

**SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** NP349 PART A  
**PRODUCT CODES:** 349 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:** Harry Jackson

**DATE REVISED:** 11/30/15

**Chemical Name or Class:** Aliphatic diamine mixture

**SECTION 2: HAZARDS IDENTIFICATION****Hazard Overview**

**GHS Classification:** Skin sensitizer category 1B, Chronic hazards to aquatic environment category 3

**GHS Label Elements and Precautionary Statements:**

**Label Elements:** Exclamation Mark

**Hazard Statements:**

Warning: May cause an allergic skin reaction  
Harmful to aquatic environment with long lasting effects.

**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.

**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.  
P362 + P364 take off contaminated clothing and wash it before reuse.

**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:** 0      **PERSONAL PROTECTIVE EQUIPMENT:** G

**POTENTIAL HEALTH EFFECTS****EYES:**

HIGH VAPOR CONCENTRATIONS CAN CAUSE IRRITATION TO THE EYES, NOSE OR THROAT.

**SKIN:**

CAN CAUSE SKIN IRRITATION

**INGESTION:**

LIQUID CAN CAUSE DAMAGE TO MUCOUS MEMBRANES IF SWALLOWED.

**INHALATION:**

HIGH CONCENTRATIONS OF VAPOR CAN CAUSE IRRITATION TO THE RESPIRATORY TRACT, NAUSEA AND DIZZINESS.

**HEALTH HAZARDS (ACUTE AND CHRONIC):**

PROLONGED OR REPEATED EXPOSURE MAY CAUSE ASTHMA AND SKIN SENSITIZATION OR OTHER ALLERGIC RESPONSES.

**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**

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<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>OSHA STEL</u>	<u>WEIGHT %</u>
CYCLOALIPHATIC DIAMINE	136210-30-5	NE	NE	NE	30-60
CYCLOALIPHATIC DIAMINE	136210-32-7	NE	NE	NE	30-60
ALIPHATIC CARBOXYLIC ESTER	623-91-6	N/E	NE	NE	1-5

\*\*\*NO TOXIC CHEMICAL(S) SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III AND OF 40 CFR 372 ARE PRESENT.

**Note:** Ingredients listed without percentages, the percentages are considered a trade secret.

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## SECTION 4: FIRST AID MEASURES

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### EYES:

IMMEDIATELY FLUSH WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE LIFTING UPPER AND LOWER LIDS, GET IMMEDIATE MEDICAL ASSISTANCE.

### SKIN:

FLUSH SKIN WITH WATER FOR AT LEAST 15 MINUTES AND REMOVE ALL CONTAMINATED CLOTHING IMMEDIATELY. GET MEDICAL ATTENTION IF REDDENING OR SWELLING OCCURS.

### INGESTION:

DO NOT INDUCE VOMITING. DILUTE BY GIVING WATER OR MILK TO DRINK IF VICTIM IS CONSCIOUS. GET MEDICAL ATTENTION IMMEDIATELY.

### INHALATION:

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

### NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:

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## SECTION 5: FIRE-FIGHTING MEASURES

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

**FLASH POINT:** 200+F

### METHOD USED:

SETA FLASH

### EXTINGUISHING MEDIA:

FOAM, ALCOHOL FOAM, CO2, 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 FIRE EXPOSED CONTAINERS WITH WATER.

### UNUSUAL FIRE AND EXPLOSION HAZARDS:

NONE KNOWN

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## SECTION 6: RELEASE MEASURES

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**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 REMAINDER WITH CLAY OR OTHER ABSORBANT AND PLACE IN DISPOSAL CONTAINERS.

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## SECTION 7: HANDLING AND STORAGE

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### 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 CONDITIONS OF GOOD INDUSTRIAL HYGIENE AND SAFE WORKING PRACTICES.

### OTHER PRECAUTIONS:

MIXED MATERIALS CONTAIN THE HAZARDS OF ALL THE COMPONENTS, THEREFORE, READ THE MSDS OF ALL COMPONENTS TO BECOME FAMILIAR WITH ALL HAZARDS PRIOR TO USING THIS PRODUCT.

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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### RESPIRATORY PROTECTION:

NIOSH APPROVED RESPIRATOR PROTECTION REQUIRED IN THE ABSENCE OF PROPER ENVIRONMENTAL CONTROLS. FOR EMERGENCIES A SELF-CONTAINED BREATHING APPARATUS OR A FULL FACE RESPIRATOR IS RECOMMENDED.

### VENTILATION:

AVOID BREATHING VAPORS. VENTILATION 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:

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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.

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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**APPEARANCE AND ODOR:** AMBER CLEAR LIQUID WITH SLIGHT ODOR

**BOILING POINT OR RANGE:** N/A

**VAPOR DENSITY (AIR = 1):** Not available

**SPECIFIC GRAVITY (H<sub>2</sub>O = 1):** 1.1

**EVAPORATION RATE:** N/A

**SOLUBILITY IN WATER:** NEGLIGIBLE

**Odor Threshold:** 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

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## SECTION 10: STABILITY AND REACTIVITY

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### STABILITY:

STABLE

### CONDITIONS TO AVOID (STABILITY):

AVOID CONTACT WITH OPEN FLAMES AND ALL SOURCES OF IGNITIONS AND SPARKS.

### INCOMPATIBILITY (MATERIAL TO AVOID):

AVOID CONTACT WITH STRONG OXIDIZING AGENTS OR MATERIALS

### HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:

CO, CO<sub>2</sub>, NOX, AMINES AND OTHER ALIPHATIC FRAGMENTS WHICH HAVE NOT BEEN DETERMINED.

### HAZARDOUS POLYMERIZATION:

WILL NOT OCCUR

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## SECTION 11: TOXICOLOGICAL INFORMATION

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No data for the product itself.

### Component data:

**Components CYCLOALIPHATIC DIAMINE CAS# 136210-30-5:** (toxicity note: Toxicity data based on a similar product) Acute Oral Toxicity >2000 mg/kg (rat). Acute Inhalation Toxicity LC50 > 4224 mg/m<sup>3</sup>, 4 hr, (rat). Acute dermal Toxicity LD50 >2000 mg/kg (rat). Skin Irritation – irritating to skin (rabbit). Eye Irritation – slight irritant (rabbit). Sensitization Dermal: sensitizer (guinea pig, Magnusson/Kligman (maximization test)). Repeated Dose toxicity: Subacute oral toxicity: NOAEL: 1000 mg/kg (rat). Mutagenicity: Genetic Toxicity in Vitro: Salmonella/microsome test (Ames test) No indication of Mutagenic effects. Chromosome aberration test in vitro: negative. Genetic Toxicity in Vivo: Micronucleus test: negative (mouse) – negative.

**Component ALIPHATIC CARBOXYLIC ESTER CAS# 623-91-6:** Acute Oral Toxicity LD50 >1,780 mg/kg (rat)

**Components CYCLOALIPHATIC DIAMINE CAS# 136210-32-7:** Acute Oral Toxicity >2000 mg/kg (rat). Acute Inhalation Toxicity LC50 > 4224 mg/m<sup>3</sup>, 4 hr, (rat). Acute dermal Toxicity LD50 >2000 mg/kg (rat). Skin Irritation – slightly irritating to skin (rabbit). Sensitization Dermal: sensitizer (guinea pig, Magnusson/Kligman (maximization test)). Repeated Dose toxicity: Subacute oral toxicity: NOAEL: 1000 mg/kg (rat). Genotoxicity in Vitro: Salmonella/microsome test (Ames test) No indication of Mutagenic effects. Chromosome aberration test in vitro: negative. Genetic Toxicity in Vivo: Micronucleus test: negative (mouse)..

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## SECTION 12: ECOLOGICAL INFORMATION

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No data for the product itself.

### Component data:

**Component CYCLOALIPHATIC DIAMINE CAS# 136210-30-5 :** (toxicity note: Toxicity data based on a similar product) 13% Exposure time: 28 days, i.e., not readily degradable (based on a comparable product). Acute and Prolonged Toxicity to fish: LC50: 66 mg/l (Danio rerio (zebra fish), 96 hr). Acute Toxicity to Aquatic Vertabras EC50: 88.6 mg/l (water flea), 48 hr). Toxicity to Aquatic Plants IC50: 113 mg/l (scenedesmus subspicatus, 72 hr). Toxicity to Microorganisms EC50: 3110 mg/l (activated sludge, 3 hr). .

**Component ALIPHATIC CARBOXYLIC ESTER CAS# 623-91-6:** Biodegradation: 92-95%, i.e., readily biodegradable. Acute and Prolonged Toxicity to Fish LC50: 38 mg/l (fathead minnow, 96 hr).

**Component CYCLOALIPHATIC DIAMINE CAS# 136210-32-7 :** Acute and Prolonged Toxicity to fish: LC50: 66 mg/l (Danio rerio (zebra fish), 96 hr). Acute Toxicity to Aquatic Vertabras EC50: 88.6 mg/l (water flea), 48 hr). Toxicity to Aquatic Plants IC50: 113 mg/l (scenedesmus subspicatus, 72 hr). Toxicity to Microorganisms EC50: 3110 mg/l (activated sludge, 3 hr). Acute Toxicity to Algae IC50: 113 mg/l (scenedesmus subspicatus, 72 hr). Toxicity to Soli Dwelling Organisms NOEC (Mortality) . 1000 mg/kg (earthworms, 14 days). Toxicity to terrestrial plants NOEC (seeding emergence) > 100 mg/kg (Avena sativa, cats)Ecotoxicology Assessment: Harmful to aquaticorganisms. May

cause long term adverse effects in the aquatic environment. Because of the low bacterial toxicity, there is no risk of an adverse effect on the performance of biological waste water treatment plants. Biodegradability: 13%, 28 d, i.e., not readily biodegradable. Bioconcentration factor (BCF): value calculated 8.228 – The substance hydrolyzes rapidly in water, an accumulation in aquatic organisms is not to be expected.

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## SECTION 13: WASTE DISPOSAL

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### WASTE DISPOSAL METHOD:

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

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## SECTION 14: Transport Information

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**DOT:** Not Regulated

**IMO/MDG:** Not Regulated

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## SECTION 15: REGULATORY INFORMATION

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No data for the product itself.

### Component data:

**Component CYCLOALIPHATIC DIAMINE CAS# 136210-30-5 :** OSHA Hazard rating : Hazardous. Component is listed on the TSCA and Canada DSL lists. Component is listed on the Pennsylvania, Massachusetts and New Jersey Right to know lists.

**Component ALIPHATIC CARBOXYLIC ESTER CAS# 623-91-6:** OSHA Hazard rating : Hazardous. Component is listed on the TSCA and Canada DSL lists. Component is listed on the Pennsylvania, Massachusetts and New Jersey Right to know lists.

**Component CYCLOALIPHATIC DIAMINE CAS# 136210-32-7 :** OSHA Hazard rating : Hazardous. Component is listed on the TSCA and Canada DSL lists. Component is listed on the Pennsylvania, Massachusetts and New Jersey Right to know lists.

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## SECTION 16: OTHER INFORMATION

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**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

**SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** NP349 PART B  
**PRODUCT CODES:** 349 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:** Harry Jackson

**DATE REVISED:** 11/30/15

**Chemical Name or Class:** HDI isocyanate

**SECTION 2: HAZARDS IDENTIFICATION****Hazard Overview**

**GHS Classification:** Acute toxicity inhalation category 4, Skin Sensitization category 1, Respiratory Sensitization category 1, Specific target organ toxicity – single exposure category 3, Specific Target organ toxicity – repeated exposure category 2, Chronic aquatic toxicity category 4

**GHS Label Elements and Precautionary Statements:**

Label Elements: Exclamation Mark, Health Hazard

**Hazard Statements:**

Warning: Harmful if inhaled

Warning: May cause an allergic skin reaction

Danger: May cause allergy or Asthma symptoms or breathing difficulties if inhaled.

Warning: May cause respiratory irritation.

Warning: May cause damage to organs (lungs) through prolonged or repeated exposure.

May cause long lasting harmful effects to aquatic life

**Precautionary statements:**

P102 Keep out of reach of children.

P103 Read label before use

P271 Use only outdoors or in a well-ventilated area

P272 Contaminated work clothing should not be allowed out of the workplace.

P280 Wear protective gloves and clothing to prevent skin contact.

P284 Wear respiratory protection

P260 Do not breathe dust/fume/gas/mist/vapours/spray

**Response**

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.

P302 + P352 IF ON SKIN: wash with plenty of soap and water.

P333 + P313 IF SKIN irritation or rash occurs: Get medical advice/attention.

P362 + P364 take off contaminated clothing and wash it before reuse.

P342 + P311 IF experiencing respiratory symptoms: call a POISON CENTER or doctor/physician.

P312 Call a POISON CENTER or doctor/physician if you feel unwell.

P314 Get medical advice/attention 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

**HMS HAZARD CLASSIFICATION**

**HEALTH:** 3

**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 CONJUNCTIVITIS.

**SKIN:**

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MAY CAUSE IRRITATION, DEFATTING AND DERMATTITIS.

## 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.

## 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.

Chronic Inhalation: as a result of previous repeated overexposures or a single large dose of isocyanates, certain individuals will develop isocyanate sensitization (chemical asthma), which will cause them to react to a later exposure to isocyanate at levels well below the TLV or MGL. These symptoms, which include chest tightness, wheezing, cough, shortness of breath or asthma attack, could be immediate or delayed up to several hours after exposure. Similar to many nonspecific 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 several years. Chronic overexposure to isocyanates has been reported to cause lung damage, including decrease in lung function, which may be permanent. Sensitization may either be temporary or permanent.

Acute skin Contact: Isocyanates react with the 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.

Chronic Skin contact: Prolonged contact with the isocyanate can cause reddening, swelling, rash, scaling, or blistering. In those who have developed a skin sensitization, these symptoms can develop as a result of contact with very small amounts of liquid material or even as a result of vapor-only exposure.

## 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.

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## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>OSHA STEL</u>	<u>WEIGHT %</u>
HOMOPOLYMER OF HDI	28182-81-2	1mg/m3	NONE	NONE	60-100
HEXAMETHYLENE DIISOCYANATE (HDI)	822-06-0	NONE	.005 PPM	NONE	<0.5

\*\*\*No toxic chemicals subject to the reporting requirements of section 313 of Title III and of 40 CFR 372 are present.

**Note:** Ingredients listed without percentages, the percentages are considered a trade secret.

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## SECTION 4: FIRST AID MEASURES

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### EYES:

IMMEDIATELY FLUSH 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 KEEP PERSON WARM AND CONSULT A PHYSICIAN IMMEDIATELY. GIVE 1-2 CUPS OF MILK OR WATER TO DRINK.

### 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.

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## SECTION 5: FIRE-FIGHTING MEASURES

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

**FLASH POINT:** >200F

**METHOD USED:**

SETA FLASH

**EXTINGUISHING MEDIA:**

FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL

**SPECIAL FIRE FIGHTING PROCEDURES:**

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ENTER CONFINED AREA WITH FULL BUNKER GEAR INCLUDING A POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS. DURING A FIRE, HDI VAPORS AND OTHER HIGHLY TOXIC VAPORS MAY BE GENERATED. WATER OR EXTREME HEAT MAY CAUSE CONTAINERS TO EXPLODE.

## UNUSUAL FIRE AND EXPLOSION HAZARDS:

WATER CONTAMINATION MAY CAUSE THE GENERATION OF CO<sub>2</sub> 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.

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## SECTION 6: RELEASE MEASURES

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

WEAR RESPIRATOR AND PROTECTIVE CLOTHING. REMOVE ALL SOURCES OF IGNITIONS. REMOVE EXCESS WITH SPARK PROOF EQUIPMENT, AND THE REMAINDER WITH AN ABSORBENT SUCH AS CLAY AND PLACE IN DISPOSAL CONTAINERS. CONTAINED AIR RESPIRATOR MAY BE NECESSARY.

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## SECTION 7: HANDLING AND STORAGE

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### 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 MSDS'S OF ALL THE COMPONENTS PRIOR TO USING MATERIAL. PROPERLY LABEL ALL CONTAINERS. KEEP MATERIAL AWAY FROM ALL SOURCES OF IGNITION.

### 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.

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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### RESPIRATORY PROTECTION:

USE A NIOSH APPROVED RESPIRATOR AS REQUIRED TO PREVENT OVER-EXPOSURE TO VAPOR IN ACCORDANCE WITH 29 CFR 1910.134. ENGINEERING OR ADMINISTRATIVE MEASURES SHOULD BE TAKEN TO REDUCE THE RISK & EXPOSURE. USE A POSITIVE PRESSURE SUPPLIED AIR RESPIRATOR WHEN EXCEEDING TLV'S OR IF HDI MONOMER CONCENTRATIONS EXCEED ACCEPTABLE LIMITS OR WHEN SPRAYING MATERIAL.

### 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 (3<sup>RD</sup> EDITION) CHAPTER 17 AND VOLUME III (1<sup>ST</sup> 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 OCCPATONAL EXPOSURE LIMIT VALUES

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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APPEARANCE AND ODOR: PALE YELLOW LIQUID WITH NEGLIGIBLE ODOR

BOILING POINT OR RANGE: N/A

VAPOR DENSITY (AIR = 1): Not available

SPECIFIC GRAVITY (H<sub>2</sub>O = 1): 1.1

EVAPORATION RATE: N/A

SOLUBILITY IN WATER: NEGLIGIBLE

Odor Threshold: N/A

pH: N/A

Melting point/freezing point: N/A

Vapor Pressure: N/A



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Auto Ignition Temperature: N/A  
Partition Coefficient: n-octanol/water: N/A  
Decomposition Temperature: N/A

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## SECTION 10: STABILITY AND REACTIVITY

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### STABILITY:

STABLE

### 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.

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## SECTION 11: TOXICOLOGICAL INFORMATION

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**COMPONENT Homopolymer of HDI:** Acute Oral Toxicity LD50 >5000 mg/kg (rat). Acute Inhalation Toxicity LC50 390-453 mg/m<sup>3</sup>, aerosol, 4 hrs (rat). Acute Dermal Toxicity LD50 >5000 mg/kg (rabbit). Eye and skin irritation: Slightly irritating (rabbit, Draize). Sensitization: dermal: Sensitizer (guinea pig, Maximization test (GPMT); Dermal: non-sensitizer (guinea pig, Buehler), Inhalation: non-sensitizer (guinea pig). Repeated Dose Toxicity: 3 wks, inhalation: NOAEL: 3.7-4.3 mg/m<sup>3</sup> (rat), 90 ds, inhalation: NOAEL: 3.3 – 3.4 mg/m<sup>3</sup> (rat), irritation to lungs and nasal cavity. Mutagenicity: Genetic Toxicity in Vitro- Ames: negative (salmonella typhimurium. Metabolic Activation, with/without).

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## SECTION 12: ECOLOGICAL INFORMATION

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**COMPONENT Homopolymer of HDI:** Biodegradation: 0%, Exposure time: 28 days, not readily biodegradable. Acute and Prolonged Toxicity to fish LC0 > 100 mg/l (zebra fish, 96 h). Acute toxicity to aquatic invertebrates: EC0 > 100 mg/l (water flea, 48 h). Toxicity to aquatic plants EC50 > 1000 mg/l (green algae, 72 h). Toxicity to Microorganisms: EC50 > 1000 mg/l (activated sludge microorganisms, 3 h).

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## SECTION 13: WASTE DISPOSAL

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### WASTE DISPOSAL METHOD:

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

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## SECTION 14: Transport Information

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**DOT:** Not Regulated

**IMO/IMDG:** Not Regulated

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## SECTION 15: REGULATORY INFORMATION

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**COMPONENT Homopolymer of HDI:** OSHA hazard rating – Hazardous. Listed on the TSCA and Canada DSL lists. Component is on the Massachusetts, New Jersey, and Pennsylvania Right to Know Lists.

**COMPONENT Hexamethylene Diisocyanate:** OSHA hazard rating – Hazardous. Listed on the TSCA and Canada DSL lists. Component is on the Massachusetts, New Jersey, and Pennsylvania Right to Know Lists.

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## SECTION 16: OTHER INFORMATION

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**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