

TECHNICAL & SAFETY DATA SHEET

Technical Data Sheet

F-41 Clear UV Resistant Epoxy Floor Coating

POLYMER NATION CHEMICAL COMPANY, LLC



Product Overview: F-41 consist of a low viscosity, nonylphenol-free, clear, UV resistant epoxy resin with our UV resistant, cycloaliphatic amine reactant. This combination achieves a UV resistant, clear epoxy with good flow and leveling, characteristics. The cured material has good broad-range chemical resistance as well as good abrasion and impact resistance.

Uses: F-41 is most often used as a clear topcoat for resinous concrete flooring projects that may experience higher UV exposure than is found in most interior environments.

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	3, 15 165	Special packaging is available based on size of order and time constraints
Number of Components	2	
Mix Ratio Liquids by Volume	2:1	It is always preferred to mix the entire kit, whenever possible, to avoid off-ratio mixtures
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	300	Warmer temperatures will reduce viscosity and lower temperatures will increase viscosity
Gel Time	32 min.	Warmer temperatures will decrease gel time and lower temperatures will increase gel time
Dry to Touch	4 Hours	Warmer temperatures will reduce time and colder temperatures will increase time
Through Dry	8 Hours	Warmer temperatures will reduce time and colder temperatures will increase time
Dry to Walk	12 Hours	Warmer temperatures will reduce time and colder temperatures will increase time
Dry to Lightly Use	24 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	D65	Warmer temperatures will increase hardness
Shore Hardness at 7 days	D78	Warmer temperatures will shorten time to reach full hardness
Gloss @ 60 Degree Angle	82-85	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
Solids by Volume Mixed	100%	
Storage	60F-90F	Store material between 60-90 degrees F in a protected dry location.
Odor	Subtle	Measuring odor offensiveness is difficult so experience with chemicals has been consulted here
Application Thickness in Mills	As a topcoat 10-16	
Disposal	Dispose of material, containers, solvents, etc., per Federal, State and local guideline, rules and laws	
Available Colors	Clear and Color Packs	

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 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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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

DATE PRINTED:	6/29/2023
MSDS REF. No:	E5

Product Name: F-41 Part A
Product Code: E5
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: 1/13/13 **REVISION DATE:** 2/12/2020

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

2. HAZARDS IDENTIFICATION

Acute Toxicity, Category 4

Aquatic Hazard (Long term) Category 3



SIGNAL WORD: Warning

Hazard-determining components of labeling: Trimethylolpropane Triacrylate

Hazard Statements

H317 May cause an allergic skin reaction

H302 Harmful if swallowed

H412 Harmful to aquatic life with long lasting effects

H335 May cause respiratory irritation

H371 May cause damage to organs – skin, eyes - not proven in humans, based on animal data

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:	H

* = denotes potential chronic or long-term effect

Potential Health Effects:

SKIN: Prolonged or repeated contact with this product may cause skin irritation with local redness and possible allergic reaction. Prolonged contact with material is unlikely to results in skin absorption of harmful amounts. If skin irritation or rash develops, seek medical advice/attention. Dermatitis.

EYES: May cause irritation.

INHALATION: Inhalation of vapors may cause irritation to upper respiratory tract and mucous membranes.

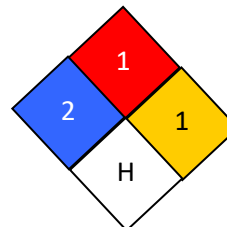
INGESTION: May cause gastrointestinal discomfort. May cause nausea and abdominal pain.

CHRONIC HAZARDS: This product contains no listed human carcinogens according to IARC, ACGIH, NTP and/or OSHA in concentrations of 0.1 percent or greater. No known teratological or reproductive effects.

3. COMPOSITION / INFORMATION OF 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.

NFPA CODES



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Chemical Name & CAS Number	Weight %	CAS Number
Bisphenol A Epoxy Resin	93%	25085-99-8
UV absorbers / light stabilizers	1-5%	Proprietary
Trade Secrets	6%	15625-89-5

4. FIRST AID MEASURES

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

EYES: DO NOT WEAR CONTACT LENSES WHILE WORKING WITH THIS PRODUCT. Hold eyelids apart, initiate and maintain gentle and continuous irrigation for at least 20 minutes. If irritation effects occur, consult a physician, preferably an ophthalmologist.

SKIN: Immediately remove contaminated clothing and any excess chemical with plenty of soap and water. Initiate and maintain gentle and continuous irrigation with plenty of water for at least 20 minutes. Seek medical attention if irritation persists. Wash clothing before reuse, if items cannot be decontaminated, discard them. These items may include leather articles such as shoes, belts, and watchbands.

INHALATION: Move to fresh air. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. Seek medical attention if breathing difficulty persists.

INGESTION: No immediate medical attention is necessary in small quantities. In larger quantities, contact a poison control center or bring the label / MSDS with the patient to seek medical care. Do not induce vomiting. If the person is conscious, give several glasses of water by mouth. Never give anything by mouth to an unconscious or convulsing person. If a person vomits while lying on his back, place him in the recovery position. To prevent aspiration of vomit, turn the victims head to the side.

5. FIRE FIGHTING METHODS

SUITABLE EXTINGUISHING MEDIA: Use water fog or fine spray, dry sand, dry chemical fire extinguishers, carbon dioxide fire extinguishers, or alcohol resistant foam.

For safety reasons, unsuitable extinguishing agents: Do not use a direct water stream as it may spread the fire.

SPECIAL FIRE & UNUSUAL HAZARDS: Water fog or fine spray may be used to cool containers exposed to fire and fire affected zone until fire is out. Fight fires from a safe distance.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS: Firefighters should wear butyl rubber boots, gloves, and body suit as well as a self-contained breathing apparatus.

ADDITIONAL INFORMATION: Remove all ignition sources. Water runoff can cause environmental damage. Dike and collect water used to fight fire. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

HAZARDOUS COMBUSTION PRODUCTS formed under fire conditions: Carbon oxides, nitrogen oxides. Phenolics.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe area. Ensure adequate ventilation.

Environmental precautions: Prevent further leaking if safe to do so. Flush area with water spray. Absorb spill with inert material (ex. dry sand or earth) and place in a chemical waste container for disposal. Avoid runoff into storm sewers and ditches which lead into waterways. Discharge into the environment must be avoided. If seepage into the environment has occurred, notify respective authorities. Remove residuals with soap and hot water or, in approved circumstances with trained personnel, with solvent.

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: Handle in a well-ventilated workspace. Avoid eye and skin contact. Do not breathe vapors.

STORAGE: Keep from freezing. Keep container closed when not in use. Keep container in a cool, well-ventilated place. Keep away from food, drink, and animal feed stuffs. Keep away from ignition sources and other incompatibilities. Store in original container or a container very similar to that of the original. Keep containers tightly closed and do not store near acids or amines. May partially freeze in cold temperatures, if this occurs, re-warm and homogenize. Store in light-resistant containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation: Good general ventilation should be sufficient to control airborne levels. Local exhaust ventilation may be necessary to control any air contaminants.

Exposure Limits: Trimethylolpropane Triacrylate AIHA WEEL TWA: 1mg/m³ 8 hours

Personal Protection Equipment:

Respiratory Protection: In poorly ventilated areas, a cartridge mask NIOSH approved for organic vapors is recommended. For emergency situations use self-contained breathing apparatus with pressure demand mode.

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Skin Protection: Where contact is likely, wear chemical resistant gloves, rubber boots, and chemical safety goggles. 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: Wear chemical safety glasses with side shields or goggles. In the event of an emergency, use eye goggles with a full-face shield. DO NOT WEAR CONTACT LENSES when working with this material!!

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

9. PHYSICAL & CHEMICAL PROPERTIES

Volatile Organic Content: 3.2 g/L	Solubility in Water: Insoluble
Color: Gardener Sale 1-2	Specific Gravity @ 20°C: 1.01
Odor: Faint Epoxy, slightly sweet	pH @ 100%: N.A.
Physical Appearance: Clear, viscous liquid	Melting/Freezing point: N/A
Boiling Point: N/A	Flashpoint: N/A
Ignition Temperature: N/A	Auto-ignition temperature: N/A
Explosion Limits:	Water solubility: Insoluble
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 & REACTIVITY

STABILITY: This product is stable under recommended and normal storage conditions.

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

INCOMPATIBILITY: Extreme heat. Amines. Acids. Strong Oxidizing Agents. Peroxides. Free Radical Initiators. Strong Bases. Reactive metals.

HAZARDOUS DECOMPOSITION PRODUCTS: Combustion products may include but are not limited to: Phenolics. Carbon Monoxide. Carbon Dioxide. Oxides of Nitrogen. Amines.

CONDITIONS TO AVOID: Open Flame / Sparks / Sources of ignition. Heat.

11. TOXICOLOGICAL INFORMATION

Component Toxicological Information: (Acute)

Likely routes of entry: Skin Contact, Skin absorption, Ingestion, Inhalation

4,4'-Isopropylidenediphenol-Epichlorohydrin Copolymer

LD50 Oral Rat 30,000 mg/kg
LD50 Dermal Rat >2,000 mg/kg

Not classified as a carcinogen by ACGIH, IARC or OSHA. Not listed by NTP.

1-Methoxy-2-Propanol Acetate

LD50 Oral Rat (female) 5,155 mg/kg
LD50 Dermal Rabbit >5,000mg/kg
LD50 Inhalation Rat >100 ppm

Not classified as a carcinogen by ACGIH, NTP, OSHA or IARC. The substance is known to cause human aspiration toxicity hazards or has to be regarded as if it causes human respiration toxicity hazard. Does not cause skin sensitization.

Neopentyl Glycol Diglycidyl Ether

LD50 Oral Rat >2000 mg/kg
LD50 Dermal Rabbit >2150 mg/kg

Not classified as a carcinogen by ACGIH, NTP, OSHA or IARC.

Trimethylolpropane Triacrylate

LD50 Oral Rabbit 5710 mg/kg
LD50 Dermal Rabbit 5170 mg/kg

Not classified as a carcinogen by ACGIH, NTP, OSHA or IARC.

Mutagenicity results for this compound are mixed. In the Ames test, it yielded a weakly positive response with metabolic activation and a negative response without metabolic activation. This compound was also positive in the mouse lymphoma

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assay but negative in the UDS assay. More recently, it yielded positive results in an in vitro mammalian chromosome aberration test. A dermal carcinogenicity study on this compound was negative.

Specific target organ toxicity: No data available for acute exposure.

12. ECOLOGICAL INFORMATION

Marine Pollutant/Ecotoxicity: Harmful to aquatic life with long lasting effects.

Toxicity to fish:

Trimethylolpropane Triacrylate: LC50 (96h): 1-2.2 mg/l

Toxicity to Algae: No data available

Environmental Fate: Bioconcentration potential is low. Biodegradation under aerobic static laboratory conditions is below detectable limits.

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 regulations. Incinerate in admixture with fuel equipped with a scrubber to remove nitrogen oxides and carbon monoxide. Disposal of in permitted waste management facility if incineration or landfill is not practicable.

14. TRANSPORT INFORMATION

DOT SHIPPING INFORMATION

DOT Proper Shipping Name: Resin Compound- Not regulated

DOT Technical Name: N/A

DOT Hazard Class: N/A

Hazard Subclass: N/A

DOT I.D. Number: N/A

Packing Group: N/A

IMDG

Technical Name: Environmentally hazardous substance, Liquid, N.O.S.

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 GHS regulations.



CANADIAN WHMIS CLASS: D2B

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS AS FOLLOWS-

OSHA Hazard Communication Standard (29 CFR 1910.1200): Skin sensitizer.

CERCLA/ Super Fund (40 CFR 117, 302):

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: **None.**

TOXIC SUBSTANCES CONTROL ACT: All chemicals in this compound are listed on the TSCA.

NEW JERSEY RIGHT-TO-KNOW / PENNSYLVANIA RIGHT-TO-KNOW:

Component	CAS Number
Solvent naphtha, petroleum, light aromatic	64742-95-6
1-methoxy-2-propanol acetate	108-65-6

California Proposition 65: The following substance(s) is(are) known to the State of California to cause cancer, birth defects or other reproductive harm:

Benzene	CAS # 71-43-2	<0.1%
Toluene	CAS # 108-88-3	<0.1%

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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.

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1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: F-41 Part B
Product Code: H5
Supplier/Manufacturer: POLYMER NATION CHEMICAL
1949 Swanson Court
Gurnee, IL 60031
(847) 774-5038

DATE ISSUED:	6/29/2023
MSDS REF. No:	H5

EMERGENCY PHONE: CHEMTREC, US (800) 424-9300 24-hours
ORIGINAL DATE ISSUED: 1/13/13 **REVISION DATE:** 8/12/13

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: Benzyl Alcohol

Hazard Statements

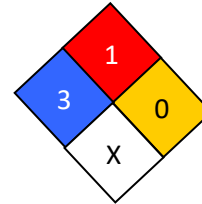
H317 May cause an allergic skin reaction
H304 May be fatal if swallowed and enters airways
H412 Harmful to aquatic life with long lasting effects
H335 May cause respiratory irritation
H314 Causes severe skin burns and eye damage

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:	3
Flammability:	1
Reactivity:	0
Personal Protection:	X

NFPA CODES



Potential Health Effects:

SKIN: Causes skin burns. If absorbed through the skin, may cause central nervous system effects, such as headache, nausea, dizziness, confusion, and breathing difficulties. Repeated skin exposure may also cause dryness or cracking of the skin.

EYES: May cause irritation. Corneal edema may give rise to a perception of "blue haze" or "fog" around lights. This effect is temporary and has no known residual effect. Causes eye burns. May cause blindness. Severe eye irritation.

INHALATION: Harmful if inhaled and may cause delayed lung injury. May cause nose, throat, and lung irritation. May cause central nervous system effects, such as headache, nausea, dizziness, confusion, and breathing difficulties. Severe cases of overexposure can result in respiratory failure. Inhalation of high concentration of vapors may cause irritation of respiratory system.

INGESTION: If ingested, severe burns of the mouth and throat as well as danger of perforation of the esophagus and the stomach.

CHRONIC HAZARDS: Overexposure may cause lung damage. Liver Disorders. Kidney Disorders. Adverse respiratory effects. Adverse skin effects. Adverse eye effects.

This product contains no listed carcinogens according to IARC, ACGIH, NTP and/or OSHA in concentrations of 0.1 percent or greater.

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3. COMPOSITION/INFORMATION ON INGREDIENTS

This document is 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 %
Cycloaliphatic Amine	N.A.	100%

4. FIRST AID MEASURES

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

EYES: Hold eyelids apart, initiate and maintain gentle and continuous irrigation until the patient receives medical care from a doctor. If medical care is not promptly available, continue to irrigate for one hour.

SKIN: Immediately remove contaminated clothing and any excess chemical with plenty of soap and water. Initiate and maintain gentle and continuous irrigation with plenty of water until the patient receives medical care from a doctor. If medical care is not promptly available, continue to irrigate for one hour. Cover wound with sterile dressing. **NOTE TO PHYSICIANS:** Application of corticosteroid cream has been effective in treating skin irritation.

INHALATION: If breathing has stopped or is labored, give assisted respirations. Move to fresh air. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.

INGESTION: Do not induce vomiting. If the person is conscious, give several glasses of water by mouth. Never give anything by mouth to an unconscious person. If a person vomits while lying on his back, place him in the recovery position. To prevent aspiration of vomit, turn the victims head to the side. Note to physicians: This product is highly injurious to all tissues, similar to that of ammonia or ammonia gas. Chemical pneumonitis, pulmonary edema, laryngeal edema and delayed scarring of the airway or other affected tissues may occur following exposure. There is no specific treatment. Clinical management is based on supportive treatment, which is similar to that for thermal burns.

5. FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Alcohol resistant foam, Carbon dioxide (CO₂), dry chemical, dry sand, limestone powder.

For safety reasons, unsuitable extinguishing agents: Water spray.

SPECIAL FIRE & UNUSUAL HAZARDS: Incomplete combustion may form carbon monoxide. May generate ammonia gas. May generate toxic nitrogen oxide gases. Burning produces noxious and toxic fumes. Downwind personnel must be evacuated.

SPECIAL FIREFIGHTING INSTRUCTIONS: Firefighters should wear butyl rubber boots, gloves, and body suit as well as a self-contained breathing apparatus.

ADDITIONAL INFORMATION: Remove all ignition sources. Water runoff can cause environmental damage. Dike and collect water used to fight fire. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

HAZARDOUS COMBUSTION PRODUCTS formed under fire conditions: carbon oxides, nitrogen oxides, ammonia gas.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe area. Ensure adequate ventilation. Wear a self-contained breathing apparatus and appropriate personal protective equipment.

Environmental precautions: Approach suspected leak areas with caution. Prevent further leaking if safe to do so. Construct a dike to prevent spreading. Flush area with water spray. Absorb spill with inert material (ex. dry sand or earth) and place in a chemical waste container for disposal. Avoid runoff into storm sewers and ditches which lead into waterways. Discharge into the environment must be avoided. If seepage into the environment has occurred, notify respective authorities. Open enclosed spaces to outside atmosphere if possible and stop flow of product.

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: Handle in a well-ventilated workspace. Empty containers may contain explosive vapors. Flush empty containers with water to remove residual flammable liquid vapors. Ground all containers during material transfer. Avoid breathing dust, vapor, or mist. Avoid contact with eyes. Avoid contact with skin or clothing.

STORAGE: Keep from freezing. Keep container closed when not in use. Keep container in a cool, well-ventilated place. Keep away from food, drink, and animal feed stuffs. Keep away from ignition sources and other incompatibilities. Store in original container or a container very similar to that of the original.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Good general ventilation should be sufficient to control airborne levels. Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product.

Personal Protection Equipment:

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Respiratory Protection: In poorly ventilated areas, a cartridge mask NIOSH approved for organic vapors is recommended. For emergency situations use self-contained breathing apparatus with pressure demand mode.



Skin Protection: Where contact is likely, wear chemical resistant gloves, rubber boots, and chemical safety goggles. 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: Wear chemical safety glasses with side shields or goggles. In the event of an emergency, use eye goggles with a full-face shield. DO NOT WEAR CONTACT LENSES when working with this material!!!

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: 48.946 g/L	Solubility in Water: Insoluble
Color: Gardener Scale 1-2	Specific Gravity @ 20°C: 1.030387
Odor: Ammoniacal	pH @ 100%: N/A
Physical Appearance: Straw-colored liquid	Melting/Freezing point: N/A
Boiling Point: N/A	Flashpoint: N/A
Ignition Temperature: N/A	Auto-ignition temperature: N/A
Explosion Limits:	Water solubility: Insoluble
Lower: N/A	Partition coefficient (n-octanol/water): 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: This product is stable under recommended and normal storage conditions.

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

INCOMPATIBILITY: Reactive metals, materials reactive with hydroxyl compounds, organic acids, mineral acids, sodium hypochlorite, metals, peroxides, oxidizing agents, strong bases, ammonia, hydrogen fluoride, oxygen difluoride, chlorine trifluoride.

HAZARDOUS DECOMPOSITION PRODUCTS: Combustion: Silicon Oxides, Nitric Acid, Nitrogen Oxides, Carbon Monoxide, Carbon Dioxide, Aldehydes, Flammable hydrocarbons, organic acid vapors.

CONDITIONS TO AVOID: Open Flame / Sparks / Sources of ignition. Heat.

11. TOXICOLOGICAL INFORMATION

Component Toxicological Information: (Acute)

Likely routes of entry: Skin Contact, Skin absorption, Ingestion, Inhalation
Benzyl Alcohol

LD50 Oral Rabbit 1040 mg/kg

LD50 Dermal Rabbit 2000 mg/kg

Not classified as a carcinogen by ACGIH, NTP, OSHA or IARC.

Mutagenic for bacteria and/or yeast. May cause damage to the following human organs: liver, central nervous system. No human data has been found at this point.

Potential chronic health effects: Allergic contact dermatitis through skin contact, changes in behavior from CNS exposure through inhalation. May also affect liver, kidneys, cardiovascular system, and metabolism (weight loss) upon chronic inhalation exposure. Eye irritation/corrosion: Severe eye irritant. Skin irritation/corrosive: Corrosive to the skin of a rabbit. Sensitization: May cause the sensitization of susceptible persons by skin contact.

Specific target organ toxicity: No data available for acute exposure.

12. ECOLOGICAL INFORMATION

Marine Pollutant/Ecotoxicity: Exposure at low concentrations may kill fish. Not a marine pollutant in respect to DOT regulations.

Toxicity to Fish:

Methylenebiscyclohexanamine, 4, 4'-: LC50 (96h): 46-100 mg/l *Leuciscus idus*

Cyclohexanamine, 4, 4'-methylenebis-, reaction products with bisphenol A diglycidylether homopolymer:
LC50 (96h): 7.8 mg/l *Oncorhynchus mykiss*

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Toxicity to Algae:

Methylenebiscyclohexanamine, 4, 4'-: EC50 (72h): 140-200 mg/l Algae

Toxicity to Daphnia:

Methylenebiscyclohexanamine, 4, 4'-: EC50 (48h): 6.84 mg/l Daphnia magna

Environmental Fate: Low bioaccumulation potential

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 regulations. Incinerate in admixture with fuel equipped with a scrubber to remove nitrogen oxides and carbon monoxide. Disposal of in permitted waste management facility if incineration or landfill is not practicable.

14. TRANSPORT INFORMATION

DOT SHIPPING INFORMATION

DOT Proper Shipping Name: Amines, Liquid, Corrosive, N.O.S.

DOT Technical Name: Amines, Liquid, Corrosive, N.O.S. (contains 4, 4'-Methylenebiscyclohexanamine)

DOT Hazard Class: 8

Hazard Subclass: N/A

DOT I.D. Number: UN2735

Packing Group: III

IMDG

Technical Name: Amines, Liquid, Corrosive, N.O.S. (contains 4, 4'-Methylenebiscyclohexanamine)

Hazard Class: 8

Hazard Subclass: N/A

I.D. Number: UN2735

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

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):

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: **None.**

TOXIC SUBSTANCES CONTROL ACT: All chemicals in this compound are listed on the TSCA.

NEW JERSEY RIGHT-TO-KNOW / PENNSYLVANIA RIGHT-TO-KNOW:

Chemical Name	CAS Number
Cycloaliphatic Amine	N.A.
Methylenebiscyclohexanamine,4,4'-	1761-71-3
Cyclohexanamine,4,4'-methylenebis-, reaction products with bisphenol A diglycidylether homopolymer	129733-57-9

California Proposition 65: To the best of our knowledge, no Proposition 65 chemicals exist in this product.

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.