MATERIAL SAFETY DATA SHEET

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MSDS Number: F0M012 ; F0M0605 ; F0M0875 ;

I. CHEMICAL PRODUCT IDENTIFICATION

Product Name: TWO COMPONENT POLYURETHANE FOAM − PART A

HMIS Ratings:

Health: Moderate(2)
Flammability: Slight(1)
Instability/Reactivity: Slight(1)

NFPA Ratings:

Health: Moderate(2)
Flammability: Slight(1)
Instability/Reactivity: Slight(1)

Other: EMERGENCY OVERVIEW:
PRODUCT IS A URETHANE FOAM COMPONENT THAT CONTAINS A LIQUIFIED COMPRESSED GAS BLOWING AGENT (NON FLAMMABLE COMPRESSED GAS). CONTAINERS SHOULD NOT BE HEATED ABOVE 120ºF (49ºC) TO AVOID EXESSIVE PRESSURE BUILD UP.

II. COMPOSITION, INFORMATION ON INGREDIENTS

Chemical Ingredients	***C.A.S. Number***	***% By Weight***	***ACGIH TLV TWA/STEL***	***OSHA PEL TWA/STEL***	***Other TWA/STEL***	***LD50***	***LC50***
1,1,1,2 − TETRAFLUOROETHANE (NON FLAMMABLE COMPRESSED GAS, HFC FLUOROCARBON 134A)	811−97−2	7 − 13	NONE ESTABLISHED	NONE ESTABLISHED		N/A	N/A
Notes							
4−4' − DIPHENYLMETHANE DIISOCYANATE (MDI)	101−68−8	30 − 60	.005 PPM; .051 MG/M³	.020 PPM CEILING; .200 MG/M3 CEILING		N/A	N/A
Notes							
HIGHER OLIGOMERS OF MDI (POLYMERIC MDI)	9016−87−9	30 − 60	NONE ESTABLISHED	NONE ESTABLISHED		N/A	N/A
Notes							
Other:	NONE OF THESE PRODUCTS ARE LISTED BY IARC, NTP, OSHA OR ACGIH AS A CARCINOGEN.						

III. HAZARDS IDENTIFICATION PRIMARY ROUTE OF ENTRY

Eyes: MAY BE IRRITATING TO EYES. MDI CONTACT CAN CAUSE PHYSICAL DAMAGE DUE TO ADHESIVE CHARACTER.

Skin: MAY CAUSE LOCALIZED IRRITATION, REDDENING OR SWELLING. PROLONGED OR REPEATED EXPOSURE MAY LEAD TO SENSITIZATION AND/OR CONTACT DERMATITIS.

Ingestion: MAY CAUSE IRRITATION OF MUCOUS MEMBRANES IN THE MOUTH AND DIGESTIVE TRACT.

Inhalation: MAY IRRITATE MUCOUS MEMBRANES WITH TIGHTNESS IN CHEST, COUGHING, OR ALLERGIC ASTHMA−LIKE SENSITIVITY. EXTENSIVE OVEREXPOSURE CAN LEAD TO

RESPIRATORY SYMPTOMS LIKE BRONCHITIS AND PULMONARY EDEMA. THESE EFFECTS ARE USUALLY REVERSIBLE.
OVEREXPOSURE TO 1,1,1,2 − TETRAFLUOROETHANE MAY CAUSE LIGHTHEADEDNESS, HEADACHES, OR LETHARGY. PERSONS WITH CARDIAC ARRHYTHMIA MAY BE AT INCREASED RISK IN SEVERE EXPOSURE.

Signs and Symptoms of Exposure:

Medical Conditions Aggravated by Exposure: POTENTIAL HEALTH EFFECTS:
ADVERSE HEALTH EFFECTS OF THIS PRODUCT ARE RELATED TO THE CONCENTRATIONS OF VAPOR IN THE AIR. THEREFORE, ADEQUATE VENTILATION AND RESPIRATORY PROTECTION SHOULD BE PROVIDED TO AVOID EXCEEDING EXPOSURE LIMITS LISTED. SPRAYING MDI AS A MIST DURING APPLICATION MAY INCREASE VAPOR LEVELS OF THIS MATERIAL.

Other: PHYSICAL HAZARDS:
STORAGE TEMPERATURE SHOULD NOT EXCEED 120ºF (49ºC) IN ORDER TO AVOID EXCESSIVE PRESSURE BUILD−UP AND POSSIBLE RELEASE OF CONTENTS. ALSO, MDI WILL REACT WITH WATER TO FORM CO^2 AND WATER INSOLUBLE POLYUREAS. THIS REACTION MAY BE VIGOROUS AT ELEVATED TEMPERATURES, AND COULD CAUSE DANGEROUS PRESSURE BUILD−UP IN TIGHTLY SEALED CONTAINERS. LIQUID CONTENTS FROTH WHEN RELEASED FROM CONTAINERS. A−COMPONENT HAS STRONG ADHESIVE CHARACTERISTICS. IF ACCIDENTAL CONTACT OCCURS, FOLLOW THE APPROPRIATE FIRST AID PROCEDURE DESCRIBED IN THE FIRST AID SECTION.

IV. FIRST AID MEASURES

Eyes: FLUSH WITH CLEAN WATER FOR AT LEAST 15 MINUTES AND OBTAIN MEDICAL ATTENTION.

Skin: USE A RAG TO REMOVE LIQUID FROM SKIN AND REMOVE CONTAMINATED CLOTHING. USE OF A SOLVENT, SUCH AS ACETONE (NAIL POLISH REMOVER) OR MINERAL SPIRITS, MAY HELP IN REMOVING UNCURED FOAM RESIDUE FROM CLOTHING OR OTHER SURFACES (AVOID EYE CONTACT). MAY CAUSE MILD IRRITATION OR TEMPORARY DARKENING OF SKIN. PERSISTENT WASHING FROM SOAP AND WATER WILL EVENTUALLY REMOVE ALL RESIDUE. IF IRRITATION PERSISTS, OBTAIN MEDICAL ATTENTION.

Ingestion: DO NOT INDUCE VOMITING. DRINK 1−2 GLASSES OF WATER OR MILK. CONSULT PHYSICIAN. DO NOT GIVE ANYTHING ORALLY TO AN UNCONSCIOUS PERSON.

Inhalation: IF BREATHING DIFFICULTY IS EXPERIENCED, MOVE TO AREA FREE OF EXPOSURE. PROVIDE FRESH AIR. IF NECESSARY, PROVIDE OXYGEN OR ARTIFICIAL RESPIRATION BY TRAINED PERSONNEL AND OBTAIN MEDICAL ATTENTION.

V. FIRE FIGHTING MEASURES

Flash Point: MDI: 390ºF (199ºC); 1,1,1,2TETRAFLUOROETHANE: NONE

Unusual Fire or Explosion Hazards: CONTENTS ARE NOT KNOWN TO BE SENSITIVE TO MECHANICAL IMPACT TO STATIC DISCHARGE.

Fire Fighting Procedures: HIGH TEMPERATURES WILL RAISE THE PRESSURE IN THE CONTAINERS, WHICH MAY LEAD TO RUPTURING. EXTINGUISHING MEDIA INCLUDE: DRY CHEMICAL, CARBON DIOXIDE, HALON 1211, CHEMICAL FOAM, OR WATER SPRAY IF USED IN LARGE QUANTITIES (WATER CONTAMINATION WILL PRODUCE CARBON DIOXIDE). WEAR SELF−CONTAINED BREATHING APPARATUS TO PROTECT AGAINST TOXIC DECOMPOSITION BY−PRODUCTS, INCLUDING CO, CO^2, NO, AND TRACES OF HCN OR HCL. CURED FOAM IS ORGANIC AND, THEREFORE, WILL BURN IN THE PRESENCE OF SUFFICIENT HEAT, OXYGEN AND AN IGNITION SOURCE. MAIN HAZARDS ASSOCIATED WITH BURNING FOAM ARE SIMILAR TO BURNING OF OTHER ORGANIC

MATERIALS (WOOD, PAPER, COTTON, ETC.) AND PRECAUTIONS AGAINST EXPOSURE SHOULD BE TAKEN ACCORDINGLY. AVOID WELDING OR OTHER "HOT WORK" IN THE VICINITY OF EXPOSED CURED FOAM.

VI. ACCIDENTAL RELEASE MEASURES

Containment/Cleanup: WEAR SKIN, EYE AND RESPIRATORY PROTECTION. SOAK UP MATERIAL WITH ABSORBENT AND SHOVEL INTO CHEMICAL WASTE CONTAINER. LOOSELY COVER CONTAINER AND REMOVE FROM WORK AREA. DECONTAMINATE WASTE AND SPILL AREA WITH A SOLUTION OF 0.2−0.5% LIQUID DETERGENT AND 3−8% CONCENTRATED AMMONIUM HYDROXIDE IN WATER (5−10% SODIUM BICARBONATE MAY BE SUBSTITUTED FOR AMMONIUM HYDROXIDE). USE 10 PARTS OF SOLUTION FOR EACH PART OF THE SPILL AND ALLOW TO REACT FOR AT LEAST 10 MINUTES. ALLOW LOOSELY COVERED CONTAINER TO STAND FOR SEVERAL DAYS BEFORE DISPOSING IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.
RESIDUAL LIQUID MAY BE MIXED SLOWLY WITH EQUAL AMOUNTS OF B−COMPONENT IN A WELL VENTILATED AREA IN ORDER TO FORM SOLID, LOW GRADE FOAM, WHICH IN MOST CASES CAN BE DISPOSED OF AS A SOLID IN NORMAL WASTE STREAMS. NEVER DISCARD IN A LIQUID STATE. UNDAMAGED CYLINDERS ARE RETURNABLE BY FOLLOWING MANUFACTURER'S INSTRUCTIONS AND ALL REGULATORY REQUIREMENTS.

VII. HANDLING AND STORAGE

Other: STORE IN A COOL, DRY PLACE. IDEAL STORAGE TEMPERATURE IS 60ºF TO 80ºF (15.5ºC TO 26.6ºC). STORAGE ABOVE 90ºF (32.2ºC) WILL SHORTEN THE SHELF LIFE. PROTECT CONTAINERS FROM PHYSICAL ABUSE. STORAGE BELOW 55ºF (12.7ºC) MAY AFFECT FOAM QUALITY IF CHEMICALS ARE NOT WARMED TO ROOM TEMPERATURE BEFORE USING. PROTECT UNUSED PRODUCT FROM FREEZING.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Other: READ ALL PRODUCT INSTRUCTIONS BEFORE USING. PERSONAL PROTECTIVE EQUIPMENT SHOULD INCLUDE SAFETY EYE WEAR, CHEMICAL RESISTANT GLOVES, AND LONG SLEEVE WORK CLOTHES. ADEQUATE VENTILATION SHOULD ALSO BE EMPLOYED SO THAT VAPOR LEVELS DO NOT EXCEED RECOMMENDED GUIDELINES. IF VAPOR LEVELS ARE EXPECTED TO EXCEED THESE GUIDELINES, USE NIOSH/MSHA APPROVED, POSITIVE PRESSURE, SUPPLIED AIR RESPIRATOR. EXERCISE GOOD PERSONAL HYGIENE, WASH THOROUGHLY AFTER EACH USE.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: AMBER TO DARK BROWN LIQUID.*

Boiling Point: 1,1,1,2 TETRAFLUOROETHANE: BOILS @ −15ºF (−26ºC)**

Solubility in Water: INSOLUBLE, ***

Specific Gravity: APPROXIMATELY 1.2 (H^2O=1)

Vapor Pressure: #

Physical State: LIQUID

Volatile Content: BASED ON THE CURRENT EPA DEFINITION OF VOLATILE ORGANIC COMPOUND, THIS PRODUCT DOES NOT HAVE ANY V.O.C. CONTENT

Other: *FROTHS TO AN OFF WHITE TO YELLOWISH COLOR WHEN RELEASED FROM CONTAINER.
** MDI BOILS @ 406ºF (208ºC).
*** REACTS SLOWLY WITH WATER TO LIBERATING TRACES OF CO2.
# − CONTENTS UNDER PRESSURE HAVE VAPOR PRESSURE GREATER THAN 50 PSIG/345 KPA. FOR MDI LIQUID LESS THAN 10 MM HG AT 77ºF (25ºC).

X. STABILITY AND REACTIVITY

Stability: THIS PRODUCT IS CONSIDERED STABLE UNDER NORMAL AND ANTICIPATED STORAGE AND HANDLING CONDITIONS. DO NOT STORE ABOVE 120ºF (49ºC). FOR LONGEST SHELF LIFE, AVOID STORAGE ABOVE 90ºF (32.2ºC). AVOID ALCOHOLS, STRONG BASES OR AMINES AND METAL COMPOUNDS (SUCH AS SMALL PARTICLE METAL CATALYSTS). AVOID CONTAMINATION WITH WATER.

XI. TOXICOLOGICAL INFORMATION

XII. ECOLOGICAL INFORMATION

Ecotoxicity:

XIII. DISPOSAL CONSIDERATIONS

XIV. TRANSPORT INFORMATION

Other: CONTAINERS LESS THAN 1000 CU CM (1 LITER)/CONTAINERS GREATER THAN 1000 CU CM (1 LITER)
GROUND: CONSUMER COMMODITY ORM−D (ON SHIPPER CARTON), CONSUMER COMMODITY HANDI−FOAM® TWO COMPONENT A−COMPONENT (ON SHIPPING DOCUMENT)/COMPRESSED GAS N.O.S. (FLUOROCARBON), 2.2 UN 1956 (NON−FLAMMABLE GAS LABEL)
AIR:
AEROSOLS, NON FLAMMABLE 2.2 UN 1950 (NON−FLAMMABLE GAS LABEL)/COMPRESSED GAS N.O.S. (FLUOROCARBON), 2.2 UN 1956 (NON−FLAMMABLE GAS LABEL)
WATER
AEROSOLS WITH A CAPACITY OF 1000 CU CM OR LESS. UN 1950 (NO HAZARD LABELS REQUIRED) BOXES OR CARTONS SHOULD BE MARKED. AEROSOLS UN 1950 ONLY. IMDG VOLUME #2; PAGE #93/ COMPRESSED OR LIQUIFIED GAS N.O.S. (FLUOROCARBON), 2.2 UN 1956 (NON−FLAMMABLE GAS LABEL) IMDG VOLUME #2; PAGE #93.

NOTE
EMERGENCY RESPONSE GUIDE NUMBERS − CONSUMBER COMMODITY #171. FOR AEROSOLS AND COMPRESSED GAS #126.

XV. REGULATORY INFORMATION

TSCA Status: ALL INGREDIENTS ARE LISTED ON THE TSCA INVENTORY, AS WELL AS THE CANADIAN DOMESTIC SUBSTANCE LIST.

EPA Sara Title III Chemical Listings: CONTAINS DIPHENYLMETHANE DIISOCYANATE (CAS # 101−68−8) WHICH IS SUBJECT TO THE REPORTING REQUIREMENTS OF SARA TITLE III. APPLICABILITY MUST BE DETERMINED BY END USER.

Supplemental State Compliance Information:

California: PROP 65 WARNING: BASED ON INFORMATION CURRENTLY AVAILABLE, THIS PRODUCT IS NOT KNOWN TO CONTAIN DETECTABLE AMOUNTS OF ANY CHEMICALS CURRENTLY LISTED UNDER CALIFORNIA PROPOSITION 65.

XVI. OTHER INFORMATION

WARRANTY INFORMATION

THIS INFORMATION IS OFFERED IN GOOD FAITH AS TYPICAL VALUES AND NOT AS A PRODUCT SPECIFICATION. NO WARRANTY, EXPRESSED OR IMPLIED, IS HEREBY MADE. THE RECOMMENDED INDUSTRIAL HYGIENE AND SAFE HANDLING PROCEDURES ARE BELIEVED TO BE GENERALLY APPLICABLE. HOWEVER, EACH USER SHOULD

REVIEW THESE RECOMMENDATIONS IN THE SPECIFIC CONTEXT OF THE INTENDED USE AND DETERMINE WHETHER
THEY ARE APPROPRIATE.