

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: NP443 PART A
PRODUCT CODES: 443 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: 3/1/18

Chemical Name or Class: MDI Isocyanate mixture

SECTION 2: HAZARDS IDENTIFICATION**Hazard Overview**

GHS Classification: Skin irritant Category 2, Eye Irritant Category 2A, Respiratory Sensitizer category 1, Skin sensitization category 1, Carcinogenicity category 2, Specific Target organ toxicity (single exposure) (respiratory tract irritation) category 3, Specific target organ toxicity (Repeated exposure) (respiratory system) category 2, Aquatic Hazard (long term) category 3.

GHS Label Elements and Precautionary Statements:

Label Elements: Exclamation Mark, Hazard Symbol

**Hazard Statements:**

Warning: Causes skin irritation.
 Warning: Causes serious eye irritation.
 Danger: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 Warning: May cause an allergic skin reaction.
 Warning: Suspected of causing cancer.
 Warning: May cause respiratory irritation.
 Warning: May cause damage to organs through prolonged or repeated exposure (respiratory system).
 Harmful to aquatic life with long lasting effects.

Precautionary statements:

P264 Wash hands thoroughly after handling.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
 P284 Wear respiratory protection.
 P272 Contaminated work clothing should not be allowed out of the workplace.
 P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P271 Use only outdoors or in a well-ventilated area.
 P260 Do not breathe dust/fume/gas/mist/vapours/spray

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.
 P305 + P351 + P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P304 + P340 IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.
 P342 + P311 IF experiencing respiratory symptoms: call a POISON CENTER or doctor/physician.
 P337 + P313 IF eye irritation persists: Get medical advice/attention.
 P333 + P313 IF SKIN irritation or rash occurs: Get medical advice/attention.
 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.
 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.

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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: 1 REACTIVITY: 1 PERSONAL PROTECTIVE EQUIPMENT: G

POTENTIAL HEALTH EFFECTS

EYES:

CAN CAUSE SERIOUS IRRITATION TO THE EYES.

SKIN:

CANN CAUSE 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

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>OSHA STEL</u>	<u>WEIGHT %</u>
Polymeric MDI	9016-87-9	0.02ppm	0.005ppm	N/E	25-50
2,2,4-trimethyl-1,3-pentanediol diisobutyrate	6846-50-0	N/E	N/E	N/E	25-50
4,4'-Diphenylmethane Diisocyanate	101-68-8	N/E	N/E	N/E	25-30

***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 eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention.

SKIN:

Wash with plenty of soap and water. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 20 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

INGESTION:

Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

INHALATION:

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In the event of any complaints or symptoms, avoid further exposure.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:

pain or irritation
watering
redness

Inhalation Adverse symptoms may include the following:

respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma

Skin contact

Adverse symptoms may include the following:

irritation
redness

Ingestion

No known significant effects or critical hazards.

Adverse symptoms may include the following:

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed.

The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

SECTION 5: FIRE-FIGHTING MEASURES

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

FLASH POINT: >390F

METHOD USED:

closed cup

EXTINGUISHING MEDIA:

FOAM, ALCOHOL FOAM, CO₂, WATER FOG

SPECIAL FIRE FIGHTING PROCEDURES:

In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. Closed container may forcibly rupture under extreme heat or when contents are contaminated with water (CO₂ formed). Use cold-water spray to cool fire-exposed containers to minimize the risk of rupture. Large fires can be extinguished with large volumes of water applied from a safe distance, since reaction between water and hot diisocyanate can be vigorous.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Hazardous thermal decomposition products:

Decomposition products may include the following materials:

carbon dioxide
carbon monoxide
nitrogen oxides

Special protective actions for fire-fighters:

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: RELEASE MEASURES

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

Personal precautions, protective equipment and emergency procedures:

For non-emergency Personnel:

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment

For emergency responders: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For nonemergency personnel".

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up Spill: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Protective measures Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene:

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities:

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

OTHER PRECAUTIONS: None Known

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Individual protection measures

Occupational exposure limits

Ingredient name

Isocyanic acid, polymethylenepolyphenylene ester
1-Isopropyl-2,2-dimethyltrimethylene diisobutyrate
4,4'-Methylenediphenyl Diisocyanate

Exposure limits

None.
None.
ACGIH TLV (United States, 3/2016).
TWA: 0.005 ppm 8 hours.
NIOSH REL (United States, 10/2013).
TWA: 0.05 mg/m³ 10 hours.
TWA: 0.005 ppm 10 hours.
CEIL: 0.2 mg/m³ 10 minutes.
CEIL: 0.02 ppm 10 minutes.
OSHA PEL (United States, 6/2016).
CEIL: 0.02 ppm
CEIL: 0.2 mg/m³

Canada

Occupational exposure limits

Ingredient name

Isocyanic acid, polymethylenepolyphenylene ester

Exposure limits

CA Alberta Provincial (Canada, 4/2009).
8 hrs OEL: 0.07 mg/m³ 8 hours.
8 hrs OEL: 0.005 ppm 8 hours.
CA British Columbia Provincial (Canada, 7/2016).
TWA: 0.005 ppm 8 hours.
C: 0.01 ppm
CA Ontario Provincial (Canada, 7/2015).
C: 0.02 ppm
TWA: 0.005 ppm 8 hours.
CA Alberta Provincial (Canada, 4/2009).
8 hrs OEL: 0.005 ppm 8 hours.
8 hrs OEL: 0.05 mg/m³ 8 hours.
CA British Columbia Provincial (Canada, 7/2016). Absorbed through

4,4'-Methylenediphenyl Diisocyanate

skin. Skin sensitizer.
TWA: 0.005 ppm 8 hours.
C: 0.01 ppm
CA Quebec Provincial (Canada, 1/2014). Skin sensitizer.
TWAEV: 0.005 ppm 8 hours.
TWAEV: 0.051 mg/m³ 8 hours.
CA Ontario Provincial (Canada, 7/2015).
TWA: 0.005 ppm 8 hours.
CA Saskatchewan Provincial (Canada, 7/2013).
STEL: 0.015 ppm 15 minutes.
TWA: 0.005 ppm 8 hours.

RESPIRATORY PROTECTION:

Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

VENTILATION:

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

SKIN PROTECTION/PROTECTIVE GLOVE:

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

EYE PROTECTION:

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

WORK HYGIENIC PRACTICES:

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: DARK BROWN LIQUID with SLIGHTLY MUSTY ODOR
BOILING POINT OR RANGE: 406F
VAPOR DENSITY (AIR = 1): Not available
SPECIFIC GRAVITY (H₂O = 1): 1.24 @ 77F
EVAPORATION RATE: N/A
SOLUBILITY IN WATER: N/A

Odor Threshold: N/A

pH: N/A

Melting point/freezing point: N/A

Vapor Pressure: Less than 0.000013 kPa (<0.0001 mm Hg) @ 77F

Auto Ignition Temperature: N/A

Partition Coefficient: n-octanol/water: N/A

Decomposition Temperature: N/A

SECTION 10: STABILITY AND REACTIVITY

STABILITY/REACTIVITY:

No specific test data related to reactivity available for this product or its ingredients The product is stable.

CONDITIONS TO AVOID (STABILITY):

Water or temps above 350° F will cause polymerization avoid water, amines, strong bases, alcohols, copper alloys, aluminum.

INCOMPATIBILITY (MATERIAL TO AVOID):

Reactive or incompatible with the following materials: oxidizing materials.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:

Contact with moisture, other materials that react with isocyanates, or temperatures above 350 °F (177 °C), may cause polymerization. Polymerization will occur when reacted with Part B.

HAZARDOUS POLYMERIZATION:

By high heat and fire: carbon monoxide, oxides of nitrogen, hydrogen cyanide, carbon dioxide, dense black smoke, isocyanate, isocyanic acid, other undetermined compounds

SECTION 11: TOXICOLOGICAL INFORMATION**Acute toxicity****Product/ingredient name**

Isocyanic acid, polymethylenepolyphenylene ester

Result

LD50 Dermal

Species

Rabbit

Dose

>9400 mg/kg

4,4'-Methylenediphenyl Diisocyanate

LD50 Oral

Rat

49 g/kg

LD50 Oral

Rat

9200 mg/kg

Irritation/Corrosion**Product/ingredient name**

Isocyanic acid, polymethylenepolyphenylene ester

Result

Eyes - Mild irritant

Species

Rabbit

Exposure

100 mg

1-Isopropyl-2,2-dimethyltrimethylene diisobutylate

Skin - Mild irritant

Guinea pig

5 g

4,4'-Methylenediphenyl Diisocyanate

Skin - Mild irritant

Human

504 hours 1% Intermittent

Eyes - Moderate irritant

Rabbit

100 mg

Sensitization

There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity**Classification****Product/ingredient name**

Isocyanic acid, polymethylenepolyphenylene ester

OSHA

-

IARC

3

NTP

-

4,4'-Methylenediphenyl Diisocyanate

-

3

-

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)**Product/ingredient name**

Isocyanic acid, polymethylenepolyphenylene ester

Category

Category 3

Route of Exposure

Not Applicable

Target Organs

Respiratory tract irritation

4,4'-Methylenediphenyl Diisocyanate

Category 3

Not Applicable

Respiratory tract irritation

Specific target organ toxicity (repeated exposure)**Product/ingredient name**

Isocyanic acid, polymethylenepolyphenylene ester

Category

Category 2

Route of Exposure

Inhalation

Target Organs

Respiratory tract irritation

4,4'-Methylenediphenyl Diisocyanate

Category 2

Not Determined

Not Determined

Aspiration hazard

There is no data available.

Information on the likely routes of exposure:

Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:

pain or irritation

watering

redness

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Inhalation Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma

Skin contact: Adverse symptoms may include the following:
irritation
redness

Ingestion: No known significant effects or critical hazards.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects: No known significant effects or critical hazards.

Potential delayed effects: No known significant effects or critical hazards.

Long term exposure

Potential immediate effects: No known significant effects or critical hazards.

Potential delayed effects: No known significant effects or critical hazards.

Potential chronic health effects

General: May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity: Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Inhalation (vapors)	26.8 mg/L
Inhalation (dusts and mists)	5.395 mg/L

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

There is no data available.

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
1-Isopropyl-2,2-dimethyltrimethylene	-	5340	High
4,4'-Methylenediphenyl Diisocyanate	4.51	200	Low

Mobility in soil

Soil/water partition coefficient (KOC): Not available.

Other adverse effects : No known significant effects or critical hazards.

SECTION 13: WASTE DISPOSAL

WASTE DISPOSAL METHOD:

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport Information**DOT:** Not Regulated**IMO/MDG:** Not Regulated**DOT-RQ Details** 4,4'-Methylenediphenyl Diisocyanate 5000 lbs / 2270 kg**Additional information**

DOT Classification: Reportable quantity 17507 lbs / 7948.2 kg [1693.3 gal / 6409.8 L]. The classification of the product is due solely to the presence of one or more US DOT-listed 'Hazardous substances' that are subject to reportable quantity requirements and only applies to shipments of packages greater than, or equal to, the product reportable quantity. Package sizes less than the product reportable quantity are not regulated as hazardous materials. Where a reportable quantity would be involved, the DOT description and IMO/MDG description would be: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (CONTAINS Polymeric MDI, Diphenylmethane Diisocyanate), 9, PGIII,

SECTION 15: REGULATORY INFORMATION**U.S. Federal regulations****TSCA 8(a) PAIR:** 4,4'-Methylenediphenyl Diisocyanate**TSCA 8(a) CDR Exempt/Partial exemption:** Not determined**United States inventory (TSCA 8b):** All components are listed or exempted.**TSCA 8(c) calls for record of SAR:** Isocyanic acid, polymethylenepolyphenylene ester; 4,4'-Methylenediphenyl Diisocyanate**Clean Water Act (CWA) 307:** 4,4'-Methylenediphenyl Diisocyanate**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs):** Listed**Clean Air Act Section 602 Class I Substances:** Not listed**Clean Air Act Section 602 Class II Substances:** Not listed**DEA List I Chemicals (Precursor Chemicals):** Not listed**DEA List II Chemicals (Essential Chemicals):** Not listed**SARA 302/304****Composition/information on ingredients**

No products were found.

SARA 304 RQ : Not applicable.**SARA 311/312 Classification:** Immediate (acute) health hazard Delayed (chronic) health hazard**Composition/information on ingredients**

Name	Fire hazard	Sudden Release Of Pressure	Reactive	Immediate (acute) health Hazard	Delayed (Chronic) health hazard
Isocyanic acid, polymethylenepolyphenylene ester	No.	No.	No.	Yes.	Yes
4,4'-Methylenediphenyl Diisocyanate	No.	No.	No.	Yes.	Yes.

SARA 313**Form R - Reporting****Requirements****Supplier notification****Product name**

Isocyanic acid, polymethylenepolyphenylene ester

4,4'-Methylenediphenyl Diisocyanate

Isocyanic acid, polymethylenepolyphenylene ester

4,4'-Methylenediphenyl Diisocyanate

CAS number

9016-87-9

101-68-8

9016-87-9

101-68-8

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations**Massachusetts:** The following components are listed: 4,4'-Methylenediphenyl Diisocyanate**New York :** The following components are listed: 4,4'-Methylenediphenyl Diisocyanate**New Jersey :** The following components are listed: Isocyanic acid, polymethylenepolyphenylene ester; 4,4'-Methylenediphenyl Diisocyanate**Pennsylvania :** The following components are listed: 4,4'-Methylenediphenyl Diisocyanate**California Prop. 65:** No products were found.**Canada****Canadian lists**

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Canadian NPRI The following components are listed: Isocyanic acid, polymethylenepolyphenylene ester; 4,4'-Methylenediphenyl Diisocyanate

Canada inventory : All components are listed or exempted.

CEPA Toxic substances : None of the components are listed.

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. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

N/A = Not Available

N/E = Not Established.

See Section 1 for date of preparation

Procedure used to derive the classification

Classification

SKIN IRRITATION - Category 2

EYE IRRITATION - Category 2A

RESPIRATORY SENSITIZATION Category 1

SKIN SENSITIZATION - Category 1

CARCINOGENICITY - Category 2

SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (respiratory system) - Category 2

AQUATIC HAZARD (LONG-TERM) - Category 3

Justification

Calculation method

Calculation method

Calculation method

Calculation method

Calculation method

Calculation method

Calculation method

Calculation method

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PRODUCT CODE: 443

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: NP443 PART B
PRODUCT CODES: 443 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: 3/1/18

Chemical Name or Class: liquid mixture

SECTION 2: HAZARDS IDENTIFICATION

Hazard Overview

GHS Classification: Aquatic Hazard (long term) category 3

OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29CFR 1910.1200)

GHS Label Elements and Precautionary Statements:

Label Elements: none required

Single Word: No Signal Word.

Hazard Statements:

Harmful to aquatic life with long lasting effects.

Precautionary statements:

Not Applicable

Response

Not Applicable

Storage:

Not Applicable

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 **FLAMMIBILITY:** 1 **REACTIVITY:** 1 **PERSONAL PROTECTIVE EQUIPMENT:** B

POTENTIAL HEALTH EFFECTS

EYES:

CAN CAUSE SEVERE IRRITATION

SKIN:

MAY CAUSE IRRITATION,

INGESTION:

CAN CAUSE CORROSIVE ACTION TO THE MUCOUS MEMBRANES AND DIGESTIVE TRACTS.

INHALATION:

CAN CAUSE NAUSEA AND RESPIRATORY IRRITATION, DIZZINESS

HEALTH HAZARDS (ACUTE AND CHRONIC):

CAN CAUSE ALLERGIC REACTION 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

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>OSHA STEL</u>	<u>WEIGHT %</u>
1-Isopropyl-2,2-dimethyltrimethylene diisobutyrate	6846-50-0	N/E	N/E	N/E	25-50

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Oxirane, 2-methyl-, polymer with oxirane 2,2' -Oxybisethanol	9003-11-6 111-46-6	N/E N/E	N/E N/E	N/E N/E	5-10 5-10
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***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. There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

SECTION 4: FIRST AID MEASURES

EYES:

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention if irritation occurs.

SKIN:

Flush contaminated skin with plenty of water. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

INGESTION:

Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

INHALATION:

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

SECTION 5: FIRE-FIGHTING MEASURES

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

FLASH POINT: 265F

METHOD USED:

CLOSED CUP

EXTINGUISHING MEDIA:

CO₂, DRY CHEMICAL, WATER SPRAY FOR LARGE FIRES

SPECIAL FIRE FIGHTING PROCEDURES:

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

HAZARDOUS DECOMPOSITION PRODUCTS EVOLVED IN A FIRE MAY BE IRRITATING OR TOXIC. Decomposition products may include the following materials: carbon dioxide, carbon monoxide

SECTION 6: RELEASE MEASURES

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

For non-emergency personnel:

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders:

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For nonemergency personnel".

Environmental precautions:

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up Spill :

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Protective measures:

Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene:

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures. Remove contaminated clothing and protective equipment before entering eating areas.

Conditions for safe storage, including any incompatibilities:

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

United States

Occupational exposure limits

Ingredient name

1-Isopropyl-2,2-dimethyltrimethylene diisobutyrate
Oxirane, 2-methyl-, polymer with oxirane
2,2'-Oxybisethanol

Exposure limits

None.
None.
AIHA WEEL (United States, 10/2011).
TWA: 10 mg/m³ 8 hours.

Canada

Occupational exposure limits

Ingredient name

2,2'-Oxybisethanol

Exposure limits

AIHA WEEL (United States, 10/2011).
TWA: 10 mg/m³ 8 hours.

Appropriate engineering controls:

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection:

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with sideshields.

Skin protection

Hand protection:

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection:

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection:

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection:

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Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: PALE BLACK LIQUID WITH NEGLIGIBLE ODOR

BOILING POINT OR RANGE: N/A

VAPOR DENSITY (AIR = 1): Not available

SPECIFIC GRAVITY (H₂O = 1): 0.98

EVAPORATION RATE: N/A

SOLUBILITY IN WATER:N/A

Odor Threshold: N/A

pH: N/A

Melting point/freezing point: N/A

Vapor Pressure: 0.013 kPa (0.1 mm Hg) @ 77°F (25°C)

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 IGNITIONS SUCH AS SPARKS, HEATERS, STATIC DISCHARGES, ETC.

INCOMPATIBILITY (MATERIAL TO AVOID):

AVOID OXIDIZING MATERIALS and ALKALIS.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:

MAY FORM TOXIC CHEMICALS, CARBON MONOXIDE, CARBON DIOXIDE, OXIDES OF NITROGEN.

HAZARDOUS POLYMERIZATION:

POLYMERIZATION WILL OCCUR WHEN MIXED WITH PART A.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity

Product/ingredient name

Oxirane, 2-methyl-, polymer with oxirane
2,2' -Oxybisethanol

Result

LC50 Inhalation Vapor
LD50 Oral
LD50 Dermal
LD50 Oral

Species

Rat
Rat
Rabbit
Rat

Dose

320 mg/m³
5700 mg/kg
11890 mg/kg
12000 mg/kg

Exposure

4 hours
-
-
-

Irritation/Corrosion

Product/ingredient name

1-Isopropyl-2,2-dimethyltrimethylene diisobutylate
2,2' -Oxybisethanol

Result

Skin-Mild irritant
Skin - Mild irritant
Eyes - Mild irritant
Skin - Mild irritant
Skin - Mild irritant

Species

Guinea pig
Human
Rabbit
Human
Rabbit

Score

-
-
-
-
-

Exposure

5 g
504 hours 1% Intermittent
50 mg
72 hours 112 mg Intermittent
500 mg

Observation

-
-
-
-
-

Sensitization

There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity

There is no data available.

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

There is no data available.

Information on the likely routes of exposure

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Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eye contact : No known significant effects or critical hazards

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects: No known significant effects or critical hazards.

Potential delayed effects: No known significant effects or critical hazards.

Long term exposure

Potential immediate effects: No known significant effects or critical hazards.

Potential delayed effects: No known significant effects or critical hazards.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	7586.8 mg/kg

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Product/ingredient	name	Result	Species	Exposure
2,2' -Oxybisethanol	Acute LC50	75200000 µg/L	Fresh water Fish - Pimephales promelas	96 hours

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
1-Isopropyl-2,2-dimethyltrimethylene Diisobutyrate	-	5340	high
2,2' -Oxybisethanol	-	1.98 100	low

Mobility in soil

Soil/water partition coefficient (KOC): Not available.

Other adverse effects : No known significant effects or critical hazards.

SECTION 13: WASTE DISPOSAL

WASTE DISPOSAL METHOD:

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport Information

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DOT: Not Regulated

IMO/IMDG: Not Regulated

SECTION 15: REGULATORY INFORMATION

U.S. Federal regulations:

TSCA 5(a)2 final significant new use rules: 2-Methoxyethanol

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

United States inventory (TSCA 8b): Not determined.

Clean Water Act (CWA) 311: Diammonium carbonate; Phosphoric acid

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) Listed

Clean Air Act Section 602 Class I Substances Not listed

Clean Air Act Section 602 Class II Substances Not listed

DEA List I Chemicals (Precursor Chemicals) Not listed

DEA List II Chemicals (Essential Chemicals) Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312 Classification Not applicable.

Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health Hazard
2,2' -Oxybisethanol	No.	No.	No.	Yes.	No

SARA 313

There is no data available.

State regulations None of the components are listed.

Massachusetts None of the components are listed.

New York None of the components are listed.

New Jersey None of the components are listed.

Pennsylvania : The following components are listed: Oxydipropanol; 2,2' -Oxybisethanol

California Prop. 65

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant Risk level	Maximum acceptable dosage
Ethandiol	No.	Yes.	-	-
1,4-Dioxane	Yes.	No.	Yes.	-
2-Methoxyethanol	No.	Yes.	-	Yes.

Canada

Canadian lists

Canadian NPRI : None of the components are listed.

CEPA Toxic substances : None of the components are listed.

Canada inventory : Not determined.

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.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

N/A = Not Available

N/E = Not Established

See Section 1 for date of preparation