TECHNICAL & SAFETY DATA SHEET

Technical Data Sheet

SP-17 Rapid Patch Liquid

POLYMER NATION CHEMICAL COMPANY, LLC

Product Overview: SP-17 combines our fastest setting polyaspartic with our proprietary Iso blend to create a rapid pour and patch system. By incorporating a variety of fillers and aggregates the user can achieve a patching material that is ready for grinding in 1 hour.

Uses: SP-17 is most often used to patch concrete holes, cracks, divots and non-moving joints when time is too limited for our SP-15 patching material.

Preparation: The preparation method for each project is determined by a full understanding of the substrate to be coated, the chemistry of the coating system being used, the coating system thickness, and numerous other factors. The coating installer should fully read and understand ICRI Guideline NO.03732 and OSHA 29 CFR 1926.1153 before starting preparatory work. The aim, of preparing a substrate for coating applications, is to roughen the surface, remove weak layers, contaminants, dirt, debris and present a solid, clean, dry substrate for the primer. If unsure as to the level of preparation needed, contact Polymer Nation at Lab@polymerNation.com.

The data below represents the most pertinent information needed by a professional installer to understand and efficiently install this material. The data was gathered at temperatures of 72-75 F and 30-50% RH. A wide array of independent and company test data has been compiled on this product but is too large to place on this Technical Data Sheet. Please direct inquiries for detailed test reports on this product to Lab@polymerNation.com.

Description	Results	Notes
Number of mixes per kit	Depends on mix size	A 1 mix kit consists of 1 part A, 1 part B and select aggregate or powder. See Mixing and Installation below.
Number of Components	2	Aggregate is not supplied with this kit.
Mix Ratio by Volume	See Mixing & Installation	
Ideal Application Temperatures	50F-80F	
Mixed Viscosity in cP@25C/77F	300 A & B	Warmer temperatures will reduce viscosity and lower temperatures will increase viscosity
Gel Time	8 min.	Warmer temperatures will decrease gel time and lower temperatures will increase gel time
Dry to Touch	.5 Hours	Warmer temperatures will reduce time and colder temperatures will increase time
Through Dry	.75 Hours	Warmer temperatures will reduce time and colder temperatures will increase time
Dry to Grind	1 Hours	Warmer temperatures will reduce time and colder temperatures will increase time
Dry to Lightly Use	4 Hours	Warmer temperatures will reduce time and colder temperatures will increase time
Full Cure	2 Days	Warmer temperatures will reduce time and colder temperatures will increase time
Shore Hardness at 24 hours	D65	Warmer temperatures will increase hardness
Shore Hardness at 7 days	D81	Warmer temperatures will shorten time to reach full hardness
Gloss @ 60 Degree Angle	30-40	Applying material close to dew point will decrease gloss and may result in an amine blush
VOC's of Mixed Material	<50g/L	EPA Method 24
Color Scale per ASTM D1500	.5-1.0	Clear to slightly amber before filler is introduced
Solids by Volume Mixed	100%	
Storage	60F-90F	Store material between 60-90 degrees F in a protected dry location.
Odor	Subtle	
Coverage Per Mix	N/A	
Disposal	Dispose of material, containers, solvents, etc., per Federal, State and local guideline, rules and laws	
Available Colors	This material is available in clear.	
Mixing & Installation	A starting point mixture may consist of 16 FL. OZ. A, 16 FL. OZ. B and 13 LB. of aggregate. Aggregate size and the fluidity of the mixed material is based upon user preference and application parameters. Combine 1 part A and 1 part B into a single container, large enough to accept the entire kit. Premix liquids at 200 RPM for 1 minute using an appropriate mixing blade. Immediately add the aggregate into the mixed resin and agitate for 1 minute. Immediately pour the entire mixed content from the container into the area to be filled. Only mix up what can be used within 2-5 minutes. Clean tools with a solvent similar to Xylene or Acetone.	

TECHNICAL & SAFETY DATA SHEET

DATE ISSUED:	6/29/2023
MSDS REF. No:	SP-17 Part A

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: SP-17 Part A
Product Code: SP-17 Part A

Supplier/Manufacturer: POLYMER NATION CHEMICAL
1949 Swanson Court
Gurnee, IL 60031
(847) 774-5038

EMERGENCY PHONE: CHEMTREC, US (800) 424-9300 24-hours
ORIGINAL DATE ISSUED: 7/14/14 **REVISION DATE**: 2/12/2020

Recommended end use: Half of a two-component system designed for application and use as a protective coating.

2. HAZARD IDENTIFICATION

Emergency Overview: Danger. May cause allergic skin reaction. May cause skin, eye, and respiratory tract irritation. Harmful by inhalation and if swallowed.
Component Information/Information on Non-Hazardous Components: No data available.
GHS Classification of the Substance or Mixture (29 CFR 1910.1200):

Flammable liquids	Category 4
Skin corrosion	Category 1C
Eye irritation	Category 2A
Skin Sensitization	Sub-category 1A
Acute aquatic toxicity	Category 3

GHS Hazards Pictograms:

Signal Word(s): Danger.
Hazard Statement(s):
H227 - Combustible liquid.
H314 - Causes severe skin burns and eye damage. H317 - May cause an allergic skin reaction.
H402 - Harmful to aquatic life.
Precautionary Statement(s):
Prevention:
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P260 - Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264 - Wash skin thoroughly after handling.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection.
P273 - Avoid release to the environment.
Response:
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P332 + P313 - If skin irritation or rash occurs: Get medical advice/ attention.
P363 - Wash contaminated clothing 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.

P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310 - Immediately call a POISON CENTER or doctor/ physician.
P370 + P378 - In case of fire: Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide to extinguish.
Storage:
P403 + P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
Disposal:
P501 - Dispose of contents/container to an approved waste disposal plant in accordance with applicable laws and regulations, and product characteristics at time of disposal.
Hazard(s) not otherwise classified (HNOC): None known.

Other Information:

Combustible liquid and vapor. Corrosive. Causes skin burns. May cause eye irritation. May cause sensitization by skin contact. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Inhalation: No information was found regarding effects from inhalation exposure. May cause respiratory tract irritation. Because of its low volatility, exposure to vapors is unlikely. High concentrations of mists may irritate the nose and throat and cause nausea, headache, dizziness, weakness, and fatigue. May cause lung sensitization, an allergic reaction, which becomes evident on re-exposure to this material.

Skin: Corrosive. May cause burns resulting in permanent damage. Causes skin sensitization, an allergic reaction, which becomes evident on re-exposure to this material.

Eye: Corrosive. May cause burns resulting in permanent damage. May injure eye tissue and result in permanent damage.

Ingestion: Corrosive and may cause severe and permanent damage to mouth, throat, and stomach. This product has a low order of acute oral toxicity based on animal data.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

Chemical Name	Identifiers	% (by weight)	Comments
Isophorondiamine-isobutyraldimine	CAS 54914-37-3	2-7	Flammable liquids Category 4 Skin corrosion Category 1C Eye irritation Category 2A Skin sensitization Sub-category 1A Acute aquatic toxicity Category 3
Mixture of Polyaspartic Amines		80-95	

Other Information: This material is classified as hazardous under OSHA regulations.

4. FIRST AID MEASURES

Inhalation: Move victims into fresh air. If breathing is labored, administer oxygen. Consult a doctor immediately.

Skin contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Obtain medical attention. Wash clothing before reuse. Destroy or thoroughly clean contaminated shoes before reuse.

Eye contact: Rinse immediately with plenty of water for 15 minutes and seek advice of an eye specialist.

Ingestion: Rinse out mouth, spit out liquid. Do not induce vomiting and seek medical advice immediately.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Water spray, foam, CO2, dry powder.

Unsuitable Extinguishing Media: High volume water jet.

Unusual Fire and Explosion Hazards: Firefighters should wear NFPA approved self-contained breathing apparatus and full protective clothing. Avoid contact with product. Decontaminate equipment and protective clothing prior to re- use. Toxic and irritating gases/fumes may be given off during burning or thermal decomposition. Combustible liquid. Vapors can travel to a source of ignition and flash back. Explosive mixtures may occur at temperatures at or above the flashpoint. Autoignition may occur with cotton waste or similar combustible materials.

Hazardous Decomposition Products: isophorone diamine, isobutyraldehyde, nitrogen oxides, carbon monoxide, carbon dioxide.

Advice to Fire Fighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire, including self-contained breathing apparatus and NFPA compliant helmet, hood, boots, and gloves. Vapors or mist may be a fire and explosion hazard when exposed to high temperature or ignition. Closed container may forcibly rupture under extreme heat. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Toxic gases/fumes may be given off during burning or thermal decomposition.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear appropriate personal protective equipment. Evacuate surrounding areas and isolate the area. Keep unnecessary and unprotected personnel from entering. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Implement site emergency response plan.

Environmental Precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers. Inform authorities if the product has caused environmental pollution (sewers, drains, waterways, or soil).

Containment/Clean-up Measures: Cleanup personnel must use appropriate personal protective equipment. Evacuate and keep unnecessary personnel out of spill area. Remove all sources of ignition, including flames, heat, and sparks. Stop leak if without risk. Move containers from spill area. Dike or dam spilled material with non-combustible, absorbent material (e.g., sand, earth, vermiculite, or diatomaceous earth) and control further spillage, where possible. Make certain the absorbent material soaks up all liquids.

7. HANDLING AND STORAGE

Handling: Do not breathe vapors or spray mist. Avoid contact with eyes or skin. Avoid contact with clothing. Use only with adequate ventilation and personal protection. Remove contaminated personal protective equipment (PPE), then wash hands and face thoroughly after handling and before eating and drinking. Keep container closed when not in use. Empty containers retain product residue and can be hazardous. Do not get in eyes, on skin or on clothing. Do not ingest. Keep away from heat, sparks, flames, and other sources of ignition. Avoid release to the environment. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination with moisture is suspected. Follow all SDS/label precautions even after container is emptied because it may retain product residues.

Storage: Keep away from food products during use and storage. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled, unapproved, or reactive containers. Use appropriate containment to avoid environmental contamination. Personnel education and training in the safe use and handling of this product are required under OSHA Hazard Communication Standard 29 CFR 1910.1200.

Incompatible Materials or Ignition Sources: Stable under recommended storage conditions. Avoid water, air humidity, oxidizing agents, cotton waste or other combustible materials. Keep away from sources of ignition - No smoking. This material may have a low electrical conductivity and therefore may accumulate dangerous levels of static electricity. An ignitable vapor-air mixture can form inside storage tanks. The user must be sure to dissipate static charge by careful bonding and grounding of all equipment, and personnel involved in fluid transfer should conduct continuity checks to prove effectiveness of bonding and grounding. Additional precautions against fire and explosion are the use of inert gas to purge vapor space; dip-pipes while filling vessels, especially lined vessels; grounded tank level floats; reduced flow velocity; self-closing valves on transfer lines; flame arrestors in vent lines. Additional guidance on fire and explosion protection may be found in various consensus standards, including NFPA 30, 69 and 77 and API 2003 as well as OSHA regulation 29CFR1910.106.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Special Note for Exposure Control: Consult local authorities for further acceptable exposure limits.

Exposure Limits/Guidelines		
Chemical Name	**Result**	**ACGIH/OSHA**
Isophorondiamine-isobutyraldimine	STELs	No data available
CAS 54914-37-3	TWAs	No data available
Mixture of Polyaspartic Amines	PEL	No data available

Engineering Measures/Controls: General dilution and local exhaust as necessary to control airborne vapors, mists, dusts, and thermal decomposition products below appropriate airborne concentration standards and guidelines. A

safety shower and eye wash fountain should be readily available. To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132) be conducted before using this product. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination. Curing ovens must be ventilated to prevent the build-up of explosive atmospheres and to prevent off-gases from entering the workplace.

Environmental Exposure Controls: Avoid release to the environment. Construct a dike to prevent spreading of spills. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Hygiene Measures: Wash hands, forearms, and face thoroughly after handling chemical products, before eating and drinking, smoking, or using the lavatory and at the end of the working period. 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.

Personal Protective Equipment

Respiratory: In case of inadequate ventilation, wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use positive pressure supplied air respirator when airborne concentrations are not known, when airborne levels are 10 times the appropriate TLV, and when spraying is performed, or product is applied by aerosol in a confined space or area with limited ventilation. If respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Contact health and safety professional or manufacturer for specific information.

Eye/Face: Use chemical resistant goggles. Chemical safety goggles in combination with a full-face shield must be used if a splash hazard exists.

Hands: Use permeation resistant gloves such as butyl rubber, nitrile rubber, or neoprene.

Skin/Body: Wear rubber or plastic apron and permeation resistant clothing, chemical-resistant gloves, and long-sleeved shirts, and pants. Remove and wash contaminated clothing before re-use.

General Industrial Hygiene Considerations: Keep away from food and drink. Wash hands and face after use. Educate and train workers in the safe use and handling of this product. Emergency showers and eye wash stations should be available. Follow all label instructions.

Key to Abbreviations:

ACGIH = American Conference of Governmental Industrial Hygiene NIOSH = National Institute of Occupational Safety and Health OSHA = Occupational Safety and Health Administration

MSHA = Mine Safety and Health Administration

TWA = Time-Weighted Averages are based on 8h/day 40hr/week exposures STEL = Short Term Exposure Limits are based on 15-minute exposures

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form	Liquid	**Appearance/Description**	Clear
Color	Pale yellow	**Odor**	Amine like
Boiling Point	302°C (576°F)	**Bulk Density**	No data available
Specific Gravity	1.05 ± 0.1	**UEL**	No data available
Water Solubility	Not readily soluble	**LEL**	No data available
Flash Point	130°C (266°F) TOC	**NVW**	100 ca

10. STABILITY AND REACTIVITY

Reactivity: Under normal conditions stable

Chemical Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Autoignition may occur with cotton waste or similar combustible materials.

Conditions to Avoid: Extreme Heat, air humidity, water

Incompatible Materials: Water, oxidizing agents, cotton waste, acids, isocyanates, or other combustible materials.

Hazardous Decomposition Products: Decomposition products in hydrolysis/thermal decomposition isophorone diamine, amines, carbon dioxide, carbon monoxide, oxides of nitrogen, isobutyraldehyde and other undetermined compounds

TECHNICAL & SAFETY DATA SHEET

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Isophorondiamine-isobutyraldimine CAS 54914-37-3

LD50 Oral Rat 4,150 mg/kg
LD50 Inhalation No data available LD50 Dermal Rabbit >5,000 mg/kg
LD50 Dermal Guinea Pig Corrosive, Category 1C

Polyaspartic Amines

LD50 Oral Rat >2,000 mg/kg
LC50 Inhalation Rat >4,224 mg/l, 4h LD50 Dermal Rat >2,000 mg/kg

IMMEDIATE (ACUTE) EFFECTS

Isophorondiamine-isobutyraldimine CAS 54914-37-3
Skin Corrosion/Irritation (Guinea Pig): Skin sensitizer, sub-category 1A Eye Irritation (Rabbit): Irritating.
Inhalation (Mouse): No data available. Carcinogenicity: Ames Test, Not mutagenic.

Polyaspartic Amines

Skin Corrosion/Irritation (Rabbit, 24h): None
Skin Sensitization (Guinea Pig, OECD Test Guidelines 406, 442E, 442D, and 442C): Positive Carcinogenicity: OSHA Not Listed. IARC Not Listed. NTP Not Listed.

12. ECOLOGICAL INFORMATION

Toxicity

Polyaspartic Amines:

Toxicity: Acute Toxicity to Fish: LC50 66 mg/l (Zebra Fish, 96h), LC50 88.6 mg/l (Water Flea, 96h); Acute Toxicity to algae: ErC50 113 mg/l.
Persistence and Degradability: Not readily degradable.
Bioaccumulative Potential: Bioaccumulation ca. 8,228 BCF.
Other Adverse Effects: Toxicity to terrestrial Plants: EC50 ≥100 mg/kg, 14d)
Other Information: Toxicity to Microorganisms: EC 50: 3,110 mg/l (bacteria, 3 h).
Isophorondiamine-isobutyraldimine CAS 54914-37-3:
Toxicity to fish: LC50 Danio rerio: > 100 mg/l / 96 h
Toxicity in aquatic invertebrates: EC50 Daphnia magna: 14.7 mg/l/48 h | NOEC Daphnia magna: 3 mg/l / 21 d
Toxicity to algae: ErC50 Desmodesmus subspicatus: > 100 mg/l | NOEC Desmodesmus subspicatus: 7.6 mg/l
Toxicity to bacteria: EC50 Activated sludge: 302.4 mg/l / 3 h
Persistence and degradability
Exposure time: 28 d
Result: 34 % Not readily biodegradable.
Bioaccumulative Potential: Bioaccumulation - No data available

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods: Dispose in accordance with Federal, State, and Local laws and regulations. The generation of waste should be avoided or minimized wherever possible. Empty containers should be taken to an approved waste handling site for recycling or disposal. Incineration or landfill should only be considered when recycling is not feasible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Empty Container Precautions: Do not heat or cut container with electric or gas torch. Recondition or dispose of empty container in accordance with governmental laws and regulations. Do not reuse empty container without proper cleaning. Label precautions also apply to this container when empty.

14. TRANSPORT INFORMATION

	14.1 UN Number	14.2 UN Proper Shipping Name	14.3 Transport Hazard Class(es)	14.4 Packing Group	14.5 Environmental Hazards
DOT	UN 2735	Amines, Liquid, corrosive, n.o.s. (blocked diamine)	8	III	H412 Harmful to aquatic life with long-lasting effects
IMO/IMDG	UN 2735	Amines, Liquid, corrosive, n.o.s. (blocked diamine)	8	III	H412 Harmful to aquatic life with long-lasting effects
IATA/ICAO	UN 2735	Amines, Liquid, corrosive, n.o.s. (blocked diamine)	8	III	H412 Harmful to aquatic life with long-lasting effects

Special Precautions for User:
DOT: Keep separate from acids. Keep separate from foodstuffs, luxury foods, feedstuffs.
Air Transport (IATA-C/IATA-P): ERG-Code 8L Keep separate from foodstuffs, luxury foods, feedstuffs.
Sea Transport: (EmS): Keep separate from acids. Keep separate from foodstuffs, luxury foods, feedstuffs.
Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

15. REGULATORY INFORMATION

State Right to Know				
Component	CAS	MA	NJ	PA
Isophorondiamine-isobutyraldimine	54914-37-3	54914-37-3	54914-37-3	54914-37-3
Polyaspartic Amines Mixture	-	-	-	-

Inventory				
Component	CAS	Canada DSL	Canada NDSL	TSCA
Isophorondiamine-isobutyraldimine	54914-37-3	Listed	-	Listed

This product is in compliance with the inventory listing of the following countries:

Australia (AICS)	listed/registered
Japan (MITI)	listed/registered
Korea (KECI)	listed/registered
Philippines (PICCS)	listed/registered
China	listed/registered
New Zealand	listed/registered

US Federal Regulations United States
U.S. – CERCLA/SARA – Hazardous Substances and their Reportable Quantities: None
U.S. – SARA – Section 311/312 Hazard Categories: Acute Health Hazard, Fire Hazard
U.S. – CERCLA/SARA – Section 302 Extremely Hazardous Substances TPQs: None
U.S. – CERCLA/SARA – Section 313 – Emissions Reporting: None
U.S. – CERCLA/SARA – Section 313 – PBT Chemical Listing: None
U.S. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A) Components: None
U.S. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 372.65) Supplier Notification Required Components: None
U.S. Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261): Under RCRA it is the responsibility of the person who generates a solid waste, as defined in 40 CFR 261.2, to determine if that waste is a hazardous waste.

State Regulations
United States – California
U.S. – California – Proposition 65 – Carcinogens List: None
U.S. – California – Proposition 65 – Developmental Toxicity: None
U.S. – California – Proposition 65 – Maximum Allowable Dose Levels (MADL): None
U.S. – California – Proposition 65 – No Significant Risk Levels (NSRL): None
U.S. – California – Proposition 65 – Reproductive Toxicity – Female: None
U.S. – California – Proposition 65 – Reproductive Toxicity – Male: None

Based on information provided by Polymer Nation Chemical suppliers, this product is considered “DRC Conflict Free” as defined by the SEC Conflict Minerals Final Rule (Release No. 34-67716, File No. S7-40-10, Date 08-22-212).

16. OTHER INFORMATION

THE INFORMATION HEREIN HAS BEEN COMPILED FROM SOURCES BELIEVED TO BE RELIABLE AND IS ACCURATE TO THE BEST OF OUR KNOWLEDGE. HOWEVER, POLYMER NATION CHEMICAL CANNOT GIVE ANY GUARANTEES REGARDING INFORMATION FROM OTHER SOURCES, AND EXPRESSLY DOES NOT MAKE ANY WARRANTIES, NOR ASSUMES ANY LIABILITY FOR ITS USE.

TECHNICAL & SAFETY DATA SHEET

DATE PRINTED:	6/29/2023
MSDS REF. No:	SP-17 Part B

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: SP-17 Part B
Product Code: SP-17 Part B
Supplier/Manufacturer: POLYMER NATION CHEMICAL
1949 Swanson Court
Gurnee, IL 60031
(847) 774-5038

EMERGENCY PHONE: CHEMTREC, US (800) 424-9300 24-hours
ORIGINAL DATE ISSUED: 7/14/14 **REVISION DATE**: 7/14/2014

Recommended end use: Half of a two-component system designed for application and use as a protective coating.

2. HAZARDS IDENTIFICATION

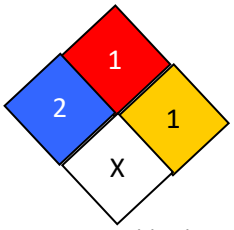
Acute Oral Toxicity, Category 2
Skin Corrosion, Category 1C
Serious Eye Damage, Category 2A
Aspiration Hazard, Category 1

SIGNAL WORD: Danger
Hazard-determining components of labeling: Homopolymer of Hexamethylene Diisocyanate
Hazard Statements
H317 May cause an allergic skin reaction
H304 May be fatal if swallowed and enters airways
H412 Harmful to aquatic life with long lasting effects
H335 May cause respiratory irritation
H314 Causes severe skin burns and eye damage
Precautionary Statements
P273 Avoid Release to the Environment
P280 Wear protective gloves/ protective clothing/eye protection/face protection.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue Rinsing.
P310 Immediately Call a POISON CENTER or doctor/physician.

HMIS RATING	
Health:	2*
Flammability:	1
Reactivity:	1
Personal Protection:	X

* Chronic Health Hazard

NFPA CODES



Potential Health Effects:
SKIN: Acute: Causes irritation with symptoms of reddening, itching, and swelling. Can cause sensitization. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Cured material is difficult to remove.
Chronic: Prolonged contact can cause reddening, swelling, rash, and, in some cases, skin sensitization. Animal tests and other research indicate that skin contact with diisocyanates can play a role in causing isocyanate sensitization and respiratory reaction. This data reinforces the need to prevent direct skin contact with isocyanates.
EYES: Causes irritation with symptoms of reddening, tearing, stinging, and swelling. May cause temporary corneal injury. Vapor may cause irritation with symptoms of burning and tearing. Prolonged vapor contact may cause conjunctivitis.
INHALATION: Acute: Diisocyanate or polyisocyanate vapors or mist at concentrations above the exposure limits or guidelines can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) with symptoms of runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing difficulty). Persons with a preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below the exposure limits or guidelines with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the exposure limits or guidelines may lead to bronchitis, bronchial spasm, and pulmonary edema (fluid in lungs). Chemical or hypersensitivity

pneumonitis, with flu-like symptoms (e.g., fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible.

Chronic: As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to diisocyanates or polyisocyanates (asthma or asthma-like symptoms) that may cause them to react to a later exposure to diisocyanates or polyisocyanates at levels well below the exposure limits or guidelines. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthmatic attack, could be delayed up to several hours after exposure. Extreme asthmatic reactions can be life threatening. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air, or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Sensitization can be permanent. Chronic overexposure to diisocyanates has also been reported to cause lung damage (including fibrosis, decrease in lung function) that may be permanent.

INGESTION: May cause irritation; Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

CHRONIC HAZARDS: No Carcinogenic substances as defined by IARC, NTP and/or OSHA. Medical conditions aggravated by exposure include skin allergies, eczema, asthma, and respiratory disorders.

3. COMPOSITION/INFORMATION ON INGREDIENTS

This document is a pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). Where a proprietary ingredient is shown, the identity may be made available as provided in this standard. All components of this product are included in the EPA Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Chemical Name	Weight %	CAS Number
Homopolymer of Hexamethylene Diisocyanate	60-100%	28182-81-2
Hexamethylene-1,6-Diisocyanate	0.1-0.1%	822-06-0

4. FIRST AID MEASURES

GENERAL ADVICE: Consult a physician. Show this safety data sheet to physician in attendance.

EYES: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Use lukewarm water if possible. Use fingers to ensure that eyelids are separated and that the eye is being irrigated. Then remove contact lenses, if easily removable, and continue eye irrigation for not less than 15 minutes. Get medical attention if irritation develops.

SKIN: Immediately remove contaminated clothing and shoes. Wash off with soap and water. Use lukewarm water if possible. Wash contaminated clothing before reuse. For severe exposures, immediately get under safety shower and begin rinsing. Get medical attention if irritation develops and persists.

INHALATION: Move to an area free from further exposure. Get medical attention immediately. Administer oxygen or artificial respiration as needed. Asthmatic symptoms may develop and may be immediate or delayed up to several hours. Extreme asthmatic reactions can be life threatening.

INGESTION: Do NOT induce vomiting. Wash mouth out with water. Do not give anything by mouth to an unconscious person. Get medical attention.

NOTE TO PHYSICIANS

EYES: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic/steroid preparation as needed. Workplace vapors could produce reversible corneal epithelial edema impairing vision.

SKIN: This compound is a skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burn.

INGESTION: Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of the compound.

INHALATION: Treatment is essentially symptomatic. An individual having a dermal or pulmonary sensitization reaction to this material should be removed from further exposure to any diisocyanate.

5. FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Dry chemical, Carbon dioxide (CO2), Foam, water spray for large fires.

For safety reasons, unsuitable extinguishing agents: N/A

SPECIAL FIRE & UNUSAL HAZARD: 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.

SPECIAL FIREFIGHTING INSTRUCTIONS: Firefighters should wear NFPA compliant structural firefighting protective equipment, including self-contained breathing apparatus and NFPA compliant helmet, hood, boots, and gloves. Avoid contact with product. Decontaminate equipment and protective clothing prior to reuse. During a fire, isocyanate vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Exposure to heated diisocyanate can be extremely dangerous.

ADDITIONAL INFORMATION: None available

HAZARDOUS COMBUSTION PRODUCTS formed under fire conditions: Carbon oxides, explosive rupture.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Evacuate non-emergency personnel. Isolate the area and prevent access. Remove ignition sources. Notify management. Put on protective equipment. Control source of the leak. Ventilate. Contain the spill to prevent spread into drains, sewers, water supplies, or soil. Call ChemTel at 800-255-3924 for assistance and advice.
Environmental precautions: Major Spill or Leak (Standing liquid): To minimize vapor, cover the spillage with firefighting foam (AFFF). Released material may be pumped into closed, but not sealed, metal container for disposal. Process can generate heat. Cover spill with neutralization solution for 1 hour. Cover with inert absorbent. Collect washings for disposal. Minor Spill or Leak (Wet surface): Cover spill area with suitable absorbent material (Kitty Litter, Oil-Dri®, etc). Saturate absorbent material with neutralization solution and mix. Wait 1 hour. Collect material in open-head metal containers. Repeat applications of decontamination solution, with scrubbing, followed by absorbent until the surface is decontaminated. Check for residual surface contamination. Swype® test kits have been used for this purpose. Apply lid loosely and allow containers to vent for 72 hours to let carbon dioxide (CO2) escape. Additional Spill Procedures/Neutralization
Neutralization solutions:
(1) 50% Isopropanol, 45% water and 5% concentrated ammonia solution (% by weight)
Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.
See Section 7 for information on safe handling.
See section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7. HANDLING AND STORAGE

HANDLING: Do not breathe vapors, mists, or dusts. Use adequate ventilation to keep airborne isocyanate levels below the exposure limits. Wear respiratory protection if material is heated, sprayed, used in a confined space, or if the exposure limit is exceeded. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent overexposure from inhalation. This material can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapor or spray mist. Avoid contact with skin and eyes. Wear appropriate eye and skin protection. Wash thoroughly after handling. Do not breathe smoke and gases created by overheating or burning this material. Decomposition products can be highly toxic and irritating. Employee education and training in the safe use and handling of this product are required under the OSHA Hazard Communication Standard 29 CFR 1910.1200.
STORAGE: Store between -29.2°F and 122°F. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. Do not store near food stuffs. Storage period is approximately 6 months at 77°F after receipt of material by customer.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Good industrial hygiene practice dictates that worker protection should be achieved through engineering controls, such as ventilation, whenever feasible. When such controls are not feasible to achieve full protection, the use of respirators and other personal protective equipment is mandated. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination. Curing ovens must be ventilated to prevent emissions into the workplace. If oven off-gases are not vented properly (i.e., they are released into the work area), it is possible to be exposed to airborne monomeric HDI.
Exposure Controls:
<u>Homopolymer of Hexamethylene Diisocyanate (28182-81-2)</u>
Exposure Limit: time weighted average 0.5 mg/m3
Short Term Exposure Limit (STEL): 1.0 mg/m3 (15-min)
<u>Hexamethylene-1,6-Diisocyanate (822-06-0)</u>
US. ACGIH Threshold Limit Values: Time Weighted Average (TWA): 0.005 ppm
Ceiling Limit Value: 0.02 ppm
Personal Protection Equipment:

Respiratory Protection: When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations. Under normal conditions, in the absences of other airborne contaminants, the following devices should provide protection from this material up to the conditions specified by the appropriate OSHA, WHMIS or ANSI standard(s): Full-face air-purifying respirators are required in work environments where isocyanate airborne concentrations exceed the action level but are significantly lower than the IDLH provided that the cartridges are changed daily. Use combination HEPA filter for the polyisocyanate aerosol and an organic vapor cartridge for the solvents used. Install organic vapor cartridge closest to face. Full-face supplied-air respirators (SAR) are required in work environments where isocyanate airborne concentrations have not been characterized or are expected to exhibit considerable and sudden variations such as in spray type application.

TECHNICAL & SAFETY DATA SHEET

Skin Protection: Use impervious gloves (neoprene, butyl rubber or nitrile). Gloves should be tested for chemical resistance before reliable use. (penetration times, rates of diffusion and rate of degradation). Wear long sleeves and pants, exposing as little skin as possible.

Eye Protection: When directly handling liquid product, eye protection is required. Examples of eye protection include a chemical safety goggle, or chemical safety goggle in combination with a full-face shield when there is a greater risk of splash. DO NOT WEAR CONTACT LENSES when working with this material!!!

MEDICAL SURVEILLANCE: All applicants who are assigned to an isocyanate work area should undergo a pre-placement medical evaluation. A history of eczema or respiratory allergies such as hay fever, are possible reasons for medical exclusion from isocyanate areas. Applicants who have a history of adult asthma should be restricted from work with isocyanates. Applicants with a history of prior isocyanate sensitization should be excluded from further work with isocyanates. A comprehensive annual medical surveillance program should be instituted for all employees who are potentially exposed to diisocyanates. Once a worker has been diagnosed as sensitized to any isocyanate, no further exposure can be permitted. Refer to the Bayer pamphlet (Medical Surveillance Program for Isocyanate Workers) for additional guidance.

ADDITIONAL PROTECTIVE MEASURES: Emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of this product. Follow all label instructions.

Hygienic Practices: Wash hands before eating. Remove contaminated clothing and wash before reuse. Follow all MSDS/label precautions even after container is emptied because they may retain product residues. Avoid prolonged or repeated contact with skin. Avoid contact with eyes, skin, and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Volatile Organic Content: N.A.	**Solubility in Water**: Insoluble, reacts slowly with water to liberate CO_2
Color: Colorless to light yellow	**Specific Gravity @ 20°C**:1.13
Odor: Slight	**pH @ 100%:** N.A.
Physical Appearance: Colorless to Light Yellow Liquid.	**Melting/Freezing point:** N/A
Boiling Point: >150°C (302°F) @ 1 mmHg	**Flashpoint:** >160°C (320°F)
Ignition Temperature: N/A	**Auto-ignition temperature:** N/A
Explosion Limits:	**Water solubility:** Insoluble, reacts slowly with water to liberate CO_2
Lower: N/A	**Partition coefficient (n-octanol/water):** N/A
Upper: N/A	**Relative vapor density:** N/A
Odor Threshold: N/A	**Evaporation rate:** N/A
N/A = Not Available **N/D** = Not Determined **Ca.** = Approximate	

10. STABILITY AND REACTIVITY

STABILITY: Stable under recommended and normal conditions of use and storage.

HAZARDOUS POLYMERIZATION: Hazardous polymerization may occur. Contact with moisture, other materials that react with isocyanates, or temperatures above 350 F (177 C), may cause polymerization.

INCOMPATIBILITY: Avoid: Water, amines, strong bases, alcohols, copper alloys.

HAZARDOUS DECOMPOSITION PRODUCTS: By Fire and High Heat: Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen (NOx), dense black smoke, Hydrogen cyanide, Isocyanate, Isocyanic Acid, Other undetermined compounds. By hydrolysis: Carbon Oxides.

CONDITIONS TO AVOID: Fire. Heat. Flame. Sources of ignition. Sparks. Moisture.

11. TOXICOLOGICAL INFORMATION

Component Toxicological Information:

Toxicity Data for Homopolymer of Hexamethylene Diisocyanate

Acute oral toxicity: LD50: > 5,000 mg/kg (Rat)

Acute inhalation toxicity: LC50: 2.18 mg/l, 4 h (Rat)

Acute dermal toxicity: LD50: > 2,000 mg/kg (rabbit)

Skin irritation: rabbit, Draize, slightly irritating

Eye irritation: rabbit, Draize, slightly irritating

Chronic Toxicity: This product does not contain any substances that are considered by OSHA, NTP, IARC, or ACGIH to be "probable" or "suspected" human carcinogens.

TECHNICAL & SAFETY DATA SHEET

12. ECOLOGICAL INFORMATION

Ecological Data for Product
Additional Ecotoxicological Remarks: No data available for this product.
Ecological Data for Homopolymer of Hexamethylene Diisocyanate
Biodegradation: 0 %, Exposure time: 28 Days, not readily biodegradable.
Acute and Prolonged Toxicity to Fish: LC0: > 100 mg/l (Zebra fish (Brachydanio rerio), 96 h)
Acute Toxicity to Aquatic Invertebrates: EC0: > 100 mg/l (Water flea (Daphnia magna), 48 h)
Toxicity to Aquatic Plants: EC50: > 1,000 mg/l, (Green algae (Scenedesmus subspicatus), 72 h)
Toxicity to Microorganisms: EC50: > 1,000 mg/l, (Activated sludge microorganisms, 3 h)

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: The generation of waste should be avoided or minimized wherever possible. Do not dispose of with household waste. Do not dispose of in landfill. Do not allow contact with sewers or waterways. Comply with all Federal, State and Local environment control laws. Incineration is the preferred method. Under RCRA, it is the responsibility of the person who generates a solid waste, as defined in 40 CFR 261.2, to determine if that waste is a hazardous waste.

14. TRANSPORT INFORMATION

DOT SHIPPING INFORMATION
DOT Proper Shipping Name: Other regulated substances, liquid, N.O.S. (contains Hexamethylene- 1,6-Diisocyanate)
DOT Technical Name: N/A
DOT Hazard Class: 9 **Hazard Subclass:** N.A.
DOT I.D. Number: UN3082 **Packing Group:** III
Additional Transportation Information: When in individual containers of less than the Product RQ, this material ships as non-regulated. RQ: 15119kg (33332lb)
IMDG
Technical Name: OTHER REGULATED SUBSTANCES, LIQUID, N.O.S. (contains Hexamethylene- 1,6-Diisocyanate)
Hazard Class: 9 **Hazard Subclass:** N.A.
I.D. Number: UN3082 **Packing Group:** III
INTERNATIONAL REGULATIONS:
CANADIAN WHMIS: This MSDS has been prepared in compliance with the hazard criteria of the Controlled Product Regulations and the MSDS contains the information required by those regulations.

CANADIAN WHMIS CLASS: E  D2A 

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS AS FOLLOWS-
OSHA Hazard Communication Standard (29 CFR 1910.1200): Hazardous by definition of Hazard Communication Standard.
Sensitizer. Corrosive.
CERCLA/ Super Fund (40 CFR 117, 302): Hexamethylene-1, 6-Diisocyanate CAS#: 822-06-0 Reportable Quantity: 100lbs
CERCLA - SARA HAZARD CATEGORY:
This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:
Immediate Health Hazard (Acute) Delayed Health Hazard (Chronic)
SARA Toxic Chemicals (40 CFR 372):
This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:
Hexamethylene-1,6-Diisocyanate CAS#: 822-06-0 Reportable Quantity: 100lbs
TOXIC SUBSTANCES CONTROL ACT: All chemicals in this compound are listed on the TSCA
NEW JERSEY RIGHT-TO-KNOW:

Chemical Name	CAS Number	Weight Percent
Hexamethylene-1,6-Diisocyanate	822-06-0	0.1-0.3%
Homopolymer of Hexamethylene Diisocyanate	28182-81-2	≥95%

PENNSYLVANIA RIGHT-TO-KNOW / MASSACHUSETTS RIGHT-TO-KNOW:

Chemical Name	CAS Number	Weight Percent
Homopolymer of Hexamethylene Diisocyanate	28182-81-2	≥95%

California Proposition 65: To the best of our knowledge, this product does not contain any chemical(s) regulated under California Proposition 65.

16. OTHER INFORMATION

THE INFORMATION HEREIN HAS BEEN COMPILED FROM SOURCES BELIEVED TO BE RELIABLE AND IS ACCURATE TO THE BEST OF OUR KNOWLEDGE. HOWEVER, POLYMER NATION CHEMICAL CANNOT GIVE ANY GUARANTEES REGARDING INFORMATION FROM OTHER SOURCES, AND EXPRESSLY DOES NOT MAKE ANY WARRANTIES, NOR ASSUMES ANY LIABILITY FOR ITS USE.