, subchronic or chronic test data are known.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

None known.

CARCINOGENS UNDER OSHA, ACGIH, NTP, IARC, OTHER

This product contains no carcinogens in concentrations of 0.1 percent or greater.

SECTION 4: FIRST AID

EYE CONTACT

Flush with copious amounts of water, preferably lukewarm for at least 15 minutes holding eyelids open all the time. Refer individual to physician or an ophthalmologist for immediate follow-up.

SKIN CONTACT

Remove contaminated clothing. Wash affected areas thoroughly with soap and water for at least 15 minutes. Wash contaminated clothing thoroughly before reuse. Call a physician.

INHALATION

Move to an area free from risk of further exposure. If breathing has stopped or is labored give assisted respiration (e.g., mouth-to-mouth). Prevent aspiration of vomit. Turn victim's head to the side. Consult physician.

INGESTION

If swallowed, call a physician immediately. Remove stomach contents by gastric suction or induce vomiting only as directed by medical personnel. **DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.**

SECTION 5: FIRE AND EXPLOSION DATA

CHARACTERISTICS:

Flash point: > 160C (> 320F)

Flash Point Method(s): Not determined.

Upper Explosion Limit (UEL): Not determined.

Lower Explosion Limit (LEL): Not determined.

Autoignition Temperature: Not determined.

Fire Hazard Classification (OSHA/NFP): Combustible liquid, Class IIIB.

Extinguishing Media

Ignition will give rise to a Class B fire. Do not add water or other liquids to this product.

In case of large fire use: Alcohol Foam. In case of small fire use: Carbon Dioxide (CO₂), Dry Chemical, Dry sand or limestone.

Special Fire Fighting Procedures

Firefighters should wear butyl rubber boots, gloves, and body suit and a self-contained breathing apparatus. Retain expended liquids from fire fighting for later disposal.

Unusual Fire And Explosion Hazard

May generate toxic or irritating combustion products. May generate carbon monoxide gas. May generate hydrogen cyanide gas. Personnel in vicinity and downwind should be evacuated.

SECTION 6: REACTIVITY DATA

CHEMICAL STABILITY

Stable.

CONDITIONS TO AVOID (IF UNSTABLE)

Not applicable.

INCOMPATIBILITY (Materials to Avoid)

Oxidizing Agents (i.e., perchlorates, nitrates, etc.). Sodium or Calcium Hypochlorite. Alcohols. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion. Product reacts slowly with water which results in the liberation of carbon dioxide. Reaction with water or contaminants or excessive heat may result in sufficient pressure to burst container.

HAZARDOUS DECOMPOSITION PRODUCTS (from burning, heating, or reaction with other materials)

Carbon monoxide in a fire. Carbon dioxide in a fire. Irritating and toxic fumes at elevated temperatures. Nitriles. Cyanic acid. Isocyanates. Cyanogens. Amides. Carbamates. Toxic cyanates.

HAZARDOUS POLYMERIZATION

Will not occur.

CONDITIONS TO AVOID (if polymerization may occur)

None.

SECTION 7: SPILL, LEAK AND DISPOSAL INFORMATION

CONTAINMENT TECHNIQUES (Removal of ignition sources, diking, etc.)

Stop the leak, if possible. Shut off or remove all ignition sources. Construct a dike to prevent spreading.

CLEAN-UP PROCEDURES

If recovery is not feasible, admix with dry soil, sand or non-reactive absorbent (sodium bisulfate) and place in a container or dumpster pending disposal. Transfer to containers by suction, preparatory for later disposal. Place in metal containers for recovery or disposal. Clean-up personnel must be equipped with self contained breathing apparatus and butyl rubber protective clothing. For large spills, recover spilled material with a vacuum truck. Prepare a decontamination solution of 0.2-5% liquid detergent and 3-8% concentrated ammonium hydroxide in water. Treat spill area with decontamination solution, using about 10 parts of the solution for each part of the spill and allow it to react for at least 10 minutes for trace amounts and 48 hours for large spills. Neutralize the waste. Carbon dioxide will evolve, leaving insoluble polyureas.

OTHER EMERGENCY ADVICE

Wear protective clothing, boots, gloves, and eye protection.

WASTE DISPOSAL

Comply with all Federal, State and Local Regulations.

ENVIRONMENTAL EFFECTS

No data.

SECTION 8: PERSONAL PROTECTION/EXPOSURE CONTROLS

EYE PROTECTION

Chemical safety glasses. Full face shield with goggles underneath when molten material is being handled.

HAND PROTECTION

Insulated gloves when handling hot material.

RESPIRATORY PROTECTION

Not required under normal conditions

PROTECTIVE CLOTHING

Long sleeved clothing. Butyl rubber or latex protective clothing during spray applications.

ENGINEERING CONTROLS

Maintain air concentrations in work spaces in accord with standards outlined in Section 2 and 3.

WORK AND HYGIENIC PRACTICES

Provide readily accessible eye wash stations and safety showers.

SECTION 9: STORAGE AND HANDLING

STORAGE

Store under inert atmosphere. Keep away from moisture, oxidizers, heat or flames. Keep in cool, dry, ventilated storage and in closed containers.

HANDLING

Avoid contact with skin or eyes. When handling, do not eat, drink, or smoke. Avoid using in any spray application without strict conformance to all applicable electrical codes and the OSHA limit for maximum allowable airborne concentrations.

OTHER PRECAUTIONS

Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations (e.g., OSHA). Do not breathe fumes/spray

SECTION 10: TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM: Viscous liquid.

COLOR: Straw yellow.

pH: Neutral.

VAPOR PRESSURE (MM Hg): No data.

VAPOR DENSITY (Air = 1): No data.

BOILING POINT: No data.

FREEZING POINT: No data.

MELTING POINT: No data.

SOLUBILITY IN WATER: Reacts with water.

SPECIFIC GRAVITY (Water = 1): 1.15

EVAPORATION RATE (Butyl acetate = 1): No data.

% VOLATILES BY WEIGHT: No data.

VISCOSITY (CPS): 6000 cps @ 40C.

600 cps @ 70C.

SECTION 11: TRANSPORTATION INFORMATION

DOT SHIPPING NAME

Resin compound - not DOT regulated.

DOT BULK SHIPPING NAME

IMO SHIPPING DATA

Resin compound - not DOT regulated.

ICAO/IATA SHIPPING DATA

Resin compound - not DOT regulated.

SECTION 12: U.S. FEDERAL REGULATIONS

TOXIC SUBSTANCES CONTROL ACT (TSCA)

All components are included in the EPA Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

OSHA Hazard Communication Standard (29CFR1910.1200) hazard class: None.

EPA SARA Title III Section 312 (40CFR370) hazard class: None.

SARA Title III Section 313 (40CFR372) toxic chemicals above the "de minimis" limit are: None.

SECTION 13: STATE REGULATIONS

Proposition 65 substance(s) listed by the state of California under the "Safe Drinking Water and Toxic Enforcement Act of 1986":

584-84-9	2,4 Toluene diisocyanate and	
91-08-7	2,6 Toluene diisocyanate	< 0.1%

SECTION 14: INTERNATIONAL REGULATIONS

CANADA

DSL: Included on inventory.

WHMIS Hazard Classification: None.

WHMIS Trade Secret Registry Number(s): None.

WHMIS HAZARDOUS INGREDIENTS: Included in section 2.

WHMIS Symbol: None.

EUROPEAN ECONOMIC COMMUNITY (EEC)

EINICS Master Inventory: Polymeric substance; monomers included on inventory.