

TECHNICAL & SAFETY DATA SHEET

Technical Data Sheet

SP-24 Flexible Aliphatic Urethane Wear Surface

POLYMER NATION CHEMICAL COMPANY, LLC



Product Overview: SP-24 is a flexible aliphatic urethane designed to provide a semi-flexible wear surface as part of a traffic coating system or waterproofing floor system. It is easy to install, has little odor and provides a UV stable, tough, abrasion and chemical resistant topcoat.

Uses: SP-24 is primarily used as an intermediate and topcoat in parking deck and waterproofing applications. It can also be used as a binder for floor applications that require more resiliency than epoxy floors typically can provide.

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
Kit Yield in Gallons	5	A 1 mix kit consists of 3.95 gal A and 1.05 gal B
Number of Components	2	
Mix Ratio Liquids by Volume	Not Provided	Do not split kits.
Ideal Application Temperatures	60F-90F	Verify that substrate temperature is above 5 degrees of dewpoint during application and cure of material to avoid a potential amine blush
Mixed Viscosity in cP@25C/77F	1800	Warmer temperatures will reduce viscosity and lower temperatures will increase viscosity
Gel Time	30 min.	Warmer temperatures will decrease gel time and lower temperatures will increase gel time
Dry to Touch	2.5 Hours	Warmer temperatures will reduce time and colder temperatures will increase time
Through Dry	4 Hours	Warmer temperatures will reduce time and colder temperatures will increase time
Dry to Walk	24 Hours	Warmer temperatures will reduce time and colder temperatures will increase time
Dry to Lightly Use	Hours	Warmer temperatures will reduce time and colder temperatures will increase time
Full Cure	7 Days	Warmer temperatures will reduce time and colder temperatures will increase time
Shore Hardness at 24 hours	D 25	Warmer temperatures will increase hardness
Shore Hardness at 7 days	D 45	Warmer temperatures will shorten time to reach full hardness
Gloss @ 60 Degree Angle	75-80	Applying material close to dew point will decrease gloss and may result in an amine blush
VOC's of Mixed Material	<21 g/L	EPA Method 24
Color Scale per ASTM D1500	N/A	
Solids by Volume Mixed	100%	
Storage	60F-90F	Store material between 60-90 degrees F in a protected dry location.
Odor	Very Subtle	
Application Thickness in Mills	As an intermediate or topcoat 15-25	
Disposal	Dispose of material, containers, solvents, etc., per Federal, State and local guideline, rules and laws	
Available Colors	Light Gray, Dark Gray, Tan, Black	
Mixing & Installation	Combine all of part A and B into a single container, large enough to accept the entire kit. Mix at 350 RPM for 2-3 minutes using an appropriate mixing blade and making sure not to introduce excessive air into the solution. Pour the entire content from the container onto the floor and follow normal squeegee and back roll or cut and roller techniques. Recoat within 24 hours. Clean tools with a solvent similar to Xylene or Acetone.	

Polymer Nation believes the information contained herein to be true and accurate. Information contained herein is for evaluation purposes only. Polymer Nation makes no warranty, express or implied based upon this literature and assumes no liability or responsibility for consequential or incidental damages as a result of the use of these products and systems described herein, including any warranty of merchantability or fitness. Last Rev. 4.14.22

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Chemical	Results
Acetic Acid 10%	+
Acetic Acid 50%	-
Acetone	-
Anti-Freeze	+
Bleach	+
Brake Fluid	-
Caustic Soda	+
Gasoline	-
Hydraulic Fluid	+
Hydrochloric Acid - - 10%	+
Hydrochloric Acid - - 31%	-
Jet Fuel	+
Methanol	-
Mineral Spirits	+
Motor Oil	+
Phosphoric Acid 50%	-
Phosphoric Acid 70%	-
Potassium Hydroxide 50%	+
Simple Green	+
Skydrol	-
Sodium Hydroxide 50%	+
Sulfuric Acid 25%	-
Sulfuric Acid 50%	-

(-) --> Visual Defects Observed

(+) --> No Visual Defects Observed

Above figures are guide values and should not be used as a base for specifications

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DATE ISSUED:	8/22/22
MSDS REF. No:	SP-24 Part A

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: SP-24 Part A
PRODUCT CODE: SP-24 A

Revision Date: August 2, 2022

Supplier Details: Polymer Nation Chemical Company, LLC
1949 Swanson Court
Gurnee, IL 60031

Contact: Senior Chemist
Phone: 847-774-2592
Fax: 847-362-5149
Email: info@primecoat.com
Internet: primecoat.com

Transportation emergency phone number: CHEMTREC, U.S.: (800) 424-9300 24 hours

2. HAZARDS IDENTIFICATION

Classification of Substance

GHS Classification in Accordance with 29 CFR 1910 (OSHA HCS):

No GHS Classifications Indicated

GHS Label Elements, Including Precautionary Statements GHS Signal Word: **NONE**

GHS Hazard Pictograms: No GHS pictograms indicated for this product

GHS Hazard Statements: No GHS hazards statements indicated

GHS Precautionary Statements: No GHS precautionary statements indicated

Hazards not Otherwise Classified (HNOC) or not Covered by GHS

The product is not classified according to the Globally Harmonized System (GHS).

The product is not classified according to the CLP regulation.

H226 Flammable liquid and vapor

H304 May be fatal if swallowed and enters airways

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Ingredients

CAS #	%	Chemical Name
7631-86-9	25-50%	Silica
770-35-4	<10%	2-Propanol, 1-phenoxy-
64742-95-6	<10%	Solvent naphtha, petroleum, light arom.
13463-67-7	<10%	Titanium dioxide
1317-61-9	<10%	Iron oxide (Fe3O4)
50-00-0	<0.1%	Formaldehyde
71-43-2	<0.01%	Benzene

4. FIRST AID MEASURES

General information: No special measures required.

After inhalation: Supply fresh air; consult doctor in case of complaints.

After skin contact: Clean with water and soap. If skin irritation continues, consult a doctor.

After eye contact: Remove contact lenses if worn. Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing: Rinse out mouth and then drink plenty of water. Do not induce vomiting; call for medical help immediately.

Most important symptoms and effects, both acute and delayed: Gastric or intestinal disorders dizziness, headache.

Hazards: No further relevant information available.

Indication of any immediate medical attention and special treatment needed: Treat skin and mucous membrane with antihistamine and corticoid preparations.

5. FIRE FIGHTING MEASURES

Flash Point: >500 °F / >260 °C

Suitable extinguishing agents: CO₂, powder, or water spray. Fight larger fires with water spray or alcohol resistant foam.

For safety reasons unsuitable extinguishing agents: None.

Special hazards arising from the substance or mixture: In case of fire, the following can be released: Carbon monoxide (CO). Under certain fire conditions, traces of other toxic gases cannot be excluded.

Advice for firefighters: Protective equipment - Wear self-contained respiratory protective device. Wear fully protective suit.

Additional information: Cool endangered receptacles with water fog or haze.

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6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures: Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation.

Environmental precautions: Do not allow to enter sewers / surface or ground water.

Methods and material for containment and cleaning up: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Dispose contaminated material as waste.

7. HANDLING AND STORAGE

Handling Precautions: Ensure good ventilation/exhaustion at the workplace. Prevent formation of aerosols. Information about fire - and explosion protection: No special measures required.

Storage Requirements: Requirements to be met by storerooms and receptacles: Avoid storage near extreme heat, ignition sources or open flame. Store in a cool location. Information about storage in one common storage facility: Store away from foodstuffs. Do not store together with oxidizing and acidic materials.

Further information about storage conditions: Store in cool, dry conditions in well-sealed receptacles. Keep container tightly sealed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Ensure good ventilation/exhaustion at the workplace. Prevent formation of aerosols. Ensure compliance with all relevant OSHA regulations.

Personal Protective Equipment

General protective and hygienic measures: Keep away from foodstuffs, beverages, and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

Respiratory protection: Use suitable respiratory protective device in case of insufficient ventilation. Use suitable respiratory protective device when aerosol or mist is formed.

Protection of hands: Protective gloves. The glove material must be impermeable and resistant to the product / the substance / the preparation.

Glove Material: Due to missing tests, no recommendation to the glove material can be provided for the product / the preparation / the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material: The exact break through time must be found by contacting the manufacturer of the protective gloves and must be observed.

Eye protection: Safety glasses.

Body protection: Protective work clothing.

Limitation and supervision of exposure into the environment: No further relevant information available.

Risk management measures: No further relevant information available.

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Pigmented Liquid	Volatile Organic Compound:	33 g/L
Physical State:	Liquid	Autoignition Temperature:	>500 °F / >260 °C

10. STABILITY AND REACTIVITY

Chemical Stability: No decomposition if used and stored according to specifications.

Conditions to Avoid: Store away from oxidizing agents. Keep away from heat and direct sunlight.

Materials to Avoid – Hazardous: Reacts with strong acids and alkali.

Decomposition – Hazardous: Hydrocarbons; carbon monoxide and carbon dioxide; toxic metal oxide smoke.

Polymerization – Hazardous: Will not occur.

11. TOXICOLOGICAL INFORMATION

LD/LC50 values relevant for classification: 64742-95-6 Solvent naphtha (petroleum), light aroma.

Oral LD50 >6800 mg/kg (rat) Dermal LD50 >3400 mg/kg (rat) Inhalative LC50/4 h >10,2 mg/l (rat)

Primary irritant effect: 1). **On the skin:** Slight irritant effect on skin and mucous membranes; 2). **On the eye:** Slight irritant effect on eyes.

Sensitization: No sensitizing effects known.

Additional toxicological information: The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version: Harmful.

12. ECOLOGICAL INFORMATION

Aquatic toxicity: No further relevant information available.

Persistence and degradability: The product is partially biodegradable. Significant residuals remain.

Bioaccumulative potential: No further relevant information available.

Mobility in soil: No further relevant information available.

Ecotoxicological effects: Remark: Due to mechanical actions of the product (e.g., agglutinations) damages may occur.

Additional ecological information | General notes: This statement was deduced from products with a similar structure or composition. The product contains heavy metals. Avoid transfer into the environment. Specific preliminary treatments are necessary. Due to available data on eliminability / decomposition and bioaccumulation potential prolonged term damage of the environment cannot be excluded. Water hazard class

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1 (German Regulation) (Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water course, or sewage system.

Results of PBT and vPvB assessment PBT: Not applicable.

Other adverse effects: No further relevant information available.

13. DISPOSAL CONSIDERATIONS

Recommendation: Must not be disposed together with household garbage. Do not allow product to reach sewage system. Can be burned with household garbage after consulting with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations. Can be disposed of with household garbage after solidification following consultation with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations.

Uncleaned Packaging: Recommendation: Disposal must be made according to official regulations.

14. TRANSPORT INFORMATION

DOT Shipping Information

DOT Proper Shipping Name:	N/A – not DOT regulated		
DOT Technical Name:	N/A		
DOT Hazard Class	N/A	Hazard Subclass:	N/A
DOT ID Number:	N/A	Packing Group	N/A

IMDG Shipping Information

Technical Name:	Polyester Resin Based Coating		
Hazard Class:	N/A	Hazard Subclass:	N/A
ID Number:	N/A	Packing Group:	N/A
Special Marking:	N/A		

IATA Shipping Information

Technical Name:	Polyester Resin Based Coating		
Hazard Class:	N/A	Hazard Subclass:	N/A
ID Number:	N/A	Packing Group:	N/A
Special Marking:	N/A		

ADR Shipping Information

Technical Name:	Polyester Resin Based Coating		
Hazard Class:	N/A	Hazard Subclass:	N/A
ID Number:	N/A	Packing Group:	N/A
Special Marking:	N/A		

Environmental Hazards: Not applicable.

Special Precautions for User: Not applicable.

Danger Code (Kemler): Not applicable

EMS Number: Not applicable

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable

15. REGULATORY INFORMATION

Component (CAS#) [%] - CODES

Silica (7631-86-9) [25-50%] MASS, NJHS, PA, TSCA

2-Propanol, 1-phenoxy- (770-35-4) [<10%] TSCA

Solvent naphtha, petroleum, light aroma. (64742-95-6) [<10%]

TSCA Titanium dioxide (13463-67-7) [<10%] MASS, OSHAWAC, PA,

TSCA, TXAIR Iron oxide (Fe3O4) (1317-61-9) [<10%] TSCA

Formaldehyde (50-00-0) [<0.1%] CERCLA, CSWHS, EHS302, EPCRAWPC, GADSL, HAP, MASS, NJEHS, NJHS, NRC,

OSHAHTS, OSHAPSM, PA, PROP65, SARA313, TOXICRCA, TSCA, TXAIR, TXHWL

Benzene (71-43-2) [<0.01%] CERCLA, CSWHS, EPCRAWPC, GADSL, HAP, HWRCRA, MASS, NJHS, NRC, OSHAHTS,

OSHAHTS, OSHAWAC, PA, PRIPOL, PROP65, SARA313, TOXICPOL, TOXICRCA, TSCA, TXAIR, TXHWL

This product can expose you to chemicals including Formaldehyde (gas), which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.



WARNING

This product can expose you to chemicals including Benzene, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Regulatory CODE Descriptions

MASS = MA Massachusetts Hazardous Substances List

NJHS = NJ Right-to-Know Hazardous Substances

PA = PA Right-To-Know List of Hazardous Substances

TSCA = Toxic Substances Control Act

OSHAHTS = OSHA Workplace Air Contaminants

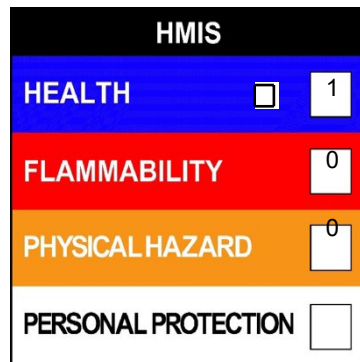
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TXAIR = TX Air Contaminants with Health Effects Screening Level
CERCLA = Superfund Cleanup Substances
CSWHS = Clean Water Act Hazardous Substances
EHS302 = Extremely Hazardous Substance
EPCRAWPC = EPCRA Water Priority Chemicals
GADSL = Global Automotive Declarable Substance List
(GADSL) HAP = Hazardous Air Pollutants
NJEHS = NJ Extraordinarily Hazardous Substances
NRC = Nationally Recognized Carcinogens
OSHAHTS = OSHA Hazardous and Toxic Substances
OSHAPSM = OSHA Chemicals Requiring Process Safety Management
PROP65 = CA Prop 65
SARA313 = SARA 313 Title III Toxic Chemicals
TOXICRCRA = RCRA Toxic Hazardous Wastes (U-List)
TXHWL = TX Hazardous Waste List
HWRRCRA = RCRA Hazardous Wastes
PRIPOL = Clean Water Act Priority Pollutants
TOXICPOL = Clean Water Act Toxic Pollutants

16. OTHER INFORMATION

NFPA: Health = 1, Fire Hazard = 0, Reactivity = 0, Specific Hazard = N/A

HMIS III: Health = 1, Flammability = 0, Physical Hazard = 0, Personal Protection = N/A,



This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases

H226 Flammable liquid and vapor.

H304 May be fatal if swallowed and enters airways.

R10 Flammable.

R65 Harmful: may cause lung damage if swallowed.

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

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DATE ISSUED:	8/22/22
MSDS REF. No:	SP-24 Part B

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: SP-24 Part B
PRODUCT CODE: SP-24 B
Revision Date: August 3, 2022

Supplier Details: Polymer Nation Chemical Company, LLC
1949 Swanson Court
Gurnee, IL 60031

Contact: Senior Chemist
Phone: 847-774-2592
Fax: 847-362-5149
Email: info@primecoat.com
Internet: primecoat.com

Transportation emergency phone number: CHEMTREC, U.S.: (800) 424-9300 24 hours

2. HAZARDS IDENTIFICATION

Classification of Substance

GHS Classification in Accordance with 29 CFR 1910 (OSHA HCS):

Health, Serious Eye Damage/Eye Irritation, 2 A
Health, Acute toxicity, 3 Inhalation
Health, Specific target organ toxicity - Single exposure, 3
Health, Skin corrosion/irritation, 2
Health, Skin sensitization, 1
Health, Respiratory or skin sensitization, 1 Respiratory

GHS Label Elements, Including Precautionary Statements

GHS Signal Word: **DANGER**

GHS Hazard Pictograms:



GHS Hazard Statements:

H319 - Causes serious eye irritation
H331 - Toxic if inhaled
H335 - May cause respiratory irritation
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

GHS Precautionary Statements:

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 - Wash hands thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P280b - Wear protective gloves/eye protection/face protection.
P285 - In case of inadequate ventilation wear respiratory protection.
P302 + P352 - IF ON SKIN: Wash with plenty of water/soap.
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313 - If eye irritation persists: Get medical advice/attention.
P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container to approved waste disposal.

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3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Ingredients		
CAS #	%	Chemical Name
5124-30-1	<50%	Cyclohexane, 1,1"-methylenebis [4-isocyanato-
28182-81-2	<50%	Hexane, 1,6-diisocyanato-, homopolymer
64742-95-6	<2.5%	Aromatic hydrocarbon
95-63-6	<2%	1,2,4-Trimethylbenzene
1330-20-7	<0.2%	Benzene, dimethyl-
822-06-0	<1%	Hexamethylene diisocyanate
108-67-8	<1%	1,3,5-Trimethylbenzene
71-43-2	<0.05%	Benzene
108-88-3	<1%	Toluene

4. FIRST AID MEASURES

General information: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

After Inhalation: Supply fresh air. In case of irregular breathing or respiratory arrest, provide artificial respiration. Seek immediate medical advice.

After skin contact: Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

After eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

After swallowing: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed: The most important known symptoms and effects are described in the labelling (see Section 2) and / or in Section 11.

5. FIRE FIGHTING MEASURES

Flash Point: 104 °C (219.2 °F) @ 1,013.25 hPa

Suitable extinguishing agents: Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

For safety reasons unsuitable extinguishing agents: None

Special hazards arising from the substance or mixture - no data available.

6. ACCIDENTAL RELEASE MEASURES

Advice for firefighters: Wear self-contained breathing apparatus for firefighting if necessary. Use respiratory protective device against the effects of fumes / dust / aerosol. Isolate area and prevent access. Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation. Protect from heat.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up: Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling Precautions: Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Open and handle receptacle with care.

Storage Requirements: Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Moisture sensitive. Storage class (TRGS 510); Non-combustible; acute toxic Cat 1 and 2 / very toxic hazardous materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Educate and train employees in safe use of this product. Follow all label instructions. Local exhaust should be used to maintain levels below the TLV whenever this product is processed, heated or spray applied. For spray applications, an air-supplied respirator must be worn. All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94). Educate and train employees in safe use of this product. Air-supplied respirator must be worn.

Personal Protective Equipment:

General protective and hygienic measures:

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Protection of hands: Handle with gloves. Gloves must be inspected prior use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Glove material: The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material: 1). Full Contact | Material – Nitrile rubber, minimum layer thickness 0.4mm, break through time 480 minutes, material tested Camatril®. 2). Splash Contact | Material – Nitrile rubber, minimum layer thickness 0.4mm, break through time 480 minutes, material tested Camatril®. If used in solution or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection: Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government

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standards such as NIOSH (US) or EN 166 (EU).

Body protection: Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Limitation and supervision of exposure into the environment: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Risk management measures: Organization measures should be in place for all activities involving this product.

REL (USA) Short-term value: C 0.14* mg/m³, C 0.02* ppm / Long-term value: 0.035 mg/m³, 0.005 ppm *10-min / TLV 0.034 mg/m³, 0.005 ppm

EL (Canada)

DNELs

PNECS

Dicyclohexylmethane-4,4'-di-isocyanate 5124-30-1

TWA 0.0050 ppm USA. ACGIH Threshold Limit Values (TLV) Remarks Lower Respiratory Tract Irritation Respiratory sensitization

C 0.01 ppm 0.11 mg/m³ USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 Skin notation

C 0.01 ppm 0.11 mg/m³ USA. NIOSH Recommended Exposure Limits

Hexamethylene-di-isocyanate 822-06-0

REL Short-term value: C 0.14* mg/m³, C 0.02* ppm

Long-term value: 0.035 mg/m³, 0.005 ppm *10-min

TLV 0.034 mg/m³, 0.005 ppm

Hexamethylene diisocyanate, oligomers 28182-81-2

C 1 mg/m³

TLV (Threshold Limit Value established by ACGIH)

822-06-0 hexamethylene-di-isocyanate 0.005 ppm

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance / Physical State: Colorless Liquid

10. STABILITY AND REACTIVITY

Chemical Stability: The product is stable and non-reactive under normal conditions of use, storage, and transport. Reacts with water. No decomposition if used and stored according to specifications.

Conditions to Avoid: Keep ignition sources away – do not smoke. Moisture. Keep away from heat and direct sunlight. Store away from oxidizing agents.

Materials to Avoid: Reacts with water. Reacts with oxidizing agents. Reacts with alkali, amines, and strong acids. Contact with acids releases toxic gases. Reacts with peroxides and other radical forming substances. Reacts with certain metals.

Decomposition – Hazardous: Carbon monoxide and carbon dioxide. Nitrogen oxides (NOx). Hydrogen cyanide (prussic acid). Poisonous gases / vapors.

Polymerization – Hazardous: Reacts with water.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Skin Contact | Inhalation | Eye Contact | Ingestion Health

Acute effects and symptoms: Isocyanate 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 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. Causes skin 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. May cause eye irritation with symptoms of reddening, tearing, stinging, and swelling. Vapor or aerosol may cause skin irritation with symptoms of burning and tearing. May cause irritation of the digestive tract. Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

Chronic effects and symptoms: As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to isocyanates (asthma or asthma-like symptoms) that may cause them to react to a later exposure to isocyanates 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 immediate or 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. Prolonged contact with skin can cause reddening, swelling, rash, and, in some cases, skin sensitization. Animal tests and other research indicate that skin contact with isocyanates can play a role in causing isocyanate sensitization and respiratory reaction. This data reinforces the need to prevent direct skin contact with isocyanates. Prolonged vapor contact with eyes may cause conjunctivitis. Delayed symptoms affecting the respiratory tract can also occur several hours after overexposure.

Toxicity Data for NB# 54369-B-2. Data on the product is not available. Please find the data available for the components.

Acute Oral Toxicity: Acute toxicity estimate: >5,000 mg/kg (Calculation method)

Acute Inhalation Toxicity: Acute toxicity estimate: 0.69 mg/l, 4 h, dust/mist (Calculation method) Toxicity Data for: Dicyclohexylmethane-4,4'-Diisocyanate

Acute Oral Toxicity: LD50: 18,200 mg/kg (rat, male/female)

Inhalation Toxicity: LC50: 0.434 mg/l, 4 h, dust/mist (rat, male/female) (OECD Test Guideline 403)

Acute Dermal Toxicity: LD50: > 7,000 mg/kg (rat, male/female) (OECD Test Guideline 402)

Skin Irritation: Rabbit, OECD Test Guideline 404, irritating

Eye Irritation: Rabbit, OECD Test Guideline 405, slight irritant

TECHNICAL & SAFETY DATA SHEET

Sensitization inhalation: sensitizer (Guinea pig)

Dermal: sensitizer (Mouse, Mouse ear swelling test)

Skin sensitization according to Magnusson/Kligmann (maximizing test): positive (Guinea pig, OECD Test Guideline 406)

Dermal: sensitizer (Human)

Repeated Dose Toxicity

13 w, Inhalative: NOAEL: 3 mg/m³, (rat, male/female, 6 hours a day, 5 days a week) Evidence of damage to organs other than the organs of respiration was not found. Mutagenicity

Genetic Toxicity in Vitro:

Salmonella/microsome test (Ames test): No indication of mutagenic effects. (Metabolic Activation: with/without)

In vitro mammalian cell gene mutation test: negative (Chinese hamster V79 cell line, Metabolic Activation: with/without)

Chromosome aberration test in vitro: negative (Chinese hamster V79 cell line, Metabolic Activation: with/without) Toxicity to Reproduction/Fertility

Inhalative, 6 hours/day 7 days/week, (rat, male/female) NOAEL (parental): 1 mg/m³,

Developmental Toxicity/Teratogenicity

rat, female, Inhalative, 6 hours/day 7 days/week, NOAEL (teratogenicity): 6 mg/m³, NOAEL (maternal): 1 mg/m³ Did not show teratogenic effects in animal experiments.

Toxicity Data for: Homopolymer of Hexamethylene Diisocyanate Toxicity

Note

Data is based on a similar product, including residual monomer.

Acute Oral Toxicity

LD50: > 5,000 mg/kg (rat, female) (OECD Test Guideline 423)

Acute Inhalation Toxicity

LC50: 0.554 mg/l, 4 h, dust/mist (rat)

The test atmosphere generated in the animal study is not representative of workplace environments, how the substance is placed on the market, and how it can reasonably be expected to be used. Therefore, the test result cannot be directly applied for the purpose of assessing hazard. Based on expert judgment and the weight of the evidence, a modified classification for acute inhalation toxicity is justified.

Acute Dermal Toxicity

LD50: > 2,000 mg/kg (rat, female) (OECD Test Guideline 402)

Skin Irritation rabbit,

slight irritant Eye

Irritation rabbit, slight

irritant Sensitization

Skin sensitization according to Magnusson/Kligmann (maximizing test): positive (Guinea pig, OECD Test Guideline 406) Repeated

Dose Toxicity

Subchronic inhalation toxicity, rat:

Test concentration - 0,4 ; 3,4 and 21,0 mg aerosol/m³ exposure time - 13 weeks (6 hours a day, 5 days a week) 3,4 mg/m³ was tolerated without damage (NOEL), 21,0 mg/m³ caused increase of lung weight. No evidence of histopathological changes in the upper and central respiratory passages. Unspecific changes in the lower respiratory tract; these are attributed to the product's primary irritation potential. Evidence of damage to organs other than the organs of respiration was not found.

Mutagenicity

Genetic Toxicity in Vitro:

Salmonella/microsome test (Ames test): No indication of mutagenic effects. Genetic

Toxicity in Vivo:

Micronucleus test: negative (Mouse) negative

Toxicity Data for: Petroleum Solvent

Acute Oral Toxicity

LD50: > 5,000 mg/kg (rat, male/female) (OECD Test Guideline 401) Acute

Dermal Toxicity

LD50: > 2,000 mg/kg (rabbit, male/female) (OECD Test Guideline 402)

Skin Irritation

rabbit, Draize, Exposure Time: 24 h, Slightly irritating Eye

Irritation

rabbit, Draize, Exposure Time: 24 h, Slightly irritating

non-irritating

Sensitization

dermal: non-sensitizer (Guinea pig, Maximization Test)

dermal: non-sensitizer (Human, Other method)

Repeated Dose Toxicity

90 D, Inhalation: NOAEL: 6.6 mg/l, (rat)

Chronic exposure damages the brain and the central nervous system. 14

D, dermal: NOAEL: 3,750 mg/kg, (rabbit)

Chronic exposure damages the brain and the central nervous system.

Mutagenicity

Genetic Toxicity in Vitro:

Ames: negative (Salmonella typhimurium, Metabolic Activation: with/without)

Carcinogenicity

Mouse, male, dermal, 2 Y negative rat, Male/Female, inhalation, 109 w, 6 hrs/day 7 days/week positive

TECHNICAL & SAFETY DATA SHEET

Kidney carcinomas were found in male rats only at all dose levels.

Toxicity to Reproduction/Fertility

Two generation study, inhalation, 6 hrs/day 7 days/week, (rat, Male/Female) NOAEL (F1): 500 ppm, NOAEL (F2): 500 ppm No effects on Reproductive parameters observed at doses tested. Three generation study, inhalation, 6 hrs/day 7 days/week, (rat, Male/Female) No effects on Reproductive parameters observed at doses tested.

Developmental Toxicity/Teratogenicity

rat, female, inhalation, NOAEL (teratogenicity): > 1,573 ppm, No Teratogenic effects observed at doses tested. Rat, Female, inhalation, GD6-GD19, 6 hours/day, NOAEL (teratogenicity): 23.9 mg/l, NOAEL (maternal): 23.9 mg/l,

Other Relevant Toxicity Information May cause drowsiness or dizziness.

Toxicity Data for: Hexamethylene-1,6-Diisocyanate Acute Oral Toxicity

LD50: 746 mg/kg (rat, male) (OECD Test Guideline 401) LD50: 959 mg/kg (rat, male) (OECD Test Guideline 401) Acute Inhalation Toxicity

LC50: 0.124 mg/l, 4 h, vapor (rat, male/female) (OECD Test Guideline 403) Acute Dermal Toxicity

LD50: > 7,000 mg/kg (rat, male/female) (OECD Test Guideline 402)

Skin Irritation

rabbit, OECD Test Guideline 404, Corrosive Eye Irritation

rabbit, OECD Test Guideline 405, Corrosive Sensitization

dermal: sensitizer (Guinea pig, Maximization Test) dermal: sensitizer (Human, Case Report) Respiratory sensitization: sensitizer (Guinea pig) Repeated

Dose Toxicity

2 years, inhalation: NOAEL: 0.005 ppm, (rat, Male/Female, 6 hrs/day 5 days/week)

Irritation to lungs and nasal cavity.

Mutagenicity

Genetic Toxicity in Vitro:

Salmonella/microsome test (Ames test): negative (Salmonella typhimurium, Metabolic Activation: with/without) Point mutation in mammalian cells (HPRT test): negative (Metabolic Activation: with/without)

Genetic Toxicity in Vivo:

Micronucleus test: negative (Mouse, male/female, Inhalative) negative

Carcinogenicity

rat, male/female, Inhalative, 2 yrs, 6 hours/day, 5 days/week Did not show carcinogenic effects in animal experiments. Toxicity

to Reproduction/Fertility

Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test, Inhalative, 6 hours/day 7 days/week, (rat, male/female) NOAEL (F2): 0.3 ppm Fertility and developmental toxicity tests did not reveal any effect on reproduction.

Developmental Toxicity/Teratogenicity

rat, female, Inhalative, 6 hours/day (Exposure duration: day 0 - 19 of gestation), NOAEL (teratogenicity): 0.3 ppm, NOAEL (maternal): 0.005 ppm Did not show teratogenic effects in animal experiments.

Neurological Effects

Rats exposed by inhalation, 6 hours/day, for approximately 3 weeks, to concentrations as high as 0.3 ppm showed no neurobehavioral effects or damage to nerve tissues.

Toxicity Data for: 1,2,4-Trimethylbenzene Acute

Oral Toxicity LD50: > 5,000 mg/kg (rat) Acute

Inhalation Toxicity

LC50: 18 mg/l, 18,000, 4 h, vapor (rat) Acute

Dermal Toxicity

LD50: > 3,160 mg/kg (rabbit)

Skin Irritation

rabbit, moderately irritating Eye

Irritation

rat, slightly irritating

Sensitization

dermal: non-sensitizer (Guinea pig, Maximization Test)

Skin sensitization according to Magnusson/Kligmann (maximizing test): negative (Guinea pig)

Repeated Dose Toxicity

20 Days, inhalation: NOAEL: < 100 ppm, (rat,)

CNS depression.

28 Days, oral: NOAEL: < 500 mg/kg, (rat,) Changes

in: kidney

3 months, inhalation: NOAEL: 1230 mg/m³, (rat, male/female, 6 hrs/day 5 days/week)

Mutagenicity

Genetic Toxicity in Vitro:

Ames: negative (Salmonella typhimurium, Metabolic Activation: with/without)

Genetic Toxicity in Vivo:

Sister Chromatid Exchange: (Mouse,)

Positive and negative results were seen in various in vivo studies.

Cytogenetic assay: (Rat,)

negative

Micronucleus Assay: negative (Mouse, Male/Female, intraperitoneal)

negative

Developmental Toxicity/Teratogenicity

TECHNICAL & SAFETY DATA SHEET

rat, female, inhalation, daily, NOAEL (teratogenicity): 0.19%, No Teratogenic effects observed at doses tested. No fetotoxicity observed at doses tested.

Other Relevant Toxicity Information May cause irritation of respiratory tract.

May be fatal if swallowed and enters airways.

Toxicity Data for: 1,3,5-Trimethylbenzene Acute

Oral Toxicity

LD50: 6,000 mg/kg (rat) Acute Inhalation Toxicity

LC50: 24 mg/l, 24,000, 4 h, vapor (rat)

Acute Dermal Toxicity

LD50: > 2,000 mg/kg (rat, male/female)

Skin Irritation

rabbit, Draize Test, Exposure Time: 24 h, Moderately irritating Eye

Irritation

rabbit, Draize, Mild eye irritation

Repeated Dose Toxicity

4 months, inhalation: NOAEL: < 1700 ppm, (Rat,)

Reduced body weight gain. Changes in blood parameters depression. 90

Days, oral: LOAEL: 54 gm/kg, (rat,)

Changes in liver

90 Days, oral: NOAEL: 600 mg/kg, (rat,)

Mutagenicity

Genetic Toxicity in Vitro:

Ames: negative (Salmonella typhimurium, Metabolic Activation: with/without)

Genetic Toxicity in Vivo:

Micronucleus Assay: negative (Mouse, Male/Female, intraperitoneal)

negative

Developmental Toxicity/Teratogenicity

6 hours/day, daily, NOAEL (teratogenicity): 5900 mg/m³, NOAEL (maternal): 492 mg/m³ Other

Relevant Toxicity Information

May cause irritation of respiratory tract.

Carcinogenicity:

No carcinogenic substances as defined by IARC, NTP and/or OSHA

12. ECOLOGICAL INFORMATION

Aquatic toxicity: Toxicity to fish static test: LC50 – Danio rerio (zebra fish) – 1.2 mg/l – 96 h (OECD Test Guideline 203); toxicity to daphnia and other aquatic invertebrates static test: EC0 – Daphnia magna (water flea) - >=8.3 mg/l – 48 h; toxicity to algae static test: EC50 – Desmodesmus subspicatus (Scenedesmus subspicatus) - > 5 mg/l – 72 h; toxicity to bacteria: EC50 – Sludge Treatment – 191 mg/l – 3 h (OECD Test Guideline 209).

Persistence and degradability: Biodegradability aerobic – exposure time 28 d; result 0%. Not biodegradable.

Bioaccumulative potential: No data available.

Mobility in soil: No data available.

Ecotoxicological effects: No data available

Additional ecological information | General notes:

Results of PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required / conducted.

Other adverse effects: No data available.

13. DISPOSAL CONSIDERATIONS

Recommendation: Must not be disposed together with household garbage. Do not allow product to reach sewage system. After prior treatment, product must be disposed of in an incinerator for hazardous waste adhering to the regulations pertaining to the disposal of particularly hazardous waste.

Uncleaned Packaging: Recommendation: Disposal must be made according to official regulations.

14. TRANSPORT INFORMATION

DOT Shipping Information

DOT Proper Shipping Name:	Liquid, N.O.S. (contains Dicyclohexylmethane-4,4'-Diisocyanate)		
DOT Technical Name:	N/A		
DOT Hazard Class	9	Hazard Subclass:	N/A
DOT ID Number:	NA3082	Packing Group	III

IMDG Shipping Information

Technical Name:	N/A – Non-Regulated		
Hazard Class:	N/A	Hazard Subclass:	N/A
ID Number:	N/A	Packing Group:	N/A
Special Marking:	N/A		

IATA Shipping Information

TECHNICAL & SAFETY DATA SHEET

Technical Name:	Liquid, N.O.S. (contains Dicyclohexylmethane-4,4'-Diisocyanate)		
Hazard Class:	9	Hazard Subclass:	N/A
ID Number:	UN3334	Packing Group:	III
Special Marking:	Miscellaneous		

ADR Shipping Information

Technical Name:	N/A		
Hazard Class:	N/A	Hazard Subclass:	N/A
ID Number:	N/A	Packing Group:	N/A
Special Marking:	N/A		

Environmental Hazards:

Special Precautions for User:

Danger Code (Kemler):

EMS Number:

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

15. REGULATORY INFORMATION

Component (CAS#) [%] - CODES

Cyclohexane, 1,1"-methylenebis [4-isocyanato- (5124-30-1) [<50%] MASS, OSHAWAC, PA, SARA313, TSCA, TXAIR Hexane, 1,6-diisocyanato-, homopolymer (28182-81-2) [<50%] TSCA

Aromatic hydrocarbon (64742-95-6) [<2.5%] TSCA

1,2,4-Trimethylbenzene (95-63-6) [<2%] MASS, NJHS, PA, SARA313, TSCA, TXAIR

RQ (100LBS), Benzene, dimethyl- (1330-20-7) [<0.2%] CERCLA, CSWHS, EPCRAWPC, HAP, MASS, NJHS, OSHAWAC, PA, SARA313, TOXICRCRA, TSCA, TXAIR, TXHWL

RQ (100LBS), Hexamethylene diisocyanate (822-06-0) [<1%] CERCLA, HAP, MASS, SARA313, TSCA, TXAIR

1,3,5-Trimethylbenzene (108-67-8) [<1%] MASS, TSCA

Benzene (71-43-2) [<0.05%] CERCLA, CSWHS, EPCRAWPC, GADSL, HAP, HWRCRA, MASS, NJHS, NRC, OSHAHTS, OSHAWAC, PA, PRIPOL, PROP65, SARA313, TOXICPOL, TOXICRCRA, TSCA, TXAIR, TXHWL

RQ (1000LBS), Toluene (108-88-3) [<1%] CERCLA, CSWHS, EPCRAWPC, GADSL, HAP, MASS, NJHS, OSHAWAC, PA, PRIPOL, PROP65, SARA313, TOXICPOL, TOXICRCRA, TSCA, TXAIR, TXHWL



WARNING

This product can expose you to chemicals including Toluene, which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

This product can expose you to chemicals including Benzene, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, to go www.P65Warnings.ca.gov.

Regulatory CODE Descriptions

RQ = Reportable Quantity

MASS = MA Massachusetts Hazardous Substances List

OSHA WAC = OSHA Workplace Air Contaminants

PA = PA Right-To-Know List of Hazardous Substances

SARA313 = SARA 313 Title III Toxic Chemicals

TSCA = Toxic Substances Control Act

TXAIR = TX Air Contaminants with Health Effects Screening Level

NJHS = NJ Right-to-Know Hazardous Substances

CERCLA = Superfund Cleanup Substances

CSWHS = Clean Water Act Hazardous Substances

EPCRAWPC = EPCRA Water Priority Chemicals

HAP = Hazardous Air Pollutants

TOXICRCRA = RCRA Toxic Hazardous Wastes (U-List)

TXHWL = TX Hazardous Waste List

GADSL = Global Automotive Declarable Substance List (GADSL)

HWRCRA = RCRA Hazardous Wastes

NRC = Nationally Recognized Carcinogens

OSHAHTS = OSHA Hazardous and Toxic Substances

PRIPOL = Clean Water Act Priority Pollutants

PROP65 = CA Prop 65

TOXICPOL = Clean Water Act Toxic Pollutants

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, PRIME COAT CORPORATION CANNOT GIVE ANY GUARANTEES REGARDING INFORMATION FROM OTHER SOURCES, AND EXPRESSLY DOES NOT MAKE ANY WARRANTIES, NOR ASSUMES ANY LIABILITY FOR ITS USE.