MATERIAL SAFETY DATA SHEET

24 HOUR EMERGENCY ASSISTANCE — **GENERAL ASSISTANCE**

CHEM TEL: 1-800-255-3924 — TELE-TECH: 405-755-8448

HEALTH:	**2***	HAZARD RATING
FIRE:	**1**	LEAST = 0 SLIGHT = 1 MODERATE = 2
REACTIVITY:	**1**	HIGH = 3 EXTREME = 4
		* = CHRONIC HEALTH HAZARD

SECTION I

PRODUCT: 550 WB URETHANE HARDENER, PART B

CHEMICAL NAME: ALIPHATIC POLYISOCYANATE

CHEMICAL FAMILY: 1,6-HEXAMETHYLENE DIISOCYANATE BASED POLYISOCYANATE

PRODUCT DESCRIPTION: CATALYST

SECTION II-A — PRODUCT / INGREDIENT

NO.	COMPOSITION	CAS NUMBER	PERCENT
1	ALIPHATIC POLYISOCYANATES		15-25%

SPECIFIC CHEMICAL IDENTITY IS WITHHELD AS A TRADE SECRET.

THE RECOEMMENDED MANUFACTURER GUIDELINE FOR HDI BASED POLYISOCYANTES: 0.5 MG/M3 (TWA- AVERAGED OVER 8 HOURS) AND 1.0MG/M3 SHORT TERM EXPOSURE: (STEL-AVERAGED OVER 15 MINUTES.)

2	HEXAMETHYLENE DIISOCYANTE (HDI)	28182-81-2	75-85%

OSHA: NOT ESTABLISHED ACGIH: 0.005 PPM TWA

* MONOMER CONTENT IS LESS THAN 0.2% BASED ON RESIN SOLIDS AT THE TIME MANUFACTURE. MILAMAR ALSO RECOMMENDS A CEILING LEVEL OF 0.02PPM (MANUFACTURER'S GUIDELINE LEVEL (MGL)).

SECTION II-B — ACUTE TOXICITY DATA

NO.	ACUTE ORAL LD50	ACUTE DERMAL LD50	ACUTE INHALATION LC50
	>10,000 MG/KG (RAT)	>5,000 MG/KG (RABBIT)	130-1150 MG/M3

SECTION III — HEALTH INFORMATION

THE HEATH EFFECTS NOTED BELOW ARE CONSISTENT WITH REQUIREMENTS UNDER THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910-1200).

EYE CONTACT:

ACUTE: LIQUID, AEROSOLS OR VAPORS OF THIS PRODUCT(ISOCYANATE) ARE IRRITATING AND CAN CAUSE TEARING, REDDENING AND SWELLING ACCOMPANIED BY A STINGING SENSATION AND MAY BE A FEELING LIKE THAT OF FINE DUST IN THE EYES.

CHRONIC: MAY RESULT IN CORNEAL OPACITY (CLOUDING OFD THE EYE SURFACE.)

SKIN CONTACT:

ACUTE: ISOCYANATES REACT WITH SKIN PROTEIN AND MOISTURE AND CAN CAUSE IRRITATION. SYMPTOMS OF SKIN IRRITATION MAY BE REDDENING, SWELLING, RASH, SCALING OR BLISTERING. SOME PERSONS MAY DEVELOP SKIN SENSITIZATION FROM SKIN CONTACT. CURED MATERIAL IS DIFFICULT TO REMOVE.

CHRONIC: PROLONGED CONTACT WITH THE ISOCYANATE CAN CAUSE REDDENING, SWELLING, RASH, XCALING OR BLISTERING. IN THOSE WHO HAVE DEVELOPED A SKIN SENSITIZATION, THESE SYMPTOMS CAN DEVELOP AS A RESULT OF CONTACT WITH VERY SMALL AMOUNTS FO LIQUID MATERIAL OR EVEN AS A RESULT OF VAPOR-ONLY EXPOSURE.

INHALATION:

ACUTE: HDI VAPORS OR MIS AT CONCENTRATIONS ABOVE THE TLV CAN IRRITATE (BURNING SENSATION) THE MUCOUS MEMBRANES IN THE RESPIRATORY TRACT (NOSE, THROAT, LINGS) CAUSING

RUNNY NSOE, SORE THROAT, COUGHING, CHEST DISCOMFORT, SHORTNESS OF BREATH AND REDUCED LUNG FUNCTION (BREATHING OBSTRUCTION). PERSONS WITH PREEXISTING, NONSPECIFIC BRONCHIAL HYPERRACTIVITYCAN RESPOND TO CONCENTRATIONS BELOW THE T.V WITH SIMILAR SYMPTOMS AS WELL AS AN ASTHMA ATTACK. EXPOSURE WELL ABOVE THE TLV MAY LEAD TO BRONCHITIS, BRONCHIAL SPASM AND PULMONARY EDEMA (FLUID IN LUNGS). THESE EFFECTS ARE USUALLY REVERSIBLE. CHEMICAL OR HYPERSENSITIVE PNEUMONITIS, WITH FLU-LIKE SYMPTOMS (E.G., FEVER, CHILLS) HAS ALSO BEEN REPORTED.

CHRONIC: AS A RESULT OF PREVIOUS REPEATED OVEREXPOSURES OR A SINGLE LARGE DOSE, CERTAIN INDIVIDUALS WILL DEVELOP ISOCYNATE SENSITIZATON (CHEMICAL ASTHMA) WHICH WILL CAUSE THEM TO REACT TO A LATER EXPSOURE TO ISOCYANATE AT LEVELS WELL BELOW THE TLV. THESE SYMPTOMS, WHICH INCLUDE: CHEST TIGHTNESS, WHEEZING, COUGH, SHORTNESS OF BREATH OR ASTHMATIC ATTACK, COULD BE IMMEDIATE OR DELAYED UP TO SEVERAL HOURS AFTER EXPOSURE. SIMILAR TO MANY NON-SPECIFIC ASTHMATIC RESPONSES THERE ARE REPORTS THAT ONCE SENSITIZED AN INDIVIDUAL CAN EXPERIENCE THESE SYMPTOMS UPON EXPOSURE TO DUST, COLD AIR OR OTHER IRRITANTS. THIS INCREASED LUNG SENSITIVITY CAN PERSIST FOR WEEKS AND IN SEVERE CASES FOR SEVERAL YEARS. CHRONIC OVEREXPOSURE TO ISOCYANATES HAS ALSO BEEN REPORTED TO CAUSE LUNG DAMAGE, INCLUDING DECREASE IN LUNG FUNCTION, WHICH MAY BE PERMANENT. SENSITIZATION MAY BE EITHER TEMPORARY OR PERMANENT.

INGESTION:

ACUTE: CAN RESULT IN IRRITATION AND POSSIBLE CORROSIVE ACTION IN THE MOUTH, STOMACH TISSUE AND DIGESTIVE TRACT.

CHRONIC: NONE FOUND.

AGGRAVATED MEDICAL CONDITIONS:

BY EXPOSURE: ASTHMA AND ANY OTHER RESPIRATORY DISORDERS (BRONCHITHIS, EMPHYSEMA, HYPERREACTIVITY), SKIN ALLERGIES, ECZMA.

SECTION IV — OCCUPATIONAL EXPOSURE LIMITS

	OSHA		ACGIH		OTHER
NO.	PEL/TWA	PEL/CEILING	TLV/TWA	TLV/STEL	

NOT ESTABLISHED FOR THIS PRODUCT AS A WHOLE, REFER TO SECTION II FOR EXPOSURE LIITS OF HAZARDOUS CONSTITUENTS.

SECTION V — EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT: FLUSH WITH CLEAN, LUKEWARM WATER (LOW PRESSURE) FOR AT LEAST 15 MINUTES WHILE LIFTING EYELIDS. REFER INDUVIDUAL TO PHYSICIAN OR POHTHALMOLOGIST FOR IMMEDIATE FOLLOW-UP.

SKIN CONTACT: REMOVE CONTAMINATED CLOTHING IMMEDIATELY. WASH AFFECTED AREAS THOROUGHLY WITH SOAP (GREEN TINCTURE SOAP IS RECOMMENDED) AND WATER. WASH CONTAMINATED CLOTHING THOROUGHLY BEFORE REUSE. FOR SEVERE EXPOSURES, GET UNDER SAFETY SHOWER AFTER REMOVING CLOTING, THEN GET MEDICAL ATTENTION. FOR LESSER EXPOSURES, SEEK MEDICAL ATTENTION IF IRRITATION DEVELOPS OR PERSISTS.

INHALATION: MOVE TO AN AREA FREE FROM RISK OF FURTHER EXPOSURE. ADMINISTER OXYGEN OR ARTIFICIAL RESPIRIATION AS NEEDED. OBTAIN MEDICAL ATTEINTION. ASTHMATIC-TYPE SYMPTOMS MAY DEVELOP AND MAY BE IMMEDIATE OR DELAYED UP TO SEVERAL HOURS. TREATMENT IS ESSENTIALLY SYMPTOMATIC. CONSULT PHYSICIAN.

INGESTION: **DO NOT INDUCE VOMITING**. GIVE 1 TO 2 CUPS OF MILK OR WATER TO DRINK. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON. CONSULT PHYSICIAN.

NOTE TO PHYSICIAN:

EYES: STAIN FOR EVIDENCE OF CORNEAL INJURY. IF CORNEA IS BURNED, INSTILL ANTIBIOTIC /STERIOD PREPARATION FREQUENTLY. WORKPLACE VAPORS COULD PRODUCE REVERSIBLE CORNEAL EPITHELIAL EEMA IMPAIRING VISION.

SKIN: HDI IS A KNOWN SKIN SENSITIZER. TREAT SYMPTOMATICALLY ALS FOR CINTACT DERMATITIS OR THERMAL BURN.

INGESTION: TREAT SYMPTOMATICALLY. THERE IS NO SPECIFIC ANTIDOTE. INDUCING VOMITING IS CONTRAINDICATED BECAUSE OF THE IRRITATING NATURE OF THE PRODUCT.

INHALATION: HDI IS A KNOWN PULMONARY SENSITIZER. TREATMENT IS ESSENTIALLY SYMPTOMATIC. AN INDUVIDUAL HAVING A DERMAL OR PULMONARY SENSITIZATION REACTION TO THIS MATERIAL MUST BE REMOVED FROM ANY FURTHER EXPOSURE TO ANY ISOCYANATE.

SECTION VI SUPPLEMENTAL HEALTH INFORMATION

CONTACT A POISON CONTROL CENTER FOR ADDITIONAL TREATMENT INFORMATION.

SECTION VII PHYSICAL DATA

BOILING POINT (°F): NOT ESTABLISHED SPECIFIC GRAVITY (H_2O = 1): 1.16
VAPOR PRESSURE (mm Hg @ 20°C): NOT ESTABLISHED
SOLUBILITY (IN WATER): RESIN IS INSOLUABLE - REACTS SLOWLY WITH WATER TO LIBERATE CO2 GAS
VAPOR DENSITY (AIR = 1): NOT ESTABLISHED
EVAPORATION RATE (N-BUTYL ACETATE = 1):
APPEARANCE AND ODOR: CLEAR/PALE YELLOW SLIGHT

SECTION VIII FIRE AND EXPLOSION HAZARDS

FLASH POINT AND METHOD: GREATER THAN 200° F (93.3 C) PENSKY-MARTENS CLOSED CUP
FLAMMABLE LIMITS /% VOLUME IN AIR:

EXTINGUISHING MEDIA: DRY CHEMICAL; CARBON DIOXIDE; FOAM; WATER SPRAY FOR LARGE FIRES.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS: FULL EMERGENCY EQUIPMENT WITH SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE CLOTHING SHOULD BE WORN Y FIRE FIGHTERS. DURING A FIRE, HDI VAPORS AND OTHER IRRITATING, HIGHLY TOXIC GASES MAY BE GENERATED BY THERMAL DECOMPOSITION OR COMBUSTION (SEE REACTIVITY DATA SECTION).

UNUSUAL FIRE AND EXPLOSION HAZARDS: CLOSED CONTAINER MAY CXPLODE WHEN EXPOSED TO EXTREME HEAT OR BURST WHEN CONTAMINATED WITH WATER (CO2 EVOLVED).

SECTION IX REACTIVITY

STABILITY: THIS IS A STABLE MATERIAL.

HAZARDOUS POLYMERIZATION: MAY OCCUR; CONTACT WITH MOISTURE OR OTHER MATERIALS WHICH REACT WITH ISOCYANATES OR TEMPERATURES OVER 400° F (204 C) MAY CAUSE POLYMERIZATION.

CONDITIONS AND MATERIALS TO AVOID: WATER, AMINES, STRONG BASES, ALCOHOLS, MITAL COMPOUNDS AND SURFACE ACTIVE MATERIALS.

HAZARDOUS DECOMPOSITION PRODUCTS: BY HIGH HEAT AND FIRE: CARBON DIOXIDE, CARBON MONOXIDE, OXIDES OF NITROGEN, TRACES OF HCN, HDI.

SECTION X EMPLOYEE PROTECTION

RESPIRATORY PROTECTION: A RESPIRATOR THAT IS RECOMMENDED OR APPROVED FOR USE IN ISOCYANATE CONTAINING ENVIROMENTS (AIR PURIFYING OR FRESH AIR SUPPLIED) MAY BY 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 CONTINOUS FLOW TYPE) IS RECOMMENDED. BEFORE AN AIR-PURIFYING RESPIRATOR CAN BE USED, AIR MONITIORING MUST BE PERFORMED TO MEASURE AIRBORNE CONCENTRATIONS OF HDI MONOMER, HDI PLYISOCYANATE AND ORGANIC SOLVENT(S). SEE THE OUTLINE BELOW FOR THE SPECIFIC CONDITIONS UNDER WHICH AIR-PURIFYING RESPIRATORS CAN BE USED. OBSERVE OSHA REGULATIONS FOR RESPIRATOR USE (29 CFR 1910.134).

SPRAY APPLICATION:

A. GOOD INDUSTRIAL HYGIENE PRACTICE DICTATES THAT WHEN ISOCYANATE BASED COATINGS ARE SPRAY APPLIED, SOME FORM OF RESPIRATORY PROTECTION SHOULD BE WORN. DURING THE SPRAY ALLOLCATION OF ORGANIC SOLVENT CCONTAINING CAOTINGS SYSTEMS, THE USE OF A SUPPLIED-AIR (EITHER POSITIVE PRESSURE OR CONTINUOUS FLOW TYPE) RESPIRATOR IS MANDATORY WHEN ONE OR MORE OF THE FOLLOWING CONDITIONS EXISTS:

- THE AIRBORNE ISOCYANATE CONCENTRATIONS ARE NOT KNOWN:OR
- THE AIRBORNE ISOCYANATE MONOMER CONDENTRATIONS EXCEED 0.05 PPM (10 TIMES THE TLV); OR
- THE AIRBORNE POLYISOCYANATE (POLYMERIC, OLIGOMERIC) CONCENTRATIONS EXCEED 5 MG/M3 AVERAGED OVER 8 HOURS OR 10 MG/M3 AVERAGED OVER 15 MINUTES (10 TIMES THE MGL); OR
- NO AIRBORNE SOLVENT CONCENTRATION EXCEEDS ITS ODOR THRESHOLD;OR
- SPRAYING IS PERFORMED IN A CONFINED SPACE (SEE OSHA CONFINED SPACE STANDARD 29 CHR 1910.146).

A PROPERLY FITTED AIR-PURIFYING (COMBINATION ORGANIC VAPOR AND PARTICULATE) RESPIRATOR, PROVEN BY TEST TO VE EFFECTIVE IN ISOCYANATE-CONTAINING SPRAY PAINT ENVIROMENTS, AND USES IN ACCORDANCE WITH ALL RECOMMINDATIONS MADE BY THE MANUFACTURER, CAN BE USED WHEN ALL OF THE FOLLOWING CONDITIONS ARE MET:

- THE AIRBORNE ISOCYANATE MONOMER CONCENTRATIONS ARE KNOWN TO BE BELOW 0.05 PPM (10 TIMES THE TLV); AND
- THE AIRBORNE POLYISOCYANATE (POLYMERIC, OLIGOMERIC) CONCENTRATIONS ARE KNOWN TO BE BELOW 5 MG/M3 AVERAGED OVER 8 HOURS OR 10 MG/M3 AVERAGED OVER 15 MINUTES (10 TIMES THE MGL); AND
- AT LEAST ONE SOLVENT HAS A PUBLISHED ODOR THRESHOLD*; AND
- AT LEAST ONE AIRBORNE SOLVENT CONCENTRATION EXCEEDS ITS ODOR THRESHOLD AND THAT SOLVENT'S ODOR THRESHOLD IS LOWER THAN ITS TLV.

B. DURING THE SPRAY APPLICATION OF A COATINGS SYSTEM NOT CONTAINING ORGANIC SOLVENTS A SUPPLIED-AIR (EITHER POSITIVE PRESSURE OR CONTINUOUS FLOW TYPE) RESPIRATOR IS MANDATORY WHEN ONE OR MORE OF THE FOLLOWING CONDITIONS EXISTS:

- THE AIRBORNE ISOCYANATE CONCENTRATIONS ARE NOR KNOWN; OR
- THE AIRBORNE ISOCYANATE MONOMER CONCENTRATION EXCEEDS THE TLV OF 0.005 PPM; OR
- THE AIRBORNEPOLYISOCANATE (POLYMERIC, OLIGOMERIC) CONCENTRATION EXCEEDS THE MGL OF 0.5 MG/M3 AVERAGED OVER 8 HOURS OR 1 MG/M3 AVERAGED OVER 15 MINUTES; OR
- SPRAYING IS PERFORMED IN A CONFINED SPACE (SEE OSHA CONFINED SPACE STANDARD 29 CFR 1910.146)

UNDER ANY OTHER CIRCUMSTANCES, DURING SPRAY APPLICATION OF A COATINGS SYSTEM NOT CONTAINING SOLVENTS, GOOD INDUSTRIAL HYGIENE PRACTICE AIR-PURIFYING RESPIRATOR SHOULD BE WORN.

NON-SPRAY OPERATIONS:

A. DURING NON-SPRAY OPERATIONS SUCH AS MIXING, BATCH MAKING, BRUSH OR ROLLER APPLICATION, ETC. , AT ELEVATED TEMPERATURES (FOR EXAMPLE, HEATING OF MATERIAL OR APPLICATION TO A HOT SUBSTRATE), IT IS POSSIBLE TO BE EXPOSEDTO AIRBORNE ISOCYANATE VAPORS. THEREFORE, WHEN THE COATINGS SYSTEM HT AIRBORNE ISOCYANATE VAPORS. THEREFORE, WHEN THE CAOTINGS SYSTEM CONTAINS SOLVENTS AND WILL BE APPLIED IN A NON-SPRAY MANNER, A SUPPLIED-AIR (EITHER POSITIVEPRESSURE OR CONTINUOUS FLOW THPE) RESPIRATOR IS MANDATORY WHEN ONE OR MORE OF THE FOLLOWING CONDITIONS EXISTS:

- THE AIRBORNE ISOCYANTE CONCENTRATIONS ARE NOT KNOWN; OR
- THE AIRBORNE ISOCYANATE MONOMER CONCENTRATIONS EXCEED 0.05 PPM (10 TIMES THE TLV); OR
- THE POLYISOCYANATE (POLYMERIC, OLIGOMERIC) CONCENTRATIONS EXCEED 5 MG/M3 AVERAGED OVER 8 HOURS OR 10 MG/M3 AVERAGED OVER 15 MINUTES (10 TIMES THE MGL) ; OR
- NO AIRBORNE SOLVENT CONCENTRATION EXCEEDS ITS ODOR THRESHOLD; OR
- OPERATIONS ARE PERFORMED IN A CONFINED SPACE (SEE OSHA CONFINED SPACE STANDARD 49 CFR 1910.146).

A PROPERLY FITTED AIR PURIFYING (COMBINATION ORGANIC VAPOR AND PARTICULATE) RESPIRATOR, PROVEN BY TESTTO BE EFFECTIVE IN ISOCYANATE-CONTAINING PAINT ENVIROMENTS, AND USED IN ACCORDANCE WITH ALL RECOMMENDATIONS MADE BY THE MANUFACTURER, CAN BE USED WHEN ALL OF THE FOLLOWING CONDITIONS ARE MET:

- THE AIRBORNE CONCENTRATIONS OF THE ISOCYANATE MONOMER ARE BELOW 0.05 PPM (10 TIMES THE TLV); AND
-THE AIRBORNE POLYISOCYANATE (POLYMERIC, OLIGOMERIC) CONCENTRATIONS ARE KNOWN TO BE BELOW 5 MG/M3 AVERATED OVER 8 HOURS OR 10 MG/M3 AVERAGED OVER 15 MINUTES (10 TIMES THE MGL); AND
- AT LEAST ONE SOLVENT HAS A PUBLISHED ODOR THRESHOLD*; AND
- AT LEAST ONE AIRBORNE SOLVENT CONCENTRATION EXCEEDS ITS ODOR THRESHOLD AND THAT SOLVENT'S ODOR THRESHOLD IS LOWER THAN ITS TLV.

B. DURING NON-SPRAY OPERATIONS USING A SOLVENT-FREE COATINGS SYSTEM, A SUPPLIED-AIR (EITHER POSITIVE PRESSURE OR CONTINUOUS FLOW TYPE) RESPIRATOR IS MANADATORY WHEN ONE OR MORE OF THE FOLLOWING CONDITOINS EXISTS:

- THE AIRBORNE ISOCYANATE CONCENTRATIONS ARE NOT KNOWN; OR
- THE AIRBORNE ISOCYANATE MONOMER CONCENTRATIONS EXCEED THE T.V OF 0.005 PPM; OR
- THE AIRBORNE PLOYIOSCYANTE (POLYMERIC, OLIGOMERIC) CONCENTRATIONS EXCEED THE MGL OF 0.5 MG/M3 AVERAGED OVER 8 HOURS, OR 1.0 MG.M3 AVERAGED OVER 15 MINUTES; OR
-OPERATIONS ARE PERFORMED IN ACONFINED SPACE (SEE OSHA CONFINED SPACE STANDARD 49 CFR 1910.146).

VENTILATION REQUIRMENTS: 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 PROTETION, THE USE OF RESPIRATORS AND OTHER PERSONAL PROTECTIVE EQUIPMENT IS MANDATED (SEE RESPIRATOR REQUIREMENTS). EXHAUST AIR MAY NEED TO BE CLEANED BY SCRUBBERS OR FILTERS TO REDUCE ENVIROMENTLA CONTAMINATION. CURING OVENS MUST BE VENTILLATED TO PREVENT EMISSIONS INTO THE WORKPLACE. IF OVEN OFF-GASES ARE NOT VENTED PROPERLY (I.E. THEY ARE RELEASED INTO THE WORK AREA), IT IS POSSIBLE TO BE EXPOSED TO AIRBORNE MONOMERIC HDI

MONITORING: REFER TO PATTY'S INDUSTRIAL HYGIENE AND TOXICOLOGY-VOLUME 1 (3RD EDITION) CHAPTER 17 AND VOLUME III (1ST EDITION) CHAPTER 3-FOR GUIDANCE CONCERNING APPROPRIATE AIR SAMPLING STRATEGY TO DETERMINE AIRBORNE CONCENTRATIONS OF ISOCYANATES AND SOLVENT.

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MEDICAL SURVEILLANCE: MEDICAL SUPERVISION OF ALL EMPLOYEES WHO HANDLE OR COME IN CONTACT WITH THIS PRODUCT IS RECOMMENDED. THIS SHOULD INCLUDE PREEMPLOYMENT AND PERIODIC MEDICAL EXAMINATOINS WITH RESPIRATORY FUNCTION TESTS (FEV, FVC AS A MINIMUM). PERSONS WITH ASTHMA-TYPE CONDITIONS, CHRONIC BRONCHITIS, OTHER CHRONIC RESPIRATORY DESEASES OR RECURRENT SKIN ECZEMA OR SENSITIZATION SHOULD BY EXCLUDED FROM WORKING WITH ISOCYANATES. ONCE A PERSON IS DIAGNOSED AS SENSITIZED TO AN ISOCYANATE, NO FURTHER EXPOSURE CAN BE PERMITTED.

ADDITIONAL PROTECTIVE MEASURES: SAFETY SHOWERS AND EYEWASH STATIONS SHOULD BE AVAILABLE. EDUCATE AND TRAIN EMPLOYEES IN SAFE USE OF PRODUCT. FOLLOW ALL LABEL INSTRUCTIONS. FOR ADDITIONAL INFORMATION, SEE BAYER'S "HEALTH AND SAFETY INFORMATION FOR HEXAMETHYLENE DIISOCYANATE BASED POLYISOCYANATES".

* WE RECOMMEND USING THE GEOMETRIC MEAN AIR ODOR THRESHOLD FOUND IN TABLE 5.1 OF "ODOR THRESHOLDS FOR CHEMICALS WITH ESTABLISHED OCCUPATIONAL HEALTH STANDARDS," - AIHA
PROTECTIVE CLOTHING:

SECTION XI ENVIRONMENTAL PROTECTION

SPILL OR LEAK PROCEDURES: EVACUATE NONESSENTIAL PERSONNEL. REMOVE ALL SOURCES OF IGNITION AND VENTILATE THE AREA. DIKE OR IMPOUND SPILLED MATERIAL AND CONTROL FURTHER SPILLAGE IF FEASIBLE. NOTIFY APPROPRIATE AUTHORITIES IF NECESSARY. COVER THE SPILL WITH SAWDUST, VERMICULITE, FULLER'S EARTH OR OTHER ABSORBENT MATERIAL. POUR DECONTAMINATION SOIUTION 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 SOULUTIONS. DECONTAMINATION SOLUTIONS: NONIONIC SURFACTANT UNION CARBIDE'S TERGITOL TMN-10 (20%) AND WATER (80%); CONCENTRATED AMMONIA (3-8%0, DETERGENT (2%) AND WATER (90-95%). RESPIRATORY PROTECTION IS RECOMMENDED DURING SPILL CLEANUP (SEE RESPIRATORY PROTECTION RECOMMENDATIONS).
WATER DISPOSAL METHOD: WASTE MUST BE DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL ENVIROMENTAL CONTROL REGULATIONS. INCINERATION IS THE PREFERRED METHOD. EMPTY CONTAINERSMUST BE HANDLED WITH CARE DUE TO PRODUCT RESIDUE. DECONTAMIMATE CONTAINERS PRIOR TO DISPOSAL. DO NOT HEAT OR CUT EMPTY CONTAINER WITH ELECTRIC OR GAS TORCH (SEE FORE AND EXPLOSION DATA AND REACTIVITY DATA SECTIONS)

SECTION XII SPECIAL PRECAUTIONS

GROUND ALL TRANSFER EQUIPMENT. TAKE PRECAUTIONARY MEASURES AGAINST STATIC DISCHARGE. HANDLE AS AN INDUSTRIAL CHEMICAL. KEEP CONTAINER TIGHTLY CLOSED WHEN NOT IN USE. PRACTICE GOOD CAUTION AND PERSONAL CLEANLINESS TO AVOID SKIN AND EYE CONTACT. HOLD BULK STORAGE UNDER NITROGEN BLANKET. STORE IN A COOL, DRY PLACE WITH ADEQUATE VENTILATION. KEEP AWAY FROM OPEN FLAMES AND HIGH TEMPERATURES.
STORAGE TEMPERATURE (MIN/MAX): -33° F (-36 C)/122 °F (50 C)
SHELF LIFE: 12 MONTHS
SPECIAL SENSITIVITY: IF CONTAINER IS EXPOSED TO HIGH HEAT, IT CAN BE PRESSUREIZED AND POSSIBLY RUPTURE EXPLOSIVELY. HDI REACTS SOLWLY WITH WATER TO FORM CO2 GAS. THIS GAS CAN CAUSE SEALED CONTAINERS TO EXPAND AND POLLIBLY RUPTURE EXPLOSIVELY.
HANDLING/STORAGE PRECAUTIONS: KEEP AWAY FORM HEAT, SPARKS AND OPEN FLAME. GROUND CONTAINERS DURING STORAGE AND TRANSFER OPERATIONS. STORE IN TIGHTLY CLOSED CONTAINERS TO PREVENT MOISTURE CONTAMINATION. DO NOT RESEAL IF CONTAMINATION IS SUSPECTED. AT MAZIMUM STORAGE TEMPERATURES NOTED MATERIAL MAY SLOWLY POLYMERIZE WITHOUT HAZARD. IDEAL STORAGE TEMPERATURE RANGE FOR EASE OF HANDLING IS 50-81°F (10-27 C). AVOID CONTACT WITH SKIN AND EYES. EMPLOYEE EDUCATION AND TRAINING IN THE SAFE USE AND HANDLING OF THIS COMPOUND ARE REQUIRED UNDER THE OSHA HAZARD COMMUNICATION STANDARD.
OTHER NOTES: WHEN WORKING WITH A TWO-COMPONENT WATERBORNE POLYURETHANE SYSTEM, TAKE PRECAUTIONS TO ASSURE THAT CONTAINERS OF MIXED MATERIAL ARE WELL VENTED. POLYISOCYANATES WILL REACT WITH THE WATER IN THE SYSTEM TO FORM CO2 GAS WHICH CAN BE RELEASEDBY VENTING THE CONTAINER. IT IS RECOMMENDED TO OCCASIONLLY AGITATE THE COATING SYSTEM WHEN IN USE TO PREVENT POTENTIAL OVERFLOW. THE FORMATION OF CO2 WILL GENERATE PRESSURE IN A SELAED CONTAINER CAUSING THE CONTAINER TO EXPAND AND POSSIBLY RUPTURE EXPLOSIVELY. WHEN WORKING WITH A PRESSURE POT, INSURE THAT PRESSURE RELEASE VALVES ARE CLEAN AND PROPER WORKING CONDITION.

SECTION XIII TRANSPORTATION REQUIREMENTS

IMPORTANT NOTE: SHIPPING DESCRIPTIONS MAY VARY BASED ON MODE OF TRANSPORT, QUANTITIES, PACKAGE SIZE, AND/OR ORIGIN AND DESTINATION. CONSULT YOUR COMPANY'S HAZARDOUS MATERIALS/DANGEROUS GOODS EXPERT FOR INFORMATION SPECIFIC TO YOUR SITUATION.

GROUND (DOT): NOT REGULATED, LIMITED QUANTITY
AIR (IATA) : NOT REGULATED, LIMITED QUANTITY
OCEAN (IMDG) : NOT REGULATED, LIMITED QUANTITY

SECTION XIV OTHER REGULATORY CONTROLS

NOT MEANT TO BE ALL-INCLUSIVE. SELECTED REGULATIONS PRESENTED.

A. SARA TITLE III SECTION 311/312 HAZARDS: IMMEDIATE HEALTH HAZARD; DELAYED HEALTH HAZARD;REACTIVE HAZARD

B. SARA TITLE III SECTION 313: TOXIC CHEMICALS: NONE
RCRA STATUS: IF DISCARDED IN ITS PURCHASED FORM, THIS PRODUCT WOULD NOT BE A HAZARDOUS WASTE EITHER BY LISTING OR BY CHARACTERISTIC. HOWEVER, UNDER RCRA, IT IS THE RESPONSIBILITY OF THE PRODUCT USER TO DETTERMINE AT THE TIME OF DISPOSAL, WHETHER A MATERIAL CONTAINANG THE PRODUCT OR DERIVED FROM THE PRODUCT SHOULD BE CLASSIFIED AS A HAZARDOUS WASTE. (40 CFR 261.20-24)

C. WHMIS CLASSIFICATION:

D. TSCA STATUS: ON TSCA INVENTORY

E. OSHA HAZARD COMM. STD.: THIS PRODUCT IS HAZARDOUS UNDER THE CRITERIA OF THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200.

OTHER REGULATORY INFORMATION: THE FOLLOWING CHEMICALS ARE SPECIFICALLY LISTED BY INDIVIDUAL STATES; OTHER PRODUCT SPECIFIC HELATH AND SAFETY DATA IN OTHER SECTIONS OF THE MSDS MAY ALSO BE APPLICABLE FOR STATE REQUIREMENTS. FOR DETAILS ON YOUR REGULATORY REQUIREMENTS YOU SHOULD CONTACT THE APPROPRIATE AGENCY IN YOUR STATE.

COMPONENT NAME /CAS NUMBER	CONCENTRATION	STATE CODE
ALIPHATIC POLYISOCYANATES NJTSRN (31765300002)-7684P	15-25%	PA3, NJ4
HEXAMETHYLENE DIISOCYANATE (HDI) 28182-81-2	75-85%	PA1, MA, NJ1

MA = MASSACHUSETTS HAZARDOUS SUBSTANCE LIST
NJ1 = NEW JERSEY HAZARDOUS SUBSTANCE LIST
NJ4 = NEW JERSEY OTHER - INCLUDED IN 5 PREDOMINANT INGREDIENTS > 1%
NJTSRN = NEW JERSEY TRADE SECRET REGISTRY NUMBER
PA1 = PENNSYLVANIA HAZARDOUS SUBSTANCE LIST
PA3 = PENNSYLVANIA NON-HAZARDOUS PRESENT AT 3% OR GREATER.

*LESS THAN 0.05% BASED ON RESIN SOLIDS AT THE TIME OF MANUFACTURE.

SECTION XV STATE REGULATORY INFORMATION

NONE KNOWN

CA = CALIFORNIA HAZ. SUBST. LIST; CA65 = CALIFORNIA SAFE DRINKING WATER AND TOXICS ENFORCEMENT ACT LIST; CT = CONNECTICUT TOX. SUBST. LIST; FL = FLORIDA SUBST. LIST; IL = ILLINOIS TOX. SUBST. LIST; LA = LOUISIANA HAZ. SUBST. LIST; MA = MASSACHUSETTS SUBST. LIST; ME = MAINE HAZ. SUBST. LIST; MN = MINNESOTA HAZ. SUBST. LIST; NJ = NEW JERSEY HAZ. SUBST. LIST; PA = PENNSYLVANIA HAZ. SUBST. LIST; RI = RHODE ISLAND HAZ. SUBST. LIST.

SECTION XVI SPECIAL NOTES

NEW MSDS.

THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE CORRECT. HOWEVER, MILAMAR COATINGS, INC. MAKES NO WARRANTY, EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. MILAMAR COATINGS, INC. ASSUMES NO RESPONSIBILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.

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