

SAFETY DATA SHEET

PRODUCT CODE: 449SF

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: NP449SF PART A
PRODUCT CODES: 449SF 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: 5/22/17

Chemical Name or Class: Aliphatic amine/solvent mixture

SECTION 2: HAZARDS IDENTIFICATION

Hazard Overview

GHS Classification: Flammable Liquids category 3, Skin sensitizer category 1B, Acute toxicity (inhalation) category 4, skin irritation category 2, Eye irritation category 2A, carcinogenicity category 2, Specific target organ toxicity – single exposure category 3, Specific target organ toxicity – repeated exposure category 2, Chronic hazards to aquatic environment category 3

GHS Label Elements and Precautionary Statements:

Label Elements: Flame, Health hazard, Exclamation Mark



Hazard Statements:

Warning: Flammable liquid and vapor.
Warning: May Cause an allergic skin reaction.
Warning: Harmful if inhaled.
Warning: Causes skin irritation
Warning: Causes serious eye irritation.
Warning: Suspected of causing cancer.
Warning: May cause Respiratory irritation or may cause drowsiness or dizziness.
Warning: May cause damage to organs (liver, kidney, nervous system, respiratory system, liver, central nervous system) through prolonged or repeated exposure
Harmful to aquatic life with long lasting effects..

Precautionary statements:

P102 Keep out of reach of children.
P103 Read label before use
P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/.../equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P272 Contaminated work clothing should not be allowed out of the workplace.
P271 Use only outdoors or in a well-ventilated area
P264 Wash hands thoroughly after handling.
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
Response
P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower
P370 + P378 In case of fire: Use FOAM, ALCOHOL FOAM, CO2, WATER FOG for extinction.
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.
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.
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P304 + P340 IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.

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

P314 Get medical advice/attention if you feel unwell

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool

P233 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: 2 REACTIVITY: 0 PERSONAL PROTECTIVE EQUIPMENT: G

POTENTIAL HEALTH EFFECTS

EYES:

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

SKIN:

CAN CAUSE SEVERE IRRITATION TO THE SKIN.

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. CAN CAUSE SENSITIZATION BY EXPOSURE THROUGH CONTACT OR HIGH CONCENTRATION OF VAPOR. OVER EXPOSURE TO THIS MATERIAL CAN CAUSE CARDIAC ABNORMALITIES, ANEMIA, LIVER ABNORMALITIES, KIDNEY DAMAGE OR EVEN EYE DAMAGE. CAN CAUSE ASTHMA OR OTHER RESPIRATORY DISORDERS, BRONCHITIS, EMPHYSEMA, HYPERACTIVITY, AND EXCEMA.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

RESPIRATORY CONDITIONS OR OTHER ALLERGIC AILMENTS

CARCINOGENICITY

OSHA: NO NTP: NO IARC: yes

ADDITIONAL CARCINOGENICITY INFORMATION:

Product may contain ethyl benzene as a component of xylene (IARC 2B)

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>OSHA STEL</u>	<u>WEIGHT %</u>
CYCLOALIPHATIC DIAMINE	136210-32-7	NE	NE	NE	30-60
ALIPHATIC CARBOXYLIC ESTER	623-91-6	NE	NE	NE	1-5
PROPRIETARY MODIFIED AMINE	Trade Secret	NE	NE	NE	30-60
2-(3-heptyl)-N-butyl-1,3-oxazolidine	165101-57-5	none	none	none	1-5
Siloxanes and silicones, di-me reactions products with silica (non-hazardous)	67762-90-7	none	none	none	<0.1
siloxanes and silicones, di-methyl (non-hazardous)	63148-62-9	none	none	none	<0.1
Isophorondiamine-isobutyraldimine	54914-37-3	NONE	NONE	NONE	3-7%
*Xylene	1330-20-7	100PPM	100PPM	150PPM	9-11
*ethyl benzene (as a component of xylene)	100-41-4	100ppm	100ppm	125ppm	0.3-2.0
*toluene (as a component of xylene)	108-88-3	200ppm	20ppm	150ppm	0-0.2

***Indicates 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.

SECTION 4: FIRST AID MEASURES

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.

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NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:

SECTION 5: FIRE-FIGHTING MEASURES

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

FLASH POINT: 100-140F

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

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

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 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.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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:

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: CLEAR LIQUID WITH SLIGHT AROMATIC SOLVENT ODOR

BOILING POINT OR RANGE: N/A

VAPOR DENSITY (AIR = 1): Not available

SPECIFIC GRAVITY (H₂O = 1): 1.0 – 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

SECTION 10: STABILITY AND REACTIVITY

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, CO₂, NOX, AMINES AND OTHER ALIPHATIC FRAGMENTS WHICH HAVE NOT BEEN DETERMINED.****HAZARDOUS POLYMERIZATION:****WILL NOT OCCUR**

SECTION 11: TOXICOLOGICAL INFORMATION

No data for the product itself.**Component data:****Components CYCLOALIPHATIC DIAMINE CAS# 136210-32-7:** Acute Oral Toxicity >2000 mg/kg (rat). Acute Inhalation Toxicity LC50 > 4224 mg/m³, 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)..**Component ALIPHATIC CARBOXYLIC ESTER CAS# 623-91-6:** Acute Oral Toxicity LD50 >1,780 mg/kg (rat)**Component PROPRIETARY MODIFIED AMINE CAS# Trade Secret:** No data available**Component Xylene:** Inhalation LC50 26800ppm, Skin LD50 2000 mg/kg, Ingestion LD50 4.3 g/kg. Exposure may effect skin, eye, liver, kidney, nervous system, respiratory system and lungs. High concentrations may lead to nervous system effects. Repeated overexposure has produced toxic effects in developing and young laboratory animals. Aspiration into lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal. Xylene may contain ethyl benzene, and toluene. Ethyl benzene has shown limited evidence of a carcinogenic effect.**COMPONENT Ethyl Benzene:** Acute Oral toxicity LD50: ca. 3500 mg/kg (rat); Acute inhalation LC50: 17.2 mg/l 4h (rat); Acute Dermal Toxicity: 17,800 mg/kg (rabbit); Skin Irritation rabbit Draize exposure time 24h – slightly irritating. Eye Irritation rabbit Draize – severely irritating. Sensitization dermal (human patch test) non-sensitizer. Repeated Dose toxicity 28 days inhalation NOAEL: 3.4 mg/l (rabbit). Mutagenicity Genetic Toxicity in Vitro: Ames: Negative (salmonella typhimurium, metabolic activation with/without). Carcinogenicity: Ethyl benzene was tested by inhalation exposure in mice and rats. In mice, there was an increased incidence of lung adenomas in males and liver adenomas in females. In male rats, there was an increased incidence of renal tubule adenomas and carcinomas. Two Studies of workers potentially exposed to ethyl benzene in a production plant and a styrene polymerization plant, showed no excess cancer incidence and no excess cancer mortality during a 15 year follow-up. Toxicity to Reproduction/Fertility: Inhalation (monkey, male) Reproductive effects have been observed in animal studies, In a generation study, inhalation (rat/female) NOAEL (parental): 100ppm NOAEL (F2): 100ppm. Developmental Toxicity/Teratogenicity rat, female, inhalation, gestation, daily, NOAEL (teratogenicity): 100ppm (maternal): 100ppm. Teratogenic effects seen only with maternal toxicity., Fetotoxicity seen only with maternal toxicity. Rabbit, female, inhalation, gestation, daily, NOAEL (teratogenicity) < 1000 mg/m³, NOAEL (maternal) < 1000 mg/m³.**Component Isophorondiamine-isobutyraldimine CAS# 54914-37-3:** Acute oral Toxicity LD50 Rat = 4150 mg/kg, Acute Dermal Toxicity LD50 Rat > 5000 mg/kg. Corrosive, subcategory 1C – where responses occur after exposures between 1 hour and 4 hours and observations up to 14 days – Method OECD test guideline 404. Irritating to the eyes of a rabbit – method OECD test guideline 405. Product Sensitization: (Magnussobn-Kligman test) guinea pig: May cause sensitization by skin contact – Method OECD test guideline 406.**Component 2-(3-heptyl)-N-butyl-1,3-oxazolidine CAS# 165101-57-5:** LD50 >2000 mg/kg (rat)

SECTION 12: ECOLOGICAL INFORMATION

No data for the product itself.**Component data:****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 aquatic organisms. 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.**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 PROPRIETARY MODIFIED AMINE CAS# Trade Secret:** No data available**Component Isophorondiamine-isobutyraldimine CAS# 54914-37-3:** Biodegradability: 42% - Method OECD 303A. Not readily biodegradable – 8% - Method EC 79/831. Readily biodegradable – 96% - Method OECD 301E (related to substance). Toxicity to fish: LC50 Brachydanio rerio: 110 mg/l/96 hr and LC50 Leuciscus idus melanotus: 86 mg/l/24 hr. Toxicity to daphnia: EC50 Daphnia magna: 23 mg/l/48 hr. Toxicity to algae: EC50 scenedesmus subspicatus: 84 mg/l/72 hr and EC50 scenedesmus subspicatus: 50 mg/l/72 hr. Bioaccumulation: In view of the relatively low octanol/water coefficients of distribution, no significant accumulation in organisms is to be expected. The soil

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mobility is only minimally affected by adsorption to soil components. The substance will mainly occur in bodies of water due to its environmental distribution characteristics. The effects of light decompose the substance rapidly in the atmosphere.

Component 2-(3-heptyl)-N-butyl-1,3-oxazolidine CAS# 165101-57-5: Significant Biodegradation; approximately 66% over 28 days. Fish LC50, 96 hr = 20 mg/l. Daphnia EC50, 48 hrs = 3.26mg/l. Algae growth inhibition EOC50 – 5.6 mg/l

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: UN1993, FLAMMABLE LIQUID N.O.S. (CONTAINS Xylene), 3, PG III

IMO/IMDG: UN1993, FLAMMABLE LIQUID N.O.S. (CONTAINS Xylene), 3, PG III

SECTION 15: REGULATORY INFORMATION

No data for the product itself.

Component data:

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.

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 PROPRIETARY MODIFIED AMINE CAS# Trade Secret: All components of this product are listed on the TSCA inventory or are exempt from TSCA inventory requirements. WHIMIS Hazard Class D2B Toxic

Component 2-(3-heptyl)-N-butyl-1,3-oxazolidine CAS# 165101-57-5: Component is on the TSCA list. DSL/NDSL (Canadian Domestic Substance List / Non-Domestic Substance List) Registered. EINEC (European Inventory of Existing Chemical Substances) Level VII B.

Component Siloxanes and silicones, di-me reactions products with silica: Included on TSCA, EINECS, MITI, ACOIN, and Canadian DSL inventory or lists.

Component siloxanes and silicones, di-methyl: Included on TSCA, EINECS, MITI, ACOIN, and Canadian DSL inventory or lists.

Component Xylene: Xylene contains EPCRA section 313 chemicals subject to the reporting requirements of the emergency planning and community right to know act of 1968. (Maximum wt % for components of xylene are: M-Xylene CAS# 108-38-3 is 46%, P-Xylene CAS# 106-42-3 is 20%, Ethyl Benzene CAS# 100-41-4 is 19%, O-Xylene CAS# 95-47-6 is 16%.. Xylene and its components are on the California Proposition 65 list for developmental toxicity, Reproductive toxicity and carcinogen list. Ingredients are on the TSCA list, DSL Canada, AICS, China, EINECS, ENCS, Korea, New Zealand, Phillipines inventory lists and on the Massachusetts, New Jersey, Pennsylvania right to know lists Ethyl Benzene a component of xylene has been designated by IARC as a possible carcinogen to humans based on increased tumor incidence in laboratory animals. risk phrases R10 Flammable R20/21 Harmful by inhalation and in contact with skin, R38 irritating to skin, S25 Avoid contact with eyes.

COMPONENT Ethyl Benzene: US EPA CERCLA Hazardous Substances (40 CFR 302): Ethyl Benzene reportable quantity 1000 lbs. US EPA Emergency Planning and Community Right to Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.5) components, Ethyl Benzene. California Prop 65: This product contains chemicals known to the State of California to be carcinogenic: Ethyl Benzene CAS# 100-41-4 @ 1-5%.

Massachusetts, New York, Pennsylvania Right to Know list includes the following components: Ethyl Benzene CAS# 100-41-4.

Massachusetts, New York, Pennsylvania Special hazardous Substance includes the following components: Ethyl Benzene CAS# 100-41-4

Component 2-(3-heptyl)-N-butyl-1,3-oxazolidine CAS# 165101-57-5: Component is on the TSCA list. DSL/NDSL (Canadian Domestic Substance List / Non-Domestic Substance List) Registered. EINEC (European Inventory of Existing Chemical Substances) Level VII B.

SECTION 16: OTHER INFORMATION

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

NE = Not established

See Section 1 for date of preparation

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: NP449SF part B
PRODUCT CODES: 449SF 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: 5/22/17

Chemical Name or Class: HDI isocyanate

SECTION 2: HAZARDS IDENTIFICATION**Hazard Overview**

GHS Classification: Flammable liquids category 3, Acute toxicity (dermal) category 4, Eye irritation category 2B, Carcinogenicity category 2, Specific target organ toxicity – repeated exposure category 2 (auditory system), Specific target organ toxicity single exposure category 3 (respiratory tract irritation), **Respiratory sensitization category 1B, skin sensitizer category 1B, Serious eye irritation category 2A, Skin corrosion/irritation category 3, Acute toxicity inhalation category 4, Acute hazard to aquatic environment category 3, Chronic hazards to aquatic environment category 2**

GHS Label Elements and Precautionary Statements:

Label Elements: Exclamation Mark, Health Hazard, aquatic

**Hazard Statements:**

Warning: Flammable liquid and vapor.
 Warning: May cause damage to organs (liver, kidney, nervous system, respiratory system and lungs) through prolonged or repeated exposure
 Warning: Harmful in contact with skin
 Warning: Causes serious eye irritation
 Warning: Harmful if inhaled
 Warning: Suspected of causing cancer
 Danger: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 Warning: May cause an allergic skin reaction
 Warning: Causes mild skin irritation.
 Harmful to aquatic life
 Toxic to aquatic life with long lasting effects.

Precautionary statements:

P102 Keep out of reach of children.
 P103 Read label before use
 P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
 P233 Keep container tightly closed.
 P240 Ground/bond container and receiving equipment.
 P241 Use explosion-proof electrical/ventilating/lighting/.../equipment.
 P242 Use only non-sparking tools.
 P243 Take precautionary measures against static discharge.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P264 Wash skin thoroughly after handling.
 P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P260 Do not breathe dust/fume/gas/mist/vapours/spray
 P271 Use only outdoors or in a well-ventilated area.
 P284 Wear respiratory protection
 P272 Contaminated work clothing should not be allowed out of the workplace.
 P273 Avoid release to the environment.

Response

P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.
 P378 In case of fire: Use FOAM, ALCOHOL FOAM, CO2, WATER FOG for extinction.

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P403 + P235 Store in a well-ventilated place. Keep cool.
P302 + P352 IF ON SKIN: wash with plenty of soap and water
P312 Call a POISON CENTER or doctor/physician if you feel unwell
P361+P364 Take off immediately all contaminated clothing and wash it before reuse.
P305 + P351 + P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 IF eye irritation persists: Get medical advice/attention
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P314 Get medical advice/attention if you feel unwell.
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.
P342 + P311 IF experiencing respiratory symptoms: call a POISON CENTER or doctor/physician.
P333 + P313 IF SKIN irritation or rash occurs: Get medical advice/attention.
P405 Store locked up.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P391 Collect spillage.

Disposal:

P501 Dispose of contents/container to a waste disposal facility in accordance with local, state, federal or international laws

HMIS HAZARD CLASSIFICATION

HEALTH: 3 FLAMMIBILITY: 2 REACTIVITY: 1 PERSONAL PROTECTIVE EQUIPMENT: G

POTENTIAL HEALTH EFFECTS

EYES:

Can cause irritation, redness, tearing or blurred vision as well as corneal opacity and conjunctivitis.

SKIN:

May cause irritation, defatting, and dermatitis.

SKIN ABSORPTION:

Can cause reddening, swelling, rash, scaling or blistering. Overexposure may cause sensitization resulting in reaction to contact of small amounts.

INGESTION:

Can cause gastrointestinal irritation, nausea, vomiting, diarrhea. Aspiration of material into the lungs can cause chemical pneumonitis which can be fatal. Can cause corrosive action to mucous membranes and digestive tracts.

INHALATION health risks and symptoms of exposure:

Can cause nausea and respiratory irritation, dizziness, weakness, nausea, headache. Burning sensation to mucous membranes, shortness of breath and flu like symptoms may occur.

HEALTH HAZARDS (ACUTE AND CHRONIC):

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 response.

CARCINOGENICITY

OSHA: NO NTP: NO IARC: YES

ADDITIONAL CARCINOGENICITY INFORMATION:

Product may contain ethyl benzene as a component of xylene (IARC 2B)

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>OSHA STEL</u>	<u>WEIGHT %</u>
Hopolymer of HDI	28182-81-2	1 mg/m3	NONE	NONE	60-100
*Hexamethylene Diisocyanate (HDI)	822-06-0	NONE	.005 PPM	NONE	<0.3%
*Xylene	1330-20-7	100PPM	100PPM	150PPM	8-9
*ethyl benzene (as a component of xylene)	100-41-4	100ppm	100ppm	125ppm	0.5-4.0
*toluene (as a component of xylene)	108-88-3	200ppm	20ppm	150ppm	0-0.4

*Indicates toxic chemical (s) subject to the reporting requirements of section 313 Title III and of 40 CFR 372. All Components are on the TSCA list.

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

SECTION 4: FIRST AID MEASURES

EYES:

Flush eyes with water for at least fifteen minutes and consult a physician.

SKIN:

For extreme exposure use a safety shower immediately. Wash affected area with soap and water and remove contaminated clothing promptly.

INGESTION:

Give 2-3 glasses of water to drink and induce vomiting. Keep person warm and consult a physician immediately.

INHALATION:

Remove victim to fresh air area and administer oxygen if necessary. Obtain medical assistance, asthmatic type symptoms may occur immediately or be delayed for several hours. Treatment is symptomatic.

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABLE LIMITS IN AIR,
(% BY VOLUME)

UPPER: not available
LOWER: not available

FLASH POINT: 100-140F

METHOD USED:

Closed Cup

EXTINGUISHING MEDIA:

Foam, alcohol foam, CO2, dry chemical

SPECIAL FIRE FIGHTING PROCEDURES:

Do not enter confined fire area without full bunker gear including a positive pressure NIOSH approved self-contained breathing apparatus. Remove all sources of ignition.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Sealed drums may rupture and ignite. During a fire, HDI vapors and other toxic gasses may be evolved. Containers may burst if contaminated with water.

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. Remove excess with an absorbent such as clay and place in disposal containers. Contained air respirator may be necessary.

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 MSDS's of all the components prior to using material. Properly label all containers. Keep material away from all sources of ignition and water sources.

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 thereof. 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:

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 and 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 airborne concentrations of HDI below their TLV and MGL maximum. Refer to Patty's Industrial Hygiene and Toxicology- Volume 1 (3rd edition) Chapter 17 and Volume III (1st edition) Chapter 3 for details.

PROTECTIVE GLOVES:

Impervious gloves – neoprene or rubber.

EYE PROTECTION:

Splash goggles or glasses with side shields. Do not wear contact lenses when using this product.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Wear body covering clothing and other coverings as necessary such as an apron and appropriate footwear to avoid contact.

WORK HYGIENIC PRACTICES:

Observe good general hygienic practices.

SEE SECTION THREE FOR OCCPATONAL EXPOSURE LIMIT VALUES.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Pale yellow liquids, odorless
BOILING POINT OR RANGE: not determined
VAPOR DENSITY (AIR = 1): not available
SPECIFIC GRAVITY (H₂O = 1): 1.1
EVAPORATION RATE: not available
SOLUBILITY IN WATER: reacts with water

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

SECTION 10: STABILITY AND REACTIVITY

STABILITY:

stable

CONDITIONS TO AVOID (STABILITY):

Avoid excessive heat or open flames as well as all sources of ignition 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 dioxide carbon monoxide, 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

COMPONENT Homopolymer of HDI: Acute Oral Toxicity LD₅₀ >5000 mg/kg (rat). Acute Inhalation Toxicity LC₅₀ 390-453 mg/m³, 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/m³ (rat), 90 ds, inhalation: NOAEL: 3.3 – 3.4 mg/m³ (rat), irritation to lungs and nasal cavity. Mutagenicity: Genetic Toxicity in Vitro- Ames: negative (salmonella typhimurium. Metabolic Activation, with/without).

COMPONENT Xylene: Inhalation LC₅₀ 26800ppm, Skin LD₅₀ 2000 mg/kg, Ingestion LD₅₀ 4.3 g/kg. Exposure may effect skin, eye, liver, kidney, nervous system, respiratory system and lungs. High concentrations may lead to nervous system effects. Repeated overexposure has produced toxic effects in developing and young laboratory animals. Aspiration into lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal. Xylene may contain ethyl benzene, and toluene. Ethyl benzene has shown limited evidence of a carcinogenic effect.

COMPONENT Ethyl Benzene: Acute Oral toxicity LD₅₀: ca. 3500 mg/kg (rat); Acute inhalation LC₅₀: 17.2 mg/l 4h (rat); Acute Dermal Toxicity: 17,800 mg/kg (rabbit); Skin Irritation rabbit Draize exposure time 24h – slightly irritating. Eye Irritation rabbit Draize – severely irritating. Sensitization dermal (human patch test) non-sensitizer. Repeated Dose toxicity 28 days inhalation NOAEL: 3.4 mg/l (rabbit). Mutagenicity Genetic Toxicity in Vitro: Ames: Negative (salmonella typhimurium, metabolic activation with/without). Carcinogenicity: Ethyl benzene was tested by inhalation exposure in mice and rats. In mice, there was an increased incidence of lung adenomas in males and liver adenomas in females. In male rats, there was an increased incidence of renal tubule adenomas and carcinomas. Two Studies of workers potentially exposed to ethyl benzene in a production plant and a styrene polymerization plant, showed no excess cancer incidence and no excess cancer mortality during a 15 year follow-up. Toxicity to Reproduction/Fertility: Inhalation (monkey, male) Reproductive effects have been observed in animal studies, In a generation study, inhalation (rat/female) NOAEL (parental): 100ppm NOAEL (F2): 100ppm. Developmental Toxicity/Teratogenicity rat, female, inhalation, gestation, daily, NOAEL (teratogenicity): 100ppm (maternal): 100ppm. Teratogenic effects seen only with maternal toxicity., Fetotoxicity seen only with maternal toxicity. Rabbit, female, inhalation, gestation, daily, NOAEL (teratogenicity) < 1000 mg/m³, NOAEL (maternal) < 1000 mg/m³.

SECTION 12: ECOLOGICAL INFORMATION

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).

COMPONENT Xylene: Acute Toxicity: Fish: Toxic 1 < LC/EC₁₀ < 10mg/l, Aquatic Invertebrates: Toxic 1 < LC/EC₁₀ < 10mg/l, Algae: Toxic 1 < LC/EC₁₀ < 10 mg/l. Mobility – floats on water. If it enters the soil it will be highly mobile and may contaminate groundwater. Oxidizes rapidly by photo-chemical reactions in air.

COMPONENT Ethyl Benzene: Biodegradation, Aerobic, 50%, Exposure time 28 days. Biochemical Oxygen demand (BOD) 5 days, 2.8% and 35 days, 1780 mg/g. Bioaccumulation: Cyprinus carpio (Carp), 15 BCF. Acute and Prolonged Toxicity to Fish LC₅₀: 12.1 mg/l (fathead

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minnow, 96 h). Acute Toxicity to Aquatic Invertebrates EC50: 1.8-2.9 mg/l (water flea, 48 h). Toxicity to Aquatic Plants EC50: 4.6 mg/l (green algae, 72 h). Toxicity to microorganisms EC50: 130 mg/l (activated sludge microorganisms, 48 hr).

SECTION 13: WASTE DISPOSAL

WASTE DISPOSAL METHOD:

Dispose of the material in a waste disposal site in accordance with local, state, and federal laws.

SECTION 14: Transport Information

DOT: UN1993, FLAMMABLE LIQUID N.O.S. (CONTAINS Xylene), 3, PG III

IMO/MDG: UN1993, FLAMMABLE LIQUID N.O.S. (CONTAINS XYLENE, HEXAMETHYLENE DIISOCYANATE), 3, PG III, MARINE POLLUTANT

SECTION 15: REGULATORY INFORMATION

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.

COMPONENT Xylene: Xylene contains EPCRA section 313 chemicals subject to the reporting requirements of the emergency planning and community right to know act of 1968. (Maximum wt % for components of xylene are: M-Xylene CAS# 108-38-3 is 46%, P-Xylene CAS# 106-42-3 is 20%, Ethyl Benzene CAS# 100-41-4 is 19%, O-Xylene CAS# 95-47-6 is 16%.. Xylene and its components are on the California Proposition 65 list for developmental toxicity, Reproductive toxicity and carcinogen list. Ingredients are on the TSCA list, DSL Canada, AICS, China, EINECS, ENCS, Korea, New Zealand, Phillipines inventory lists and on the Massachusetts, New Jersey, Pennsylvania right to know lists Ethyl Benzene a component of xylene has been designated by IARC as a possible carcinogen to humans based on increased tumor incidence in laboratory animals. risk phrases R10 Flammable R20/21 Harmful by inhalation and in contact with skin, R38 irritating to skin, S25 Avoid contact with eyes.

COMPONENT Ethyl Benzene: US EPA CERCLA Hazardous Substances (40 CFR 302): Ethyl Benzene reportable quantity 1000 lbs. US EPA Emergency Planning and Community Right to Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.5) components, Ethyl Benzene. California Prop 65: This product contains chemicals known to the State of California to be carcinogenic: Ethyl Benzene CAS# 100-41-4 @ 0.5-4.0%.

Massachusetts, New York, Pennsylvania Right to Know list includes the following components: Ethyl Benzene CAS# 100-41-4.

Massachusetts, New York, Pennsylvania Special hazardous Substance includes the following components: Ethyl Benzene CAS# 100-41-4

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