SAFETY DATA SHEET

PRODUCT CODE: 520

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **NP520 PART A**
PRODUCT CODES: **520 A**

MANUFACTURER: National Polymers Inc.
STREET ADDRESS: 9 Guttman Avenue
CITY, STATE, ZIP: Charleroi, Pa. 15022

INFORMATION PHONE: 724-483-9300
EMERGENCY PHONE: Chemtrec 800-424-9300
FAX PHONE: 724-483-9306

PREPARED BY: Gary Zippay

DATE REVISED: 10/27/20

Chemical Name or Class: Polyacrylate solution

SECTION 2: HAZARDS IDENTIFICATION

Hazard Overview

GHS Classification: (Reproductive toxicity Category 2), (Hazardous to the aquatic environment, acute hazard Category 3)
GHS Label Elements and Precautionary Statements:
Label Elements: Health Hazard

Hazard Statements:
H361 Warning: Suspect of damaging fertility or the unborn child.
H402 Harmful to aquatic life.
Precautionary statements:
P102 Keep out of reach of children.
P103 Read label before use.
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P273 Avoid release to the environment.
Response:
P308+P313 IF exposed or concerned: Get medical advice/attention.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents/container to a waste disposal facility in accordance with local, state, federal or international laws.

HMIS HAZARD CLASSIFICATION
HEALTH: 1 **FLAMMABILITY: 1** **REACTIVITY: 0** **PERSONAL PROTECTIVE EQUIPMENT: G**

POTENTIAL HEALTH EFFECTS
EYES:
MATERIAL OR HIGH VAPOR CONCENTRATION CAN CAUSE IRRITATION TO THE EYES.
SKIN:
MAY CAUSE IRRITATION TO SKIN.
INGESTION:
LIQUID CAN CAUSE IRRITATION TO THE MUCOUS MEMBRANES IF SWALLOWED.
INHALATION:
HIGH VAPOR CONCENTRATION CAN CAUSE IRRITATION TO THE RESPIRATORY TRACT.
HEALTH HAZARDS (ACUTE AND CHRONIC):
PROLONGED OR REPEATED EXPOSURE MAY CAUSE ASTHMA AND SKIN SENTIZATION OR OTHER ALLERGIC RESPONSES.
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:
RESPIRATORY CONDITIONS OR OTHER ALLERGIC AILMENTS. Repeated or prolonged exposure of high levels of solvents via inhalation and ingestion may affect the liver or central nervous system.
CARCINOGENICITY
OSHA: NO **NTP: NO** **IARC: NO**
ADDITIONAL CARCINOGENICITY INFORMATION:
None

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CAS NO.	OSHA PEL	ACGIH TLV	OSHA STEL	WEIGHT %
Water	7732-18-5	none	none	none	40-60
Polyacrylate resin	trade secret	none	none	none	30-50
Reactive diluent	716336-43-5	none	none	none	<3.0
Triethanolamine	102-71-6	none	5mg/m3	none	<2.0
Propylene glycol n-butyl ether					
	5131-66-8	none	none	none	<3.0
*Diethanolamine	111-42-2	none	1mg/m3	none	<0.01%
Polyether Polyol	25723-16-4	none	none	none	>=1.0%
*Ammonia	7664-41-7	50ppm	25ppm	35ppm	<1.0%
Distillates (petroleum), hydrotreated light naphthenic					
	64742-53-6	5mg/m3	5mg/m3	5mg/m3	<0.01%
*Methanol	67-56-1	200ppm	200ppm	250ppm	<0.01%
*Toluene	108-88-3	200ppm	20ppm	150ppm	<0.001%
Polyether modified polydimethylsiloxane NJTSRN 800963-5023					
	Trade secret	none	none	none	<2.0%
*Xylene (component of Polyether modified polydimethylsiloxane)					
	1330-20-7	100ppm	100ppm	150ppm	<0.01%
Polyether and polyethersiloxane emulsion					
	Trade secret	NONE	NONE	NONE	< 3.0%
Octadecan-1-ol, ethoxylated (conmponent of Polyether and polyethersiloxane emulsion)					
	9005-00-9	NONE	NONE	NONE	<0.1%
Ethanol, 2-amino- (conmponent of Polyether and polyethersiloxane emulsion)					
	141-43-5	3ppm	3ppm	6ppm	<0.01%
Ethanol (conmponent of Polyether and polyethersiloxane emulsion)					
	64-17-5	1000ppm	1000ppm	1000ppm	<0.01%
Zinc, bis[1-(hydroxy-kO)-2(1H)-pyridinethionato-kS2], (T4) (component of Polyether and polyethersiloxane emulsion)					
	13463-41-7	none	none	none	<0.001%
Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl- (conmponent of Polyether and polyethersiloxane emulsion)					
	128-37-0	10mg/m3	10mg/m3	NONE	<0.01%
*Cyclohexane (conmponent of Polyether and polyethersiloxane emulsion)					
	110-82-7	300ppm	300ppm	NONE	<0.01%
Orthophosphoric acid (component of Polyether and polyethersiloxane emulsion)					
	7664-38-2	1 mg/m3	1mg/m3	3mg/m3	<0.01%

SECTION 3 NOTES: (*) TOXIC CHEMICAL(S) SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III AND OF 40 CFR 372 ARE PRESENT.

SECTION 4: FIRST AID MEASURES

EYES:
IMMEDIATELTY FLUSH WITH LARGE AMOUNTS OF WATER FOR AT LEAST FIFTEEN MINUTES WHILE LIFTING UPPER AND LOWER LIDS. GET IMMEDIATE MEDICAL ATTENTION.

SKIN:
WASH AFFECTED AREAS WITH SOAP AND WATER AND REMOVE ALL CONTAMINATED CLOTHING IMMEDIATLEY. GET MEDICAL ATTENTION IF REDDENING OR SWELLING OCCURS. THOROUGHLY CLEAN SHOES AND WASH CLOTHING BEFORE REUSE.

INGESTION:
DO NOT INDUCE VOMITTING UNLESS DIRECTED TO DO SO BY MEDICAL PERSONNEL. INGESTION OR VOMITING MAY CAUSE ASPIRATION INTO THE LUNGS RESULTING IN CHEMICAL PNEUMONITIS.

INHALATION:
REMOVE VICTIM TO FRESH AIR IF EFFECTS PERSIST AND ADMINISTER OXYGEN IF NECESSARY.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABLE LIMITS IN AIR, (% by volume) UPPER: not available LOWER: not available

FLASH POINT: >200+F

METHOD USED:
SETA FLASH

EXTINGUISHING MEDIA:
FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER FOG

SPECIAL FIRE FIGHTING PROCEDURES:
TOXIC FUMES WILL BE EVOLVED WHEN THIS MATERIAL IS INVOLVED IN A FIRE. A SELF CONTAINED BREATHING APPARATUS SHOULD BE AVAILABLE FOR FIRE FIGHTERS. COOL ALL FIRE EXPOSED CONTAINERS WITH WATER.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

NONE KNOWN.

SECTION 6: RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
AVOID CONTACT WITH MATERIAL. WEAR THE APPROPRIATE SAFETY EQUIPMENT. STOP SPILL AT SOURCE, DYKE AREA TO PREVENT SPREADING. PUMP LIQUID TO SALVAGE TANK. TAKE UP THE REMAINDER WITH AN ABSORBENT SUCH AS CLAY AND PLACE IN DISPOSAL CONTAINERS. VENTILATE AREA TO REMOVE VAPORS OR DUST.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:
AVOID ALL SKIN CONTACT. AVOID BREATHING VAPORS. RESEAL PARTIALLY USED CONTAINERS. PROPERLY LABEL ALL CONTAINERS. WASH WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING, OR USING TOILET FACILITIES. OBSERVE GOOD INDUSTRIAL HYGIENE AND SAFE WORKING PRACTICES. PROTECT FROM FREEZING!!!
OTHER PRECAUTIONS:
MIXED MATERIALS CONTAIN THE HAZARDS OF ALL THE COMPONENTS, THEREFORE, READ THE SDS OF ALL COMPONENTS TO BECOME FAMILIAR WITH ALL HAZARDS PRIOR TO USING THIS PRODUCT.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION:
RESPIRATORY PROTECTION IS RECOMMENDED IN INSUFFICIENTLY VENTILATED WORKING AREAS AND DURING HEATING OR SPRAYING. USE NIOSH APPROVED AIR-SUPPLIED RESPIRATOR DURING CLEANING, HIGH TEMPERATURE PROCESSING OR WHEN THERMAL DECOMPOSITION IS SUSPECTED.
VENTILATION:
AVOID BREATIHING VAPORS. VENTILLATION MUST BE SUFFICIENT TO CONTROL VAPORS
PROTECTIVE GLOVES:
IMPERVIOUS GLOVES – NEOPRENE OR RUBBER
EYE PROTECTION:
SPLASH PROOF GOGGLES OR SAFETY GLASSES WITH SIDE SHIELDS
OTHER PROTECTIVE CLOTHING OR EQUIPMENT:
CLEAN BODY COVERING CLOTHING AS WELL AS APRON, FOOTWEAR EQUIPMENT SHOULD BE USED AS DEEMED NECESSARY TO AVOID CONTACT WITH THE MATERIAL.
WORK HYGIENIC PRACTICES:
OBSERVE GOOD GENERAL HYGIENIC PRACTICES.

SEE SECTION THREE FOR OCCPATIONAL EXPOSURE LIMIT VALUES.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: **low viscosity liquid – milky white color – NEGLIGIBLE ODOR**
BOILING POINT OR RANGE: **N/A**
VAPOR DENSITY (AIR = 1): **N/A**
SPECIFIC GRAVITY (H2O = 1): **1.08**
EVAPORATION RATE: **N/A**
SOLUBILITY IN WATER: **emulsifiable/miscible**

Odor Threshhold: **N/A**
pH: **N/A**
Melting point/freezing point: **N/A**
Vapor Pressure: **N/A**
Auto Ignition Temperature: **N/A**
Partition Coefficient: n-octanol/water: **N/A**
Decomposition Temperature: **N/A**

SECTION 10: STABILITY AND REACTIVITY

STABILITY:
STABLE
CONDITIONS TO AVOID (STABILITY):
PROTECT FROM FREEZING!!!
INCOMPATIBILITY (MATERIAL TO AVOID):
AVOID CONTACT WITH STRONG OXIDIZING AGENTS, ISOCYANATES AND WATER REACTIVE MATERIALS.
HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:
CARBON MONOXIDE, CARBON DIOXIDE AND NITROGEN COMPOUNDS.
HAZARDOUS POLYMERIZATION:
WILL NOT OCCUR.

SECTION 11: TOXICOLOGICAL INFORMATION

No data for the product itself.
Component data:
Polyether modified polydimethylsiloxane NJTSRN 800963-5023:
Acute oral toxicity: LD50 rat :> 8,000 mg/kg (OECD 401) – GLP: yes.
Skin corrosion: rabbit: no skin irritation (OECD 404) – GLP: yes
Serious eye damage/eye irritation: rabbit: no eye irritation (OECD 405) – GLP: yes
Repeated dose toxicity: Absorption of ingredients (solvents) by inhalation and/or repeated skin contact has caused injury to liver, kidney, brain, respiratory system, blood, and/or bone marrow in laboratory animals. In humans, inhaling high concentrations are irritating to the respiratory tract. Has caused headaches, dizziness, nausea, vomiting and CNS depression (drowsiness, loss of coordination and fatigue). Repeated skin contact may cause irritation. Repeated eye contact may cause irritation. Repeated ingestion may irritate the digestive tract; high dosages may cause CNS depression.
(CAS 1330-20-7) xylene as a component of polyether modified polydimethylsiloxane:
Acute oral toxicity: LD50 rat: 4,300 mg/kg (EC 92/69/EEC B.1) – GLP: no.
Acute inhalation toxicity: LC50 rat: 5000ppm @ 4h.
Acute dermal toxicity: LD50 rabbit: 1,700 mg/kg. LD50 rabbit: > 4,200 mg/kg.
Skin corrosion: rabbit: moderate skin irritation.
Serious eye damage/eye irritation: rabbit: result-eye irritation.
Repeated dose toxicity: Animal studies have shown Xylene to cause fetotoxic effects at dosage levels at or near maternal toxicity levels. Excessive inhalation of Xylene has caused hearing loss in laboratory animals. Chronic skin contact w/Xylene has caused dermatitis.
Polyether and polyethersiloxane emulsion CAS# trade secret:
Germ Cell Mutagenicity – In vitro
(CAS# 9005-00-9) Octadecan-1-ol, ethoxylated: Ames test (OECD 471): negative. Chromosomal aberration (OECD 473): negative. Gene mutation (OECD 476): negative.
(CAS# 141-43-5) Ethanol, 2-amino-: Ames test (OECD TG 474): negative.
(CAS# 7664-38-2) Orthophosphoric acid: Ames test (OECD 471): negative. Chromosomal aberration (OECD 473): negative

SECTION 12: ECOLOGICAL INFORMATION

Do not allow to enter soil, waterways or waste water canal
Component data:
Polyacrylate Resin CAS# trade secret:
Biodegradation: 60%, 28d; not readily biodegradable
Acute and prolonged toxicity to fish: LC50 zebra fish: >100 mg/l, 96h (Ecotoxicological reports on a comparable product)
Acute Toxicity to Aquatic Invertebrates: EC50 Daphnia magna: 70.7 mg/l, 48h (Studies of a comparable product)
Toxicity to Microorganisms: EC50 activated sludge: > 10,000 mg/l (Ecotoxicological reports on a comparable product)
Polyether modified polydimethylsiloxane NJTSRN 800963-5023:
Biodegradability: Result – not readily biodegradable (0%) – exposure time 28d (OECD 301)

SECTION 13: WASTE DISPOSAL

WASTE DISPOSAL METHOD:
DISPOSE OF THE MATERIAL IN A WASTE DISPOSAL SITE IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL LAW.

SECTION 14: Transport Information

DOT: Not Regulated

IMO/IMDG: Not Regulated

SECTION 15: REGULATORY INFORMATION

No data for the product itself.
Component data:
Polyether modified polydimethylsiloxane NJTSRN 800963-5023:
On TSCA List & Canadian DSL List
Massachusetts Right to Know:
CAS# 75-07-0 Acetaldehyde, CAS# 50-00-0 Formaldehyde, CAS# 123-91-1 1,4-Dioxane, CAS# 75-56-9 Propylene oxide
Pennsylvania Right to Know:
Polyether modified polydimethylsiloxane, Polyether, CAS#1330-20-7 Xylene, CAS# 100-41-4 Ethyl benzene
New Jersey Right to Know:
Polyether modified polydimethylsiloxane, Polyether
California Prop 65 WARNING: This product can expose you to chemicals including ethyl benzene, cumene, acetaldehyde, formaldehyde, 1,4-Dioxane, Propylene oxide, benzene, which is/are known to the State of California to cause cancer, and Toluene, Ethylene oxide, benzene, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov
(CAS 1330-20-7) xylene as a component of polyether modified polydimethylsiloxane:
US EPA CERCLA Hazardous Substances (40 CFR 302): RQ 100

Polyacrylate Resin CAS# trade Secret: Listed on TSCA inventory

Pennsylvania Right to Know Substance List:
Water (CAS# 7732-18-5), Polyacrylate Resin (CAS# Trade Secret), Polyether Polyol (CAS# 25723-16-4) Reactive Diluent (CAS# 716336-43-5), Triethanolamine (CAS# 102-71-6), Propylene n-Butyl Ether (CAS# 5131-66-8)
New Jersey Right to Know Substance List:
Water (CAS# 7732-18-5), Polyacrylate Resin (CAS# Trade Secret), Polyether Polyol (CAS# 25723-16-4), Ammonia (CAS# 7664-41-7), Reactive Diluent (CAS# 716336-43-5), Triethanolamine (CAS# 102-71-6), Propylene n-Butyl Ether (CAS# 5131-66-8)
Massachusetts Right to Know Substance List:
Water (CAS# 7732-18-5), Polyacrylate Resin (CAS# Trade Secret), Polyether Polyol (CAS# 25723-16-4), Ammonia (CAS# 7664-41-7), Distillates (petroleum), hydrotreated light naphthenic (CAS# 64742-53-6), Reactive Diluent (CAS# 716336-43-5), Triethanolamine (CAS# 102-71-6), Propylene n-Butyl Ether (CAS# 5131-66-8)
California Prop 65 List:
Methanol (CAS# 67-56-1), Toluene (CAS# 108-88-3), Diethanolamine (CAS# 111-42-2)

Polyether and Polysiloxane emulsion CAS# trade Secret:

CERCLA Hazardous Substance List (40 CFR 302.4):
Ethanol – 100# RQ
Cyclohexane – 1,000# RQ
Orthophosporic acid – 5,000# RQ
SARA 311/312 Hazardous Chemical
Component Polyether and Polysiloxane emulsion: TPQ 10,000#
Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
(CAS# 7664-38-2) Orthophosphoric acid: 5000# RQ
California Prop 65 WARNING:
(CAS 64-17-5) Ethanol: Known to the state of California to cause cancer and birth defects or other reproductive harm.
Component Polyether and Polysiloxane emulsion: on the TSCA and Canada DSL lists

SECTION 16: OTHER INFORMATION

DISCLAIMER: The information Contained herein is based on the data available and is believed to be accurate. However, the manufacturer makes no warranty expressed or implied regarding the accuracy of this data or the results obtained from the use thereof. Accordingly, we assume no responsibility for injury from the use of this product.

N/A = Not Available
See Section 1 for date of preparation

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **NP520 PART B**
PRODUCT CODES: **520 B**

MANUFACTURER: National Polymers Inc.
STREET ADDRESS: 9 Guttman Avenue
CITY, STATE, ZIP: Charleroi, Pa. 15022

INFORMATION PHONE: 724-483-9300
EMERGENCY PHONE: Chemtrec 800-424-9300
FAX PHONE: 724-483-9306

PREPARED BY: Gary Zippay

DATE REVISED: 10/27/20

Chemical Name or Class: HDI isocyanate

SECTION 2: HAZARDS IDENTIFICATION

Hazard Overview

GHS Classification of the substance or mixture: (Sensitization, skin Category 1), (Acute toxicity, inhalation Category 4), (Specific target organ toxicity; single exposure; respiratory tract irritation Category 3)
GHS Label Elements and Precautionary Statements:
Label Elements: Exclamation Mark

Hazard Statements:
H317 Warning: May cause an allergic skin reaction
H332 Warning: Harmful if inhaled
H335 Warning: May cause respiratory irritation.
Precautionary statements:
P102 Keep out of reach of children.
P103 Read label before use
P261 Avoid breathing dust/fume/gas/mist/vapours/spray
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves and clothing to prevent skin contact.
P271 Use only outdoors or in a well-ventilated area
Response:
P302 + P352 IF ON SKIN: wash with plenty of soap and water.
P333 + P313 IF SKIN irritation or rash occurs: Get medical advice/attention.
P321 Specific treatment (see ……. On this label).
P363 Wash contaminated clothing before reuse.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
Storage:
P405 Store locked up.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed
Disposal:
P501 Dispose of contents/container to a waste disposal facility in accordance with local, state, federal or international laws

HMIS HAZARD CLASSIFICATION
HEALTH: 2 **FLAMMIBILITY: 1** **REACTIVITY: 1** **PERSONAL PROTECTIVE EQUIPMENT: G**

POTENTIAL HEALTH EFFECTS
EYES:
CAN CAUSE SEVERE IRRITATION, REDNESS, TEARING, OR BLURRED VISION AS WELL AS CORNEAL OPACITY AND CONJUNTIVITIS. MAY CAUSE TEMPORARY CORNEAL INJURY.
SKIN:
MAY CAUSE IRRITATION, DEFATTING AND DERMATTITIS. MAY CAUSE SENSITIZATION. PERSONS PREVIOUSLY SENSITIZED CAN EXPERIENCE ALLERGIC SKIN REACTION.
INGESTION:
CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITTING, DIARRHEA. ASPIRATION OF MATERIAL INTO THE LUNGS CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL. CAN CAUSE CORROSIVE ACTION TO THE MUCOUS MEMBRANES AND DIGESTIVE TRACTS.
INHALATION:

CAN CAUSE NAUSEA AND RESPIRATORY IRRITATION, DIZZINESS, WEAKNESS, FATIGUE, HEADACHE, AND POSSIBLE UNCONSCIOUSNESS. BURNING SENSATION TO MUCOUS MEMBRANES, SHORTNESS OF BREATH AND FLU LIKE SYMPTOMS MAY OCCUR. AS A RESULT OF PREVIOUS EXPOSURES, CERTAIN INDIVIDUALS MAY DEVELOP SENSITIZATION TO DIISOCYANATES, WHICH MAY CAYSE THEM TO REACT TO A LATER EXPOSURE. SYMPTOMS INCLUDE CHEST TIGHTNESS, WHEEZING, COUGH, SHORTNESS OF BREATH, OR ASTHMATIC ATTACK. EXTREME ASTHMATIC ATTACKS CAN BE LIFE THREATENING.

HEALTH HAZARDS (ACUTE AND CHRONIC):

CAN CAUSE SENSITIZATION BY EXPOSURE THROUGH CONTACT OR HIGH CONCENTRATIONS OF VAPOR. OVER-EXPOSURE TO THIS MATERIAL CAN CAUSE CARDIAC ABNORMALITIES. OVEREXPOSURE CAN POSSIBLY CAUSE ANEMIA, LIVER ABNORMALITIES, KIDNEY DAMAGE, OR EYE DAMAGE. MAY CAUSE ASTHMA OR OTHER RESPIRATORY DISORDERS, BRONCHITIS, EMPHYSEMA, HYPERACTIVITY, AND ECZEMA.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

RESPIRATORY CONDITIONS OR OTHER ALLERGIC AILMENTS

CARCINOGENICITY

OSHA: NO NTP: NO IARC: NO

ADDITIONAL CARCINOGENICITY INFORMATION: NO LISTED INGREDIENTS OF THIS PRODUCT ARE REGULATED AS CARCINOGENS.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CAS NO.	OSHA PEL	ACGIH TLV	OSHA STEL	WEIGHT %
Hexamethylene-1,6-diisocyanate homopolymer	28182-81-2	NONE	NONE	NONE	60-100
Hydrophilic aliphatic polyisocyanate based on HDI	666723-27-9	NONE	NONE	NONE	15-25
*HEXAMETHYLENE DIISOCYANTE (HDI)	822-06-0	NONE	.005 PPM	NONE	<0.25

SECTION 3 NOTES:

(*) TOXIC CHEMICAL(S) SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III AND OF 40 CFR 372 ARE PRESENT.

SECTION 4: FIRST AID MEASURES

EYES:

HOLD THE EYES OPEN AND RINSE WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. GET IMMEDIATE MEDICAL ASSISTANCE.

SKIN:

FOR EXTREME EXPOSURE USE A SAFETY SHOWER IMMEDIATELY. WASH AFFECTED AREA WITH SOAP AND WATER AND REMOVE CONTAMINATED CLOTHING PROMPTLY.

INGESTION:

DO NOT INDUCE VOMITING. WASH/CLEAN MOUTH WITH WATER. MEDICAL ADVICE IS REQUIRED.

INHALATION:

REMOVE TO FRESH AIR IF EFFECTS PERSIST AND ADMINISTER OXYGEN IF NECESSARY. OBTAIN MEDICAL ASSISTANCE. ASTHMATIC TYPE SYMPTOMS MAY OCCUR IMMEDIATELY OR BE DELAYED FOR SEVERAL HOURS.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:

BASIC FIRST AID, DECONTAMINATION, SYMPTOMATIC TREATMENT.

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABLE LIMITS IN AIR, (% by volume) UPPER: N/A LOWER: N/A

FLASH POINT: >200F

METHOD USED:

SETA FLASH

EXTINGUISHING MEDIA:

FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL. IN CASE OF LARGER FIRES, WATER SPRAY SHOULD BE USED.

SPECIAL FIRE FIGHTING PROCEDURES:

ENTER CONFINED AREA WITH FULL BUNKER GEAR INCLUDING A POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS AND A GAS-TIGHT CHEMICAL HAZMAT SUIT. DURING A FIRE, HDI VAPORS AND OTHER HIGHLY TOXIC VAPORS MAY BE GENERATED. WATER OR EXTREME HEAT MAY CAUSE CONTAINERS TO EXPLODE. DO NOT ALLOW CONTAMINATED EXTINGUISHING WATER TO ENTER THE SOIL, GROUND-WATER OR SURFACE WATERS.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

WATER CONTAMINATION MAY CAUSE THE GENERATION OF CO2 AND CAUSE CONTAINER TO BURST OR EXPLODE. EXTREME HEAT MAY CAUSE CONTAINER TO EXPLODE. HAZARDOUS DECOMPOSITION PRODUCTS EVOLVED IN A FIRE MAY BE IRRITATING OR TOXIC.

SECTION 6: RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

WEAR RESPIRATOR AND PROTECTIVE CLOTHING. REMOVE ALL SOURCES OF IGNITIONS. ENSURE ADEQUATE VENTILLATION. KEEP UNAUTHORIZED PERSONS AWAY. REMOVE EXCESS WITH SPARK PROOF EQUIPMENT, AND THE REMAINDER WITH AN ABSORBENT SUCH AS CLAY AND PLACE IN DISPOSAL CONTAINERS (DO NOT SEAL CONTAINERS). DO NOT ALLOW TO ESCAPE INTO WATERWAYS, WASTEWATER OR SOIL.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:
STORE IN COOL DRY PLACE, SEAL ALL PARTIALLY USED CONTAINERS. WASH WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING, OR USING THE TOILET FACILITIES. MIXED MATERIALS CONTAIN THE HAZARDS OF ALL THE COMPONENTS, THEREFORE, READ THE SDS'S OF ALL THE COMPONENTS PRIOR TO USING MATERIAL. PROPERLY LABEL ALL CONTAINERS. KEEP MATERIAL AWAY FROM ALL SOURCES OF IGNITION. FOR PROFESSIONAL USE, NOT SUITABLE FOR USE IN HOMEWORKER (DIY) APPLICATIONS.

OTHER PRECAUTIONS:
AVOID ALL SKIN CONTACT. AVOID BREATHING VAPORS GENERATED FROM THE MATERIAL. OBSERVE CONDITIONS OF GOOD GENERAL HYGIENE AND SAFE WORKING PRACTICES. CONTAMINATED LEATHER ARTICLES CANNOT BE CLEANED AND MUST BE DISCARDED IF CONTAMINATED WITH THIS PRODUCT. WASH ALL CONTAMINATED CLOTHING PRIOR TO THE REUSE THEROF. WEAR APPROPRIATE SAFETY EQUIPMENT AND RESPIRATOR AT ALL TIMES WHEN VENTILATION IS NOT SUFFICIENT TO CONTROL VAPORS. OBSERVE OSHA REGULATIONS FOR RESPIRATOR USE (29 CFR 1910.134). WHEN SPRAYING MATERIAL AVOID EXPOSURE TO ALL MISTS GENERATED BY USING AIR SUPPLIED RESPIRATOR.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION:
RESPIRATORY PROTECTION REQUIRED IN INSUFFICIENTLY VENTILATED WORKING AREAS AND DURING SPRAYING. AN AIR-FED MASK, OR FOR SHORT PERIODS OF WORK, A COMBINATION OF CHARCOAL FILTER AND PARTICULATE FILTER IS RECOMMENDED. IN CASE OF HYPERSENSITIVITY OF THE RESPIRATORY TRACT (ASTHMATICS AND THOSE WHO SUFFER FROM CHRONIC BRONCHITIS) IT IS INADVISABLE TO WORK WITH THE PRODUCT.
VENTILATION:
EXHAUST VENTILATION SUFFICIENT TO KEEP AIRBORN CONCENTRATIONS OF HDI BELOW THEIR TLV AND MGL MAXIMUM. REFERS TO PATTY'S INDUSTRIAL HYGIENE & TOXICOLOGY- VOLUME 1 (3RD EDITION) CHAPTER 17 AND VOLUME III (1ST EDITION) CHAPTER 3 FOR DETAILS.
PROTECTIVE GLOVES:
IMPERVIOUS GLOVES, NEOPRENE OF RUBBER.
EYE PROTECTION:
SPLASH PROOF GOGGLES OR SAFETY GLASSES WITH SIDE SHIELDS. DO NOT WEAR CONTACT LENSES WHEN USING THIS PRODUCT.
OTHER PROTECTIVE CLOTHING OR EQUIPMENT:
CLEAN BODY COVERING CLOTHING AS WELL AS APRON FOOTWEAR OR OTHER EQUIPMENT SHOULD BE USED AS DEEMED NECESSARY TO AVOID CONTACT WITH THE MATERIAL.
WORK HYGIENIC PRACTICES:
OBSERVE GENERAL GOOD HYGIENIC PRACTICES.

SEE SECTION THREE FOR OCCPATIONAL EXPOSURE LIMIT VALUES.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: **PALE YELLOW LIQUID WITH NEGLIGIBLE ODOR**
BOILING POINT OR RANGE: **N/A**
VAPOR DENSITY (AIR = 1): **N/A**
SPECIFIC GRAVITY (H2O = 1): **1.15**
FLASH POINT: **365F**
EVAPORATION RATE: **N/A**
SOLUBILITY IN WATER: **NEGLIGIBLE**

Odor Threshhold: **N/A**
pH: **N/A**
Melting point/freezing point: **N/A**
Vapor Pressure: **5hPa at 20C / 9hPa at 50C / 10hPa at 55C**
Auto Ignition Temperature: **445C**
Partition Coefficient: n-octanol/water: **N/A**
Decomposition Temperature: **181C**

SECTION 10: STABILITY AND REACTIVITY

STABILITY:
STABLE UNDER NORMAL CONDITIONS

CONDITIONS TO AVOID (STABILITY):
AVOID EXCESSIVE HEAT OR OPEN FLAMES AS WELL AS ALL SOURCES OF IGNITIONS SUCH AS SPARKS, HEATERS, STATIC DISCHARGES, ETC.
INCOMPATIBILITY (MATERIAL TO AVOID):
AVOID WATER, AMINES, STRONG BASES, ALCOHOLS, METAL COMPOUNDS, AND SURFACE ACTIVE COMPOUNDS.
HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:
MAY FORM TOXIC CHEMICALS, CARBON MONOXIDE, CARBON DIOXIDE, OXIDES OF NITROGEN, HCN AND HDI.
HAZARDOUS POLYMERIZATION:
MOISTURE OR MATERIALS THAT REACT WITH ISOCYANATES AND TEMPERATURES ABOVE 400 DEGREES F MAY CAUSE POLYMERIZATION.

SECTION 11: TOXICOLOGICAL INFORMATION

No data for product itself. The following is component data:
Hexamethylene-1,6-diisocyanate homopolymer (CAS# 28182-81-2)
Acute Oral Toxicity: LD50 rat, female: > 2.000 mg/kg (OECD 423)
Acute Dermal Toxicity: LD50 rat, male/female: > 2.000 mg/kg (OECD 402) – Studies based on a comparable product
LD50 rabbit, male/female: >2.000 mg/kg – Studies based on a comparable product
Acute Inhalation Toxicity: Based on expert judgement, this material is harmful if inhaled
Skin Irritation: rabbit, no skin irritation (OECD 404)
Eye Irritation: rabbit, no eye irritation (OECD 405)
Skin sensitization: mouse, may cause sensitization by skin contact (OECD 429)
Respiratory sensitization: no classification
Prolonged toxicity: rat, male/female: 3.3 mg/m3, inhalative, 0-0.5-3.3-26.4 mg/m3, 90d, 6h/day, 5 days/week, aerosol – no damage to organs other than organs of respiration (OECD 413)
Carcinogenicity: no data
Reproductive toxicity/fertility: available data shows no indications for reproductive toxicity
Reproductive toxicity/teratogenicity: animal experiments on structurally similar compounds showed no indication of specific reproductive toxicity
Genotoxicity in vitro: Ames test, with/without metabolic activation, no indication of mutagenic effects (OECD 471)
HPRT test, with/without metabolic activation, result – negative (OECD 476)
Chromosome aberration test in vitro, Chinese hamster V79 cell line, with/without metabolic activation, result – negative (OECD 473)
STOT, single exposure: inhalative, result – may cause respiratory irritation
Hydrophilic aliphatic polyisocyanate based on HDI (CAS#666723-27-9)
Acute Oral Toxicity: LD50 rat: >= 5.000 mg/kg (OECD 423) – Studies based on a comparable product
Acute Dermal Toxicity: LD50 rat, male/female: >2.000 mg/kg – Studies based on a comparable product
Acute Inhalation Toxicity: Based on expert judgement, this material is toxic if inhaled
Skin Irritation: rabbit, no skin irritation (OECD 404)
Eye Irritation: rabbit, no eye irritation (OECD 405)
Skin sensitization: mouse, may cause sensitization by skin contact (OECD 429) – based on comparable product
Respiratory sensitization: no classification
Reproductive toxicity/fertility: available data shows no indications for reproductive toxicity
Reproductive toxicity/teratogenicity: animal experiments on structurally similar compounds showed no indication of specific reproductive toxicity
Genotoxicity in vitro: Ames test, with/without metabolic activation, no indication of mutagenic effects (OECD 471)
STOT, single exposure: inhalative, result – may cause respiratory irritation

SECTION 12: ECOLOGICAL INFORMATION

Do not allow to escape into waterways, wastewater or soil.
No data for the product itself. The following is component data:
Hexamethylene-1,6-diisocyanate homopolymer (CAS# 28182-81-2)
Acute Fish Toxicity: LC50 > 100 mg/l, danio rerio (zebra fish), 96h, (Directive 67/548/EEC, Annex V, C.1.), sample preparation on account of the reactivity of the substance with water: Ultra turrax: 60 sec. 8000 rpm; 24h magnetic stirrer; filtration.
Acute toxicity for daphnia: EC50 > 100 mg/l, daphnia magna (water flea), 48h, (Directive 67/548/EEC, Annex V, C.2.), sample preparation on account of the reactivity of the substance with water: Ultra turrax: 60 sec. 8000 rpm; 24h magnetic stirrer; filtration
Acute toxicity for algae: ErC50 199 mg/l, test type: growth inhibition, scenedesmus subspicatus, 72h, (Directive 67/548/EEC, Annex V, C.3.), sample preparation on account of the reactivity of the substance with water: Ultra turrax: 60 sec. 8000 rpm; 24h magnetic stirrer; filtration.
Acute bacterial toxicity: EC50 > 10 mg/l, test: respiration inhibition, activated sludge, 3h, (EG-RL 88/302/EEC)
Ecotoxicology Assessment: Acute aquatic toxicity – based on available data, the classification criteria are not met
Chronic aquatic toxicity – based on available data, the classification criteria are not met
Impact on sewage treatment – because of the low bacterial toxicity, there is no risk of an adverse effect on the performance of biological waste water treatment plants.
Biodegradability: test type – aerobic, 2%, 28d, not readily biodegradable (Directive 67/548/EEC Annex V, C.4.E.)
Test type – aerobic, 0%, 28d, not inherently degradable (OECD 302 C)
Stability in water: test type – hydrolysis, half-life: 7.7 h @ 23C (OECD 111), the substance hydrolyzes rapidly in water
Photodegradation: phototransformation in air, 25C, OH-radicals, half-life indirect photolysis: 11.7 h (SRC-AOP, calculation), after evaporation or exposure to the air, the product will be rapidly degraded by photochemical processes.
Volatility: Bond-method, calculated value = < 0.000001 Pa*m3/mol at 25C, the substance has to be scored as non-volatile from water
Bioaccumulation: BCF: 706.2, calculated, the substance hydrolyzes rapidly in water; an accumulation in aquatic organisms is not expected

Hydrophilic aliphatic polyisocyanate based on HDI (CAS#666723-27-9)
Acute Fish Toxicity: LC50 35.2 mg/l, danio rerio (zebra fish), 96h, (OECD 203) – studies based on a comparable product
Acute toxicity for daphnia: EC50 > 100 mg/l, daphnia magna (water flea), 48h, (OECD 202) – studies based on a comparable product
Acute toxicity for algae: ErC50 72 mg/l, desmodesmus subspicatus (green algae), 72h, (OECD 201) – studies based on a similar product
Acute bacterial toxicity: EC50 > 10 mg/l, activated sludge, (OECD 209) – studies based on a comparable product
Biodegradability: 0%, 28d, not readily degradable (OECD 301 F) – studies based on a comparable product
Other Adverse effects
Isocyanate reacts with water at the interface forming CO2 and a solid insoluble product with high melting point (polyuria). This reaction is accelerated by surfactants or by water-soluble solvents. Previous experience shows that polyuria is inert and non-degradable.

SECTION 13: WASTE DISPOSAL

WASTE DISPOSAL METHOD:
DISPOSE OF MATERIAL AS A HAZARDOUS WASTE ACCORDING TO FEDERAL, STATE, AND LOCAL REGULATIONS.

SECTION 14: Transport Information

DOT: Not Regulated

IMO/IMDG: Not Regulated

SECTION 15: REGULATORY INFORMATION

OSHA Hazcom standard Rating: Hazardous
All ingredients are on the TSCA list
Massachusetts, New Jersey or Pennsylvania Right to know substance list:

60-100%	Homopolymer of hexamethylene diisocyanate	CAS# 28182-81-2
15-25%	hydrophilic aliphatic polyisocyanate based on hexamethylene diisocyanate	CAS# 666723-27-9
<0.25%	hexamethylene-diisocyanate (*hazardous substance list)	CAS# 822-06-0

SECTION 16: OTHER INFORMATION

GHS Classification of the individual ingredients:
Hexamethylene-1,6-diisocyanate homopolymer (CAS# 28182-81-2):
(H317 – Sensitization, skin Category 1) – May cause allergic skin reaction
(H332 - Acute toxicity, inhalation Category 4) – Harmful if inhaled
(H335 - Specific target organ toxicity; single exposure; respiratory tract irritation Category 3) – May cause respiratory irritation
Hydrophilic aliphatic polyisocyanate based on HDI (CAS# 666723-27-9):
(H331 – Acute toxicity, inhalation Category 3) – Toxic if inhaled
(H317 – Sensitization, skin Category 1) – May cause allergic skin reaction
(H335 - Specific target organ toxicity; single exposure; respiratory tract irritation Category 3) – May cause respiratory irritation
(H412 – Hazardous to the aquatic environment, long term hazard Category 3) – Harmful to aquatic life with long lasting effects
HEXAMETHYLENE DIISOCYANTE (HDI) (CAS# 822-06-0):
(H330 – Acute toxicity, inhalation Category 1) – Fatal if inhaled
(H302 – Acute toxicity, oral Category 4) – Harmful if swallowed
(H315 – Skin Corrosion/Irritation Category 2) – Causes skin irritation
(H319 – Serious eye damage/eye irritation Category 2A) – Causes serious eye irritation
(H334 – Sensitization, respiratory Category 1) – May cause allergy or asthma symptoms or breathing difficulties if ihhaled
(H317 – Sensitization, skin Category 1) – May cause allergic skin reaction
(H335 - Specific target organ toxicity; single exposure; respiratory tract irritation Category 3) – May cause respiratory irritation
Specific threshold concentration (GHS)
>= 0.50% H334 – (Sensitization, respiratory Category 1) – May cause allergy or asthma symptoms or breathing difficulties if inhaled
>= 0.50% H317 – (Sensitization, skin Category 1) – May cause an allergic skin reaction

DISCLAIMER: THE INFORMATION HERE IN IS BASED ON THE DATA AVAILABLE AND IS BELIEVED TO BE ACCURATE, HOWEVER, THE MANUFACTURER MAKES NO WARRANTY EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS OBTAINED FROM THE USE THEREOF. ACCORDINGLY, WE ASSUME NO RESPONSIBILITY FOR INJURY FROM THE USE OF THIS PRODUCT.

N/A = Not Available
See Section 1 for date of preparation