Safety Data Sheet (SDS)

1. Identification

PRODUCT NAME: RADONSEAL 121 INJECTION EPOXY, PART A
SYNONYM: Thermosetting Resin
CHEMICAL FAMILY: Epoxide
MANUFACTURER / SUPPLIER: Novion, Inc.
18 L'Hermitage Drive
Shelton, CT 06484
TELEPHONE: 1-800-472-0603

2. Hazard(s) Identification

Acute Toxicity, Oral: category 4
Skin Irritation: category 2
Skin Sensitizer: category 1

Signal Word: WARNING

Skin Contact: Exposure may cause moderate irritation.

Eye Contact: Mild irritation

Inhalation: Can cause irritation of respiratory tract. Avoid breathing vapors of heated material

Medical conditions generally aggravated by exposure: Allergy, eczema, skin conditions.

Precautionary Statements: Do not handle until all safety precautions have been read and understood. Do not breathe vapors. In case of inadequate ventilation wear respiratory protection. Wear protective gloves and eye protection. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Store locked up. Keep away from children. Dispose of contents and container in accordance with applicable local, regional and national regulations.

Hazard Statements:
Causes skin and eye irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause respiratory irritation.

Carcinogenicity: In order to comply with California Proposition 65, we feel obligated to advise that some of our products may conceivably contain trace contaminants of some of the listed chemicals. While not necessarily added to our products as ingredients, some listed chemicals may be present in the raw materials from suppliers and over which we have no control. Therefore, even though some of the listed substances may not be present, a significant risk as defined by the regulations in order to comply with California law, we feel obligated to make the following statement:

Warning: Our products may contain trace amounts of some chemicals considered by the State of California (Proposition 65) to be carcinogens or reproductive toxicants. www.P65Warnings.ca.gov

3. Composition / Information on Ingredients

INGREDIENT	% BY WEIGHT	EXPOSURE LIMITS	CAS #
Diglycidyl ether resin mixture	65 - 95%	N.E.	25068-38-6
Proprietary diluent	5 - 35%	50 PPM - PEL	98-00-0
N Butyl glycidylether	0 - 10%	_____	2426-08-6

4. First Aid Measures

Eyes: Open lids wide and flush with large quantities of water for at least 15 minutes. Call a physician, preferably an eye specialist.

Skin: : Immediately flush skin with soap and water. Remove contaminated clothing and shoes. Wash clothing before reuse, discard shoes. Consult a physician if irritation developes.

Ingestion: Do not induce vomiting. Do not give liquids. Consult physician

Inhalation: Remove the patient from the contaminated area to fresh air. Administer oxygen or artificial respiration as needed. Call a physician if after effects occur.

5. Fire Fighting Measures

Fire Degradation Products: Decomposition and combustion products may be toxic.

Extinguishing Media: Carbon Dioxide, Dry Chemical, Foam, Water Fog. Where the fire is of major proportions, water spray may also be used.Water or foam may cause frothing if liquid is burning, but it still may be a usefull extinguising agent if carefully applied to the fire.

Protective equipment: Incase of fire, use normal fire fighting equipment including a NIOSH approved, self contained breathing apparatus (SCBA). Use water to cool containers.

Explosion Hazards: Empty containers retain product residue (liquid and/or vapor) and can be dangerous.
DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. Also, do not reuse container without commercial cleaning or reconditioning.

6. Accidental Release Measures

Steps To Be Taken In Case Material Is Release Or Spilled: Wear appropriate personal protective equipment. (See Exposure Controls / Personal Protection Section.)Eliminate all ignition sources. Prevent additional discharge of material if able to do so safely. Do not touch or walk through spilled material. Avoid runoff into storm sewers and ditches which lead to waterways. Ventilate spill area. Stay upwind of spill. Collect spilled materials for disposal. Use only non-combustible material for clean-up. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.

Disposal: Any disposal practice must be in compliance with all federal, state and local laws and regulations. Chemical additions, processing, storage, or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate. Waste characterization and disposal compliance is the responsibility solely of the party generating the waste or deciding to discard or dispose of the material.

7. Handling and Storage

Storage: Store in cool, dry area in closed cartridges.

Handling: Use only in a well ventilated area. Avoid breathing vapor, fumes or mist. Avoid contact with skin, eyes,and clothing. Do not take internally. Use personal protective equipment when transferring material to or from drums, totes or other containers. Safety glasses and gloves are the minimum protection. Additional precautions must be used when splash hazards are present. Causes irritation. May cause allergic skin reaction. Avoid contact with eyes, skin and clothing.

Shelf Life: 6 months

8. Exposure Controls / Personal Protection

Occupational Exposure Limits

ACGIH TLV-TWA	ACGIH-TLV STEL	OSHA PEL-TWA	OSHA PEL-CEILING
N.D.	N.D.	N.D.	N.D.

Respiratory Protection: Avoid breathing vapors. Use adequate ventilation. NIOSH/MSHA approved respirators may be necessary if airborne concentrations are expected to exceed exposure limits.

Ventilation: Good mechanical ventilation and local exhaust.

Protective Gloves: Rubber or polyethylene.

Eye Protection: Chemical splash goggles or safety glasses or full face shield must be used consistent with splash hazard present.

Protective Clothing: Wear impervious clothing/apron and gloves.

Protective Equipment: Disposable containers and paper on work area. Use of barrier cream recommended. Use appropriate equipment to prevent eye or skin contact.

9. Physical and Chemical Properties

Physical State: Liquid

Color: Gray

Odor: Low

pH: Not Established

Freezing Point: < 32°F

Explosive Limits, vol%: Not Established

Temp, °F: Not Established

Vapor Pressure: Not Established

Solubility in Water: Slight

% Volatile by volume: <3%

Flash Point: 490°F CL

Boiling Point: >200°F

Viscosity: Not Established

Evaporation Rate: Not Established**Auto-ignition**

Vapor Density: Not Established

10. Stability and Reactivity

Stability: Stable.

Reactivity: Incompatibility Materials to Avoid: Avoid contact with moisture and/or water. Prevent contact with halogens. Prevent contact with strong oxidizing agents. Keep away from acids.

Hazardous Decomposition Products: During combustion carbon monoxide may be formed.

Conditions to Avoid: Elevated temperature, container contamination.

Hazardous Polymerization: No Information

11. Toxicological Information

Acute Toxicity: LD SOs provided are the lowest values for typed of bisphenol A, diglycidal ether resins used

Oral: LD,0 (rabbit) > 4000 MG/KG

Inhalation: High concentrations of vapor can cause irritation of respiratory tract. Avoid breathing vapors of heated materia.

Skin Contact: Causes skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident on reexposure to this material

Eye Contact: Symptoms may include stinging, tearing, redness and swelling.

Ingestion: Harmful if swallowed. Ingestion may cause gastrointestinal tract irritation.

Routes of Entry: Skin contact, eye contact, ingestion.

Effects of Overexposure: Chronic prolonged or repeated exposure may cause Irritation, sensitization and dertitis.

Medical conditions generally aggravated by exposure: Allergy eczema, skin conditions

Acute Toxicity Values:

The acute effects of this product have not been tested. Data on individual components are tabulated below:

CAS-No.	Name according to EEC	Oral LD50, mg/kg	Dermal LD50, mg/kg	Vapor LC50, mg/L
25068-38-6	Bisphenol A , Epichlorohydrin resin	>1000	>2000	N.D.

12. Ecological Information

Comments: No testing for a product as a whole.

13. Disposal Considerations

Disposal: Any disposal practice must be in compliance with all federal, state and local laws and regulations. Chemical additions, processing, storage, or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate. Waste characterization and disposal compliance is the responsibility solely of the party generating the waste or deciding to discard or dispose of the material.

Refer to RCRA 4 CFR 261 and/or any other appropriate federal, state or local requirements for proper classification information.

Container Disposal: Drums/containers should be decontaminated and either passed to an approved drum recycler or destroyed.

RCRA/EPA Waste Information:The generation of waste should be avoided or minimized whenever possible. Chemical waste, even small quanities, should never be poured down draines, sewers or waterways.

14. Transport Information

DOT (Domestic surface): Shipping name; Compond resin. Not regulated (Class 55)

IMO (Ocean): Not restricted

ICAO (AIR): Not restricted

15. Regulatory Information

TSCA Status: All iingredients are not required to be listed on the TSCA inventory

SARA Title III:

Section 311/312 Hazard Categories: This chemical is classified as a hazardous chemical due to the potential for allergic skin reaction.

Section 313 Toxic Chemicals: To the best of our knowledge this product contains no chemical subject to Sara Title III Section 313

OSHA: This chemical is classified as a hazardous chemical due to the potential for allergic skin reaction. Standard 29 CFR 1910.1200

RCRA Status: Under RCRA, it is the responsibility of the product user to determine at the time of disposal whether a material containing the product or derived from the product should be classified as a hazardous waste (40 CFR 261.20-24)

CEPA Canadian Environmental Protection Act: All ingredients in this product are listed on the DSL or are not required to be listed

California Proposition 65 Carcinogens: No Proposition 65 Carcinogens exist in this product.

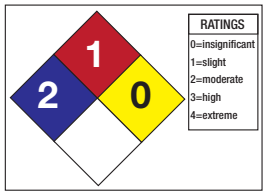
California Proposition 65 Reproductive Toxins: No Proposition 65 Reproductive Toxins exist in this product.

Canadian Whmis: No Information

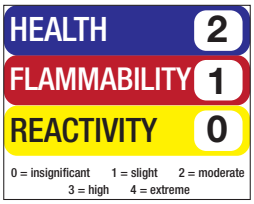
16. Other Information

All statements, technical information and recommendations contained herein are based upon available scientific test or data which we believe to be reliable since we cannot anticipate all conditions under which this information and our products or the products of other manufacturers in combination with our products may be used. Emecole Metro makes no warranties, express or implied, and assumes no responsibility in connection with any use of this information.

NFPA Ratings:



HMIS Ratings:



Safety Data Sheet (SDS)

1. Identification

PRODUCT NAME: RADONSEAL 121 INJECTION EPOXY, PART B
SYNONYM: Epoxy Hardener
CHEMICAL FAMILY: Modified Polyamine/Polyamide Composition
MANUFACTURER / SUPPLIER: Novion, Inc.
18 L'Hermitage Drive
Shelton, CT 06484
TELEPHONE: 1-800-472-0603

2. Hazard(s) Identification

Signal Word: WARNING

Skin Irritation: category 2
Skin Sensitizer: category 1
Serious Eye Damage /Irritant: category 2A

Skin Contact: Irritation. May cause allergic skin reaction.

Eye Contact: Causes serious eye irritation.

Ingestion: Harmful if swallowed. May cause vomiting.

Medical Conditions Generally Aggravated by Exposure: Allergy, eczema, skin conditions

Precautionary Statements: Do not handle until all safety precautions have been read and understood. Do not breathe vapors. In case of inadequate ventilation wear respiratory protection. Wear protective gloves and eye protection. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Store locked up. Keep away from children. Dispose of contents and container in accordance with applicable local, regional and national regulations.

Acute: Effects of Overexposure: Can cause skin, respiratory and eye burns. High concentrations of vapor can cause irritation of respiratory tract, nausea, and vomiting.

Chronic: Prolonged or repeated exposure may cause asthma and skin sensitization or other allergic response. **Hazard Statements:**

Overexposure may cause burns to skin, respiratory and eyes.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.

Carcinogenicity: In order to comply with California Proposition 65, we feel obligated to advise that some of our products may conceivably contain trace contaminants of some of the listed chemicals. While not necessarily added to our products as ingredients, some listed chemicals may be present in the raw materials from suppliers and over which we have no control. Therefore, even though some of the listed substances may not be present, a significant risk as defined by the regulations in order to comply with California law, we feel obligated to make the following statement:

Warning: Our products may contain trace amounts of some chemicals considered by the State of California (Proposition 65) to be carcinogens or reproductive toxicants. www.P65Warnings.ca.gov

3. Composition / Information on Ingredients

INGREDIENT	% BY WEIGHT	EXPOSURE LIMITS	CAS #
Proprietary Polyamine/Polyamide Blend	< 70	N.E.	UK
Proprietary Diluent	10 - 15	10 PPM ACGIH TWA	98-00-0
Diethylene Triamine	< 5	1 PPM SKIN ACGIH	111-40-0
Proprietary Polymercaptan	< 15	N.E.	N.E.

4. First Aid Measures

Eyes: Open lids wide and flush with large quantities of water for at least 15 minutes. Call a physician, preferably an eye specialist.

Skin: Immediately deluge skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse, discard shoes. Consult a physician if irritation developes.

Ingestion: Do not induce vomiting without medical advice. If conscious give water. Prevent aspiration of vomit (turn victim's head to side). Consult physician

Inhalation: Remove the patient from the contaminated area to fresh air. Administer oxygen or artificial respiration as needed. Seek medical attention.

5. Fire Fighting Measures

Flash Point: 185 °F PMCC **Flammable Limits:** Unknown

Extinguishing Media: Foam, dry chemicals, C02. Where the fire is of major proportions, water spray may also be used.Water or foam may cause frothing if liquid is burning, but it still may be a usefull extinguising agent if carefully applied to the fire.

Protective equipment: Incase of fire, avoid breathing smoke, use normal fire fighting equipment including a NIOSH approved, self contained breathing apparatus (SCBA). Use water to cool containers.

Unusual fire and explosion hazards: None

6. Accidental Release Measures

Small Spill: Absorb with inert material or scrape up. Wear proper personal protective equipment. Place in a chemical waste container for proper disposal.

Large Spill: Absorb with dry chemical absorbent, earth, sand or any other inert material. Wear proper personal protective equipment. Place in a chemical waste container for proper disposal. Flush contaminated areas with water.

Disposal: Any disposal practice must be in compliance with all federal, state and local laws and regulations. Chemical additions, processing, storage, or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate. Waste characterization and disposal compliance is the responsibility solely of the party generating the waste or deciding to discard or dispose of the material.

7. Handling and Storage

Storage: Store in tightly sealed containers. Store in a cool, dry, well ventilated area away from heat and open flame. Protect from moisture.

Handling: Avoid contact with skin, eyes,and clothing. Do not take internally. Use personal protective equipment when transferring material to or from drums, totes or other containers. Safety glasses and gloves are the minimum protection. Additional precautions must be used when splash hazards are present.

Safety Data Sheet (SDS)

8. Exposure Controls / Personal Protection

Respiratory Protection: Avoid breathing vapors. Use adequate ventilation.

Ventilation: : Normal ventilation should be adequate. Local if vapors are vented.

Protective Gloves: Rubber or impervious gloves recommended.

Eye Protection: Chemical splash goggles or safety glasses.

Protective Clothing: Wear impervious clothing and gloves. Materials may include butyl rubber, nitrile rubber, neoprene and Saranex coated Tyvek.

Protective Equipment: Use appropriate equipment to prevent eye or skin contact.

Other precautions: Avoid breathing vapors of heated material. Wash hands with soap and water after every use.

9. Physical and Chemical Properties

VP: N.D.

VD: N.A

Color: Straw

Odor:

Flash Point: 185 °F (PMCC)

SP GR: .98 - .99

% Volatile by Weight: < 3%

Boiling Point: Not Determined (> 200 °F)

Solubility In Water: Slight

Evaporation Rate: N.A.

10. Stability and Reactivity

Stability: Stable.

Reactivity: Incompatibility Materials to Avoid: Strong oxidizing agents, acids.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, nitrogen oxides.

Conditions to Avoid: Mixing with oxidizers or epoxy resins in quantities over 1#.

Hazardous Polymerization: Will not occur.

11. Toxicological Information

Toxicological Data: Polyamine Resin

Oral LD0: (rat) LD50-<5 CC/KG

Routes of Entry: Inhalation, skin contact.

Acute: Will cause burns to skin and eyes. High concentrations of vapor can cause irritation of respiratory tract, nausea, and vomiting.

Chronic: Prolonged or repeated exposure may cause asthma and skin sensitization or other allergic response.

Carcinogenic Categories:

NTP: Not classified as a carcinogen **IARC:** Not classified as a carcinogen **OSHA:** Not classified as a carcinogen

12. Ecological Information

Comments: No information.

13. Disposal Considerations

Disposal: Any disposal practice must be in compliance with all federal, state and local laws and regulations. Chemical additions, processing, storage, or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate. Waste characterization and disposal compliance is the responsibility solely of the party generating the waste or deciding to discard or dispose of the material.

Refer to RCRA 4 CFR 261 and/or any other appropriate federal, state or local requirements for proper classification information.

Container Disposal: Drums/containers should be decontaminated and either passed to an approved drum recycler or destroyed.

RCRA/EPA Waste Information:The generation of waste should be avoided or minimized whenever possible. Chemical waste, even small quanities, should never be poured down draines, sewers or waterways.

14. Transport Information

DOT (Domestic surface): Shipping name; Compond resin. Not regulated (Class 55)

IMO (Ocean): Not restricted.

ICAO (AIR): Not restricted.

15. Regulatory Information

TSCA Status: Included on inventory (all ingredients are in compliance)

SARA Title: III (40 CFR 370)

Section 311/312 Hazard Categories: Acute

Section 313 Toxic Chemicals: NA

WHMIS: Not controlled

NTP: Not regulated as hazardous material for transportation. **IARC:** Not regulated as hazardous material for transportation. **OSHA:** Not regulated as hazardous material for transportation.

RCRA Status: Under RCRA, it is the responsibility of the product user to determine at the time of disposal whether a material containing the product or derived from the product should be classified as a hazardous waste (40 CFR 261.20-24)

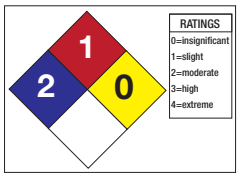
Carcinogenic Categories:

NTP: Not classified as a carcinogen **IARC:** Not classified as a carcinogen **OSHA:** Not classified as a carcinogen

16. Other Information

All statements, technical information and recommendations contained herein are based upon available scientific test or data which we believe to be reliable since we cannot anticipate all conditions under which this information and our products or the products of other manufacturers in combination with our products may be used. Emecole Metro makes no warranties, express or implied, and assumes no responsibility in connection with any use of this information.

NFPA Ratings:



HMIS Ratings:

Safety Data Sheet (SDS)

1. Identification

PRODUCT NAME: RADONSEAL 302 EPOXY SURFACE SEALER, PART A
SYNONYM: Thermosetting Resin
CHEMICAL FAMILY: Modified Epoxy Resin
MANUFACTURER / SUPPLIER: Novion, Inc.
18 L'Hermitage Drive
Shelton, CT 06484
TELEPHONE: 1-800-472-0603

2. Hazard(s) Identification

Skin Contact: Exposure may cause moderate irritation, sensitization, and dermatitis. May cause allergic skin reaction

Eye Contact: May cause mild eye irritation. Prolonged contact with the eyes may cause reversible corneal opacity to occur, with no visual impairment expected.

Ingestion: Oral LD0: (rabbit) > 4000 mg/kg

Signal Word: WARNING

Medical Conditions Generally Aggravated by Exposure: Allergy, eczema, skin conditions

Precautionary Statements: Do not handle until all safety precautions have been read and understood. Do not breathe vapors. In case of inadequate ventilation wear respiratory protection. Wear protective gloves and eye protection. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Store locked up. Keep away from children. Dispose of contents and container in accordance with applicable local, regional and national regulations.

Hazard Statements:
Causes skin and eye irritation.
May cause allergy or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause respiratory irritation.

Effects of Overexposure: Irritation, sensitization, and dermatitis

None of the components of this material are listed as carcinogens by NTP, IARC, or OSHA.

Carcinogenicity: In order to comply with California Proposition 65, we feel obligated to advise that some of our products may conceivably contain trace contaminants of some of the listed chemicals. While not necessarily added to our products as ingredients, some listed chemicals may be present in the raw materials from suppliers and over which we have no control. Therefore, even though some of the listed substances may not be present, a significant risk as defined by the regulations in order to comply with California law, we feel obligated to make the following statement:

Warning: Our products may contain trace amounts of some chemicals considered by the State of California to be carcinogens or reproductive toxicants.

3. Composition / Information on Ingredients

INGREDIENT	% BY WEIGHT	EXPOSURE LIMITS	CAS #
Bisphenol a/diglycidyl Ether Resin	30 - 45	NE	25068-38-6
Wollastonite	45 - 50	OSHA PEL: 5mg/m3 ACGIH TLV: 3mg/m3	13983-17-0
Cresyl Glycidyl Ether	3 - 7	NE	2210-79-9
Calcium Carbonate	8 - 10	OSHA PEL: 5mg/m3 (respirable fraction) OSHA PEL: 15mg/m3 (total dust) ACGIH TLV: 10mg/m3 ([1] nuisance dust)	1317-65-3

4. First Aid Measures

Eyes: Open lids wide and flush with large quantities of water for at least 15 minutes. Call a physician, preferably an eye specialist.

Skin: Wash with soap and water. Remove contaminated clothing and shoes. Wash clothing before reuse, discard shoes. Consult a physician if irritation developes.

Ingestion: Immediately drink large quantities of water. Induce vomiting. Consult physician

Inhalation: Remove the patient from the contaminated area to fresh air. Administer oxygen or artificial respiration as needed. Call a physician if after effects occur.

5. Fire Fighting Measures

Fire Degradation Products: Toxic fumes are released in fire situations. Acrid smoke/fumes

Extinguishing Media: Carbon dioxide, dry chemicals, foam. Where the fire is of major proportions, water spray may also be used.Water or foam may cause frothing if liquid is burning, but it still may be a usefull extinguising agent if carefully applied to the fire.

Protective equipment: Incase of fire, use normal fire fighting equipment including a NIOSH approved, self contained breathing apparatus (SCBA). Use water to cool containers.

Explosion Hazards: Decomposition and combustion products may be toxic.

6. Accidental Release Measures

Small Spill: Absorb with rag. Wear proper personal protective equipment. Place in a chemical waste container for proper disposal.

Large Spill: Absorb with dry chemical absorbent, earth, sand or any other inert material. Wear proper personal protective equipment. Place in a chemical waste container for proper disposal. Flush contaminated areas with water.

Disposal: Any disposal practice must be in compliance with all federal, state and local laws and regulations. Chemical additions, processing, storage, or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate. Waste characterization and disposal compliance is the responsibility solely of the party generating the waste or deciding to discard or dispose of the material.

7. Handling and Storage

Storage: Store in tightly sealed containers. Store in a cool, dry, well ventilated area away from heat and open flame. Protect from moisture.

Handling: Avoid contact with skin, eyes,and clothing. Do not take internally. Use personal protective equipment when transferring material to or from drums, totes or other containers. Safety glasses and gloves are the minimum protection. Additional precautions must be used when splash hazards are present.

Safety Data Sheet (SDS)

8. Exposure Controls / Personal Protection

Respiratory Protection: Avoid breathing vapors. Use adequate ventilation.

Ventilation: Good mechanical ventilation and local exhaust.

Protective Gloves: Rubber or polyethylene.

Eye Protection: Chemical splash goggles or safety glasses.

Protective Clothing: Wear impervious clothing and gloves. Materials may include butyl rubber, nitrile rubber, neoprene and Saranex coated Tyvek.

Protective Equipment: Disposable containers and paper on work area. Use of barrier cream recommended. Use appropriate equipment to prevent eye or skin contact.

9. Physical and Chemical Properties

VP: >1 TORR @ 180° C

VD: >1 (air = 1)

Color: White

Solubility: Insoluble

Evaporation Rate: <1 (butyl acetate = 1)

SP GR: 1.32 (water = 1)

% Volatile by VL: Nil

Boiling Point: > 200° F

Flash Point: > 200° F (TCC)

Explosive Limits: LEL – NE

UEL – NE

10. Stability and Reactivity

Stability: Stable under recommended storage conditions.

Reactivity: Incompatibility Materials to Avoid: Strong oxidizers, strong acids or bases in bulk.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, aldehydes and other organics.

Conditions to Avoid: Elevated temperatures, container contamination.

11. Toxicological Information

Toxicological Data: LD SOs provided are the lowest values for type of bisphenol A diglycidal ether resins used

Oral LD0: (rabbit) > 4000 mg/kg

Routes of Entry: Inhalation, skin contact, eyecontact, iingestion.

Carcinogenic Categories:

NTP: Not classified as a carcinogen **IARC:** Not classified as a carcinogen **OSHA:** Not classified as a carcinogen

12. Ecological Information

Comments: No information.

13. Disposal Considerations

Disposal: Any disposal practice must be in compliance with all federal, state and local laws and regulations. Chemical additions, processing, storage, or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate. Waste characterization and disposal compliance is the responsibility solely of the party generating the waste or deciding to discard or dispose of the material.

Refer to RCRA 4 CFR 261 and/or any other appropriate federal, state or local requirements for proper classification information.

Container Disposal: Drums/containers should be decontaminated and either passed to an approved drum recycler or destroyed.

RCRA/EPA Waste Information:The generation of waste should be avoided or minimized whenever possible. Chemical waste, even small quanities, should never be poured down draines, sewers or waterways.

14. Transport Information

DOT (Domestic surface): Shipping name; Compond resin. Not regulated (Class 55)

IMO (Ocean): Not restricted.

ICAO (AIR): Not restricted.

15. Regulatory Information

TSCA Status: All iingredients are not required to be listed on the TSCA inventory

SARA Title III:

Section 311/312 Hazard Categories: This chemical is classified as a hazardous chemical due to the potential for allergic skin reaction.

Section 313 Toxic Chemicals: To the best of our knowledge this product contains no chemical subject to Sara Title III Section 313

OSHA: This chemical is classified as a hazardous chemical due to the potential for allergic skin reaction. Standard 29 CFR 1910.1200

RCRA Status: Under RCRA, it is the responsibility of the product user to determine at the time of disposal whether a material containing the product or derived from the product should be classified as a hazardous waste (40 CFR 261.20-24)

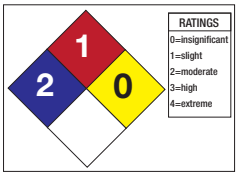
CEPA Canadian Environmental Protection Act: All ingredients in this product are listed on the DSL or are not required to be listed

16. Other Information

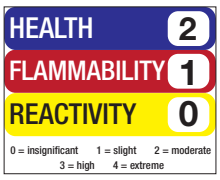
All statements, technical information and recommendations contained herein are based upon available scientific test or data which we believe to be reliable since we cannot anticipate all conditions under which this information and our products or the products of other manufacturers in combination with our products may be used. Novion, Inc. makes no warranties, express or implied, and assumes no responsibility in connection with any use of this information.

Personal Protection: B

NFPA Ratings:



HMIS Ratings:



Safety Data Sheet (SDS)

1. Identification

PRODUCT NAME: RADON SEAL 302 EPOXY SURFACE SEALER, PART B

CHEMICAL FAMILY: Modified Amine

MANUFACTURER / SUPPLIER: Novion, Inc.
18 L'Hermitage Drive
Shelton, CT 06484

TELEPHONE: 1-800-472-0603

2. Hazard(s) Identification

Skin Contact: Mild irritation.

Eye Contact: Polyamine resin - conjunctival irritant

Ingestion: Oral LD_{50} : (rat) < 5 CC/KG

Medical Conditions Generally Aggravated by Exposure: Dermatitis; reproductive, asthma, bronchitis, and inflammatory or fibrotic respiratory disease.

Precautionary Statements: Do not handle until all safety precautions have been read and understood. Do not breathe vapors. In case of inadequate ventilation wear respiratory protection. Wear protective gloves and eye protection. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Store locked up. Keep away from children. Dispose of contents and container in accordance with applicable local, regional and national regulations.

Signal Word: DANGER

Hazard Statement: Acute: Corrosive. Harmful if in contact with skin. Corrosive to eyes. Corrosive to skin. Severe eye irritant. Severe skin irritant. May cause respiratory sensitization. May cause skin sensitization. Burns of the eye may cause blindness. Contact of undiluted product with the eyes or skin quickly causes severe irritation and pain and may cause burns, necrosis and permanent injury. Inhalation of aerosol, mist or fog may cause harm if inhaled. Inhalation of aerosols and mists may severely damage contacted tissue and produce scarring. Risk of exposure to hazardous concentrations of vapor under normal working conditions in a well ventilated space is minimal. However, conditions such as spraying, or sudden release of hot liquid, which generate an aerosol, mists or fog should be avoided. Product is readily absorbed through the skin and may cause nausea, headache and general discomfort.

Chronic: Prolonged or repeated skin contact may defat the skin and cause dermatitis; allergic reactions may arise in sensitive individuals.

Carcinogenicity: Wollastonite:

NTP: Not classified as a carcinogenic

OSHA: Not classified as a carcinogenic

IARC classifies wollastonite as Group 3, Unclassifiable as to carcinogenicity to humans.

Carcinogenicity: In order to comply with California Proposition 65, we feel obligated to advise that some of our products may conceivably contain trace contaminants of some of the listed chemicals. While not necessarily added to our products as ingredients, some listed chemicals may be present in the raw materials from suppliers and over which we have no control. Therefore, even though some of the listed substances may not be present, a significant risk as defined by the regulations in order to comply with California law, we feel obligated to make the following statement:

Warning: Our products may contain trace amounts of some chemicals considered by the State of California to be carcinogens or reproductive toxicants.

3. Composition / Information on Ingredients

INGREDIENT	% BY WEIGHT	EXPOSURE LIMITS	CAS #
Proprietary Polyamine	5 - 10	NE	UK
Wollastonite	40 - 50	OSHA PEL: 5mg/m3 ACGIH TLV: 3mg/m3	13983-17-0
Proprietary Polymercaptan	15 - 25	NE	Trade Secret
Diethylene Triamine	< 5	1 PPM SKIN ACGIH	111-40 0
Inert Powders	< 10		14807-96-6
Fumed Silica	< 5	NE	067762-90-7
Terpene Hydrocarbon	3 - 7	OSHA PEL: 5mg-m3 ACGIH TLV 3mg/m3	8002-09-3
Calcium Carbonate	8 - 10	OSHA PEL: 5mg/m3 (respirable fraction) OSHA PEL: 15mg/m3 (total dust) ACGIH TLV: 10mg/m3 ([1] nuisance dust)	1317-65-3

4. First Aid Measures

Eyes: Open lids wide and flush with large quantities of water for at least 15 minutes. Seek immediate medical attention, preferably an eye specialist.

Skin: Immediately deluge skin with plenty of water. Remove and isolate contaminated clothing and shoes at the site. Consult a physician if irritation developes.

Ingestion: ***Do not induce vomiting*** . Prevent aspiration of vomit (turn victim's head to side). Consult physician

Inhalation: Remove the patient from the contaminated area to fresh air. Administer oxygen or artificial respiration as needed. Seek medical attention.

5. Fire Fighting Measures

Extinguishing Media: Foam, dry chemicals, C02. Where the fire is of major proportions, water spray may also be used.Water or foam may cause frothing if liquid is burning, but it still may be a usefull extinguising agent if carefully applied to the fire.

Protective equipment/Special fire fighting procedures: Fire may produce irritation or poisonous gases. Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide limited protection. Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind; keep out of low areas. Isolate for ½ mile in all directions if tank, rail car or tank truck is involved in fire. If runoff from fire control occurs, notify the appropriate authorities. Use water to cool containers.

Explosion Hazards: LEL not determined UEL not determined

6. Accidental Release Measures

Material is Released or Spilled: Ventilate area. Avoid breathing vapor. Wear suitable protective equipment. Contain spill if possible. Absorb with dry chemical absorbent, earth, sand or any other inert material and shovel up. Prevent entering waterways and sewers

Disposal: Any disposal practice must be in compliance with all federal, state and local laws and regulations. Chemical additions, processing, storage, or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate. Waste characterization and disposal compliance is the responsibility solely of the party generating the waste or deciding to discard or dispose of the material.

7. Handling and Storage

Storage: Store in cool, well-ventilated area. Keep away from flames, sparks or hot surfaces. ***Never use a torch to cut or weld on or near container. Empty containers can contain explosive vapors.*** Protect from moisture.

Handling: Avoid contact with skin, eyes,and clothing. Do not take internally. Use personal protective equipment when transferring material to or from drums, totes or other containers. Additional precautions must be used when splash hazards are present. (waterless hand cleaner may be helpful in removing residues)

8. Exposure Controls / Personal Protection

Respiratory Protection: Avoid breathing vapors. NIOSH-approved respirator for organic vapor and mist to control exposure where ventilation is inadequate. Avoid breathing vapors of heated material.

Ventilation: : General and local exhaust.

Eye Protection: Chemical splash goggles or safety glasses with side-shields.

Protective Clothing: Wear impervious clothing and gloves. Materials may include butyl rubber, nitrile rubber, viton, neoprene and Saranex coated Tyvek.

Protective Equipment: Use appropriate equipment to prevent eye or skin contact.

Other Protective Clothing or Equipment: If splashing is anticipated, wear rubber apron and boots or other protective equipment to minimize contact.

9. Physical and Chemical Properties

VP: (mmHg at 70°F) .1

VD: >1 (air = 1)

Color /Appearance: Grey-Black Paste

Odor: Amine/Skunk-like, pinc - 0.1

Flash Point: 172 °F (TCC)

SP GR: 1.55 (water = 1)

% Volatile by VL: < 1%

Boiling Point: 414 °F

Solubility In Water: Appreciable

Evaporation Rate: < 1 (n-butyl acetate = 1)

10. Stability and Reactivity

Stability: Stable.

Reactivity: Incompatibility Materials to Avoid: Mineral acids (i.e. sulfuric, phosphoric, etc.). Organic acids (i.e. acetic acid, citric acid etc.). Oxidizing Agents (i.e. perchlorates, nitrates etc.). Reactive metals (i.e. sodium, calcium, zinc etc.). Sodium or Calcium Hypochlorite. CAUTION! N-Nitrosamines, many of which are known to be potent carcinogens, may be formed when the product comes in contact with nitrous acid, nitrites or atmospheres with high nitrous oxide concentrations. Product slowly corrodes copper, aluminum, zinc and galvanized surfaces. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion. Materials reactive with hydroxyl compounds. Nitrites, nitrosating agents. A reaction accompanied by large heat release occurs when the product is mixed with acids. Heat generated may be sufficient to cause vigorous boiling creating a hazard due to splashing or splattering of hot material.

Hazardous Decomposition Products: CO, CO2, ammonia and NOX, nitric acid.

Conditions to Avoid: Exposure to high temperature should be minimized.

Hazardous Polymerization: Will not occur.

11. Toxicological Information

Toxicological Data: Polyamine Resin

Oral LD0: (rat) LD50-<5 CC/KG

Routes of Entry: Inhalation, Skin absorption..

Acute: Corrosive. Harmful if in contact with skin. Corrosive to eyes. Corrosive to skin. Severe eye irritant. Severe skin irritant. May cause respiratory sensitization. May cause skin sensitization. Burns of the eye may cause blindness. Contact of undiluted product with the eyes or skin quickly causes severe irritation and pain and may cause burns, necrosis and permanent injury. Inhalation of aerosol, mist or fog may cause harm if inhaled. Inhalation of aerosols and mists may severely damage contacted tissue and produce scarring. Risk of exposure to hazardous concentrations of vapor under normal working conditions in a well ventilated space is minimal. However, conditions such as spraying, or sudden release of hot liquid, which generate an aerosol, mists or fog should be avoided. Product is readily absorbed through the skin and may cause nausea, headache and general discomfort.

Chronic: Prolonged or repeated skin contact may defat the skin and cause dermatitis; allergic reactions may arise in sensitive individuals.

Carcinogenic Categories: Wollastonite

NTP: Not classified as a carcinogen

IARC: classifies wollastonite as Group 3, unclassifiable as to carcinogenicity to humans.

OSHA: Not classified as a carcinogen

12. Ecological Information

Comments: material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

13. Disposal Considerations

Disposal: Any disposal practice must be in compliance with all federal, state and local laws and regulations. Chemical additions, processing, storage, or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate. Waste characterization and disposal compliance is the responsibility solely of the party generating the waste or deciding to discard or dispose of the material. Materials may become a hazardous waste through use.

Refer to RCRA 4 CFR 261 and/or any other appropriate federal, state or local requirements for proper classification information.

Container Disposal: Drums/containers should be decontaminated and either passed to an approved drum recycler or destroyed.

RCRA/EPA Waste Information:The generation of waste should be avoided or minimized whenever possible. Chemical waste, even small quanities, should never be poured down draines, sewers or waterways.

14. Transport Information

DOT (Domestic surface): Shipping name; Compond resin. Not regulated (Class 55)

IMO (Ocean): Not restricted.

ICAO (AIR): Not restricted.

15. Regulatory Information

Volatile Organic Content: (Calculated Values)

VOC per liter (mixed per Rule 1168):	Not Determined
VOC per liter minus exempt solvents & water:	Not Determined
EPA Hazardous Waste Number(s) (40 CFR Part 261):	D001
EPA Hazard Category (40 CFR Part 370):	IMMEDIATE (ACUTE) DELAYED (CHRONIC)

SARA TITLE III:

This product contains the following TOXIC CHEMICALS subject to the Reporting Requirements of Sec. 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986, and of 40 CFR Part 372:

Chemical	CAS No.	Wt%
NONE		

This product contains the following EXTREMELY HAZARDOUS SUBSTANCE(S) subject to Emergency Planning Requirements under Sec. 301-303 (40 CFR Parts 300 and 355) and Emergency Release Notification Requirements under Sec. 304:

Chemical	CAS No.	Wt%	RQ/TPQ Lbs
NONE			

This product contains the following (CERCLA LIST) HAZARDOUS SUBSTANCE(S) subject to Emergency Release Notification Requirements under Sec. 304 (40 CFR Part 302):

Chemical	CAS No.	Wt%	Final RQ Lbs
NONE			

CALIFORNIA PROPOSITION 65:

This product may contain trace quantities of the following chemicals that are identified by the State of California under the Safe Drinking Water and Toxic Reinforcement Act of 1986 ("Proposition 65") as either a carcinogenic or reproductive hazard:

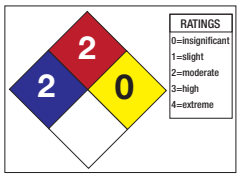
Chemical	CAS No.	Estimated Concentration %
NONE		

Although the information contained herein is believed to be reliable, it is furnished without warranty of any kind. This information is not intended to be all-inclusive as to the manner and conditions of use, handling, and storage.

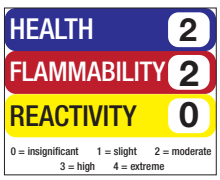
16. Other Information

All statements, technical information and recommendations contained herein are based upon available scientific test or data which we believe to be reliable since we cannot anticipate all conditions under which this information and our products or the products of other manufacturers in combination with our products may be used. Novion, Inc. makes no warranties, express or implied, and assumes no responsibility in connection with any use of this information.

NFPA Ratings:



HMIS Ratings:



Safety Data Sheet (SDS)

1. Identification

PRODUCT NAME: RadonSeal 455, PART A
CHEMICAL FAMILY: Polyurethane Prepolymer
MANUFACTURER / SUPPLIER: Novion, Inc.
18 L'Hermitage Drive
Shelton, CT 06484

TELEPHONE: 1-800-472-0603

2. Hazard(s) Identification

Skin irritation: Category 2
Eye irritation: Category 2A
Respiratory sensitization: Category 1
Skin sensitization: Category 1
Specific target organ systemic toxicity - single exposure
Category 3 (Respiratory system)
Specific target organ systemic toxicity - repeated exposure (Inhalation)
Category 2 (Respiratory system, Respiratory Tract)

Signal Word: DANGER

Skin Contact: Causes skin irritation. Prolonged or repeated exposure can cause skin irritation, reddening, dermatitis and in some individuals, sensitization. Skin contact may result in allergic skin reactions or respiratory sensitization

Eye Contact: As a liquid or dust may cause serious eye irritation, inflammation and or damage to sensitive eye tissue.

Ingestion: Single dose oral toxicity is considered to be extremely low. Can result in irritation and corrosive action in mouth, stomach tissue and digestive tract.

Inhalation: May cause damage to organs (Respiratory system, Respiratory Tract) through prolonged or repeated exposure if inhaled.

Precautionary Statements: Do not handle until all safety precautions have been read and understood. Do not breathe vapors. In case of inadequate ventilation wear respiratory protection. Wear protective gloves and eye protection. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Store locked up. Keep away from children. Dispose of contents and container in accordance with applicable local, regional and national regulations.

Hazard Statement: Chronic: As a result of previous repeated overexposure or a single large dose, certain individuals develop isocyanine sensitization (chemical asthma) or tissue injury in the upper respiratory tract. Animal tests indicate skin contact alone may also lead to allergic respiratory reaction. These effects may be permanent. Any person developing asthmatic reaction or other sensitization should be removed from further exposure.

Potential Health Effects: At room temperature, MDI vapors are minimal due to low vapor pressure. However, heating, foaming or otherwise dispersing (drumming, venting or pumping) operations may generate more vapor or aerosol concentrations of isocyanate. Excessive exposure may cause irritation of the eyes, upper respiratory tract and lungs. Severe overexposure may lead to pulmonary edema. Respiratory sensitization with asthma like symptoms may occur in susceptible individuals. MDI concentration below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Symptoms may include coughing, dryness of throat, headache, nausea, difficulty breathing and feeling of tightness in the chest. Effects may be delayed. Impaired lung function (decreased ventilators capacity) has been associated with overexposure to isocyanate.

Persons With Known Respiratory or Allergy Problems Must Not Be Exposed to This Product.

Carcinogenicity: MDI and polymeric MDI are not listed by the NTP, IARC or regulated by OSHA as carcinogens.

Warning: Our products may contain trace amounts of some chemicals considered by the State of California (Proposition 65) to be carcinogens or reproductive toxicants. www.P65Warnings.ca.gov

Safety Data Sheet (SDS)

3. Composition / Information on Ingredients

INGREDIENT	% BY WEIGHT	CAS #	CLASSIFICATION
4,4'-Diphenylmethane Diisocyanate	35%	101-68-8	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2A; H319 Resp. Sens. 1; H334 Skin Sens. 1; H317 STOT SE 3; H335 STOT RE 2; H373
Urethane Prepolymer	5-10%	Trade Secret	Resp. Sens. 1; H334 Skin Sens. 1; H317
Talc	7 - 13%	14807-96-6	This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).
Propylene Carbonate	1.49%	108-32-7	Eye Irrit. 2A; H319
Polymer	10 -15%	254504001-5759	Acute Tox. 4; H332 Skin Irrit. 2; H315 Resp. Sens. 1A; H334 Skin Sens. 1A; H317 STOT SE 3; H335 STOT RE 2; H373
Scavenger	10 - 15%	254504001-5709	This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

4. First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Seek immediate medical attention.

Skin: Wash off in flowing water or shower. Remove and wash contaminated clothing and discard contaminated shoes. Seek medical attention if redness, itching or a burning sensation develops or persists after the area is washed.

Ingestion: Give water (max.-2 glass fulls) Do not induce vomiting unless directed to do so by medical personnel. If gastrointestinal symptoms develop, consult medical personnel. (Never give anything by mouth to an unconscious person.)

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility immediately.

Most important symptoms and effects, both acute and delayed:

Pulmonary edema may be delayed.

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea) irritation (nose, throat, airways) Cough Headache chest pain lung edema (fluid buildup in the lung tissue) Difficulty in breathing

Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure if inhaled.

Notes to physician: No hazards which require special first aid measures.

5. Fire Fighting Measures

Fire Degradation Products: Harmful if inhaled. Toxic fumes are released in fire situations

Extinguishing Media: Dry chemical, carbon dioxide (CO2), foam, water spray for large fires

Protective equipment: Incase of fire, use normal fire fighting equipment including a NIOSH approved, self contained breathing apparatus (SCBA). Use water to cool containers.

Hazardous combustion products: carbon dioxide and carbon monoxide, Hydrogen cyanide (hydrocyanic acid), Isocyanates, Nitrogen oxides (NOx), Bromine, Hydrocarbons.

Flash point: > 212 °F / > 100 °C

6. Accidental Release Measures

Spill: Evacuate spill area. With adequate ventilation and appropriate personal protective equipment, cover the area with an inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Keep in suitable, closed containers for disposal Saturate with water or decontamination solution below, but do not seal the container with the isocyanate mixture. Larger quantities of liquid may be transferred directly to drums for disposal.

Clean up: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

Note: Isocyanate will react with water and generate carbon dioxide. This could result in the rupture of any closed container.

Disposal: Any disposal practice must be in compliance with all federal, state and local laws and regulations. Chemical additions, processing, storage, or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate. Waste characterization and disposal compliance is the responsibility solely of the party generating the waste or deciding to discard or dispose of the material. Refer to

RCRA 40 CFR 261 and/or any other appropriate federal, state or local requirements for proper classification information.

Container Disposal: Drums/containers must be thoroughly drained to process or storage vessels before removal to an appropriate area for subsequent decontamination. Drums/containers must be decontaminated in properly ventilated areas by personnel protected from the inhalation of isocyanate vapors. Spray or pour 1 to 5 gallons of decontamination solution into the drum making sure the walls are well rinsed. Let the drum/container soak unsealed for 48 hours. Pour out the decontamination solution and triple rise the empty container. Puncture or otherwise destroy the rinsed container before disposal. **Do not heat or cut empty containers with electric or gas torch**.

7. Handling and Storage

Storage: When stored between 60ºF and 85ºF (15º and 30ºC) in sealed containers, typical shelf life is 6 months or more from the date of manufacture. Consult technical data sheet for shelf life requirements affecting performance quality. Should freezing occur, the material must be thawed thoroughly and mixed until uniform. Opened containers must be handled properly to prevent moisture contamination. Container hazardous when empty.

Handling: Use personal protective equipment when transferring material to or from drums, totes or other containers. Safety glasses and gloves are the minimum protection. Additional precautions must be used when splash hazards are present. The reaction of polyols and isocyanates generate heat. Contact of the reacting materials with skin or eyes can cause sever burns and may be difficult to remove from the affected areas. Immediately wash affected areas with plenty of water and seek medical attention. In addition, such contact increases the risk of exposure to isocyanate vapors. Do not smoke or use naked lights, open flames, space heaters or other ignition sources near pouring or frothing operations.

8. Exposure Controls / Personal Protection

Components With Workplace Control Parameters

Components	CAS No.	Value Type (form of exposure)	Control Parameters/ Permissable Concentration	Basis
Scavenger	254504001-5709	TWA	1 mg/m3 Respirable fraction.	ACGIH
4,4'-Diphenylmethane diisocyanate	101-68-8	TWA	0.005 ppm	ACGIH
		REL	0.005 ppm 0.05mg/m3	NIOSH/GUIDE
		Ceiling time	0.020 ppm 0.2 mg/m3	NIOSH/GUIDE
		Ceiling	0.020 ppm 0.2 mg/m3	OSHA_TRANS
Talc	14807-96-6	TWA	2 mg/m3 Respirable fraction.	ACGIH
		REL	2 mg/m3 Respirable.	NIOSH/GUIDE
		TWA	0.1 mg/m3 Respirable.	Z3
		TWA	0.3 mg/m3 Total dust.	Z3

Engineering Measures:

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Hygiene measures:

Wash hands before breaks and at the end of workday. When using do not eat or drink. When using do not smoke.

8. Exposure Controls / Personal Protection (continued)

Personal protective equipment:

Respiratory Protection:

In the case of vapour formation use a respirator with an approved filter.
Diisocyanates have poor warning properties. An air-purifying respirator with an organic vapor cartridge and an N95 prefilter can be used safely and effectively to reduce exposure, provided that appropriate cartridge change schedules are developed to ensure that cartridges are changed before breakthrough occurs. The employer is required to select the appropriate respirator for each situation and must consider potential exposure to chemicals in addition to diisocyanates. A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

Eye Protection:

Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.

Skin and Body Protection:

Wear as appropriate: impervious clothing, Safety shoes, Choose body protection according to the amount and concentration of the dangerous substance at the work place. Discard gloves that show tears, pinholes, or signs of wear. Wear resistant gloves (consult your safety equipment supplier).

9. Physical and Chemical Properties

Appearance: Viscous

VP: < 0.01333 hPa (25 °C)

VD: 1.5 (MDI) AIR = I

Color: Cream/beige

Solubility in Water: Practically insoluble

Flammable Limits: LEL (%) N.D. UEL – (%) N.D.

Relative Vapour Density: > 1AIR=1

Density: 1.288 g/cm3 (20 °C)

Physical state: liquid

Odor: Mild.

% Volatile by wt: ND

Boiling Point: > 392 °F / > 200 °C

Flash Point: > 212 °F / > 100 °C

Evaporation Rate: < 1 n-Butyl Acetate

Relative density: No data available

Viscosity, dynamic: ca. 20,000 mPa.s

10. Stability and Reactivity

Stability: Material is stable when stored in sealed containers under normal conditions. Avoid extended exposure over 110 °F (45°C).

Reactivity: No decomposition if stored and applied as directed.

Hazardous Polymerization: Product will not undergo hazardous polymerization.

Conditions to Avoid: Freezing temperatures, exposure to moisture and incompatible materials.

Incompatible Materials: Acids, Alcohols, aluminum, Amines, Ammonia, bases, copper alloys, fluorides, Iron, oxidizing agents, strong alkalis, strong reducing agents, water, Zinc, Humid air.

Hazardous Decomposition Products: Carbon dioxide and carbon monoxide, Hydrocarbons, Hydrogen cyanide (hydrocyanic acid), Isocyanates, Nitrogen oxides (NOx).

11. Toxicological Information

Toxicological Data: Information on likely routes of exposure: Inhalation, Skin contact, Eye Contact, Ingestion

Acute toxicity: Not classified based on available information.

Components:

POLYMER:

Acute oral toxicity:	LD 50 (Rat): > 5,000 mg/kg Method: OECD Test Guideline 425 GLP: yes
Acute inhalation toxicity:	Assessment: The component/mixture is classified as acute inhalation toxicity, category 4.
Acute dermal toxicity:	(Rabbit): > 9,400 mg/kg Result: Irritating to skin Result: Not irritating to eyes Remarks: Information given is based on data obtained from similar substances.

SCAVENGER:

Result: Possibly irritating to skin
Result: Mildly irritating to eyes

URETHANE PREPOLYMER:

Result: Not irritating to skin
Result: Not irritating to eyes

4,4'-DIPHENYLMETHANE DIISOCYANATE:

Acute oral toxicity:	LD 50 (Rat): 9,200 mg/kg
Acute inhalation toxicity:	LC 50 (Rat): 0.369 mg/l Exposure time: 4 h LC 50 (Rat): > 2.24 mg/l Exposure time: 1 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Assessment: The component/mixture is classified as acute inhalation toxicity, category 4.
Acute dermal toxicity:	LD 50 (Rabbit): > 7,900 mg/kg Result: Irritating to skin Result: Irritating to eyes

TALC:

Result: Possibly irritating to skin
Result: Possibly irritating to eyes

PROPYLENE CARBONATE:

Acute oral toxicity:	LD 50 (Rat): 29.1 g/kg
Acute dermal toxicity:	LD 50 (Rabbit): > 24 g/kg
Skin corrosion/irritation:	Causes skin irritation. Species: Rabbit Method: OECD Test Guideline 404 Result: Not irritating to skin
	Serious eye damage/eye irritation Causes serious eye irritation. Species: Rabbit Result: Irritating to eyes Method: OECD Test Guideline 405

Product: Remarks: May cause skin irritation and/or dermatitis. Vapours may cause irritation to the eyes, respiratory system and the skin., Causes serious eye irritation.

11. Toxicological Information (continued)

Toxicological Data: Information on likely routes of exposure: Inhalation, Skin contact, Eye Contact, Ingestion

Respiratory or skin sensitisation:

Skin sensitisation: May cause an allergic skin reaction.

Respiratory sensitisation: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Components:

POLYMER:

Test Type: Maximisation Test (GPMT)
Species: Guinea pig
Assessment: May cause sensitization by skin contact.
Result: The product is a skin sensitiser, sub-category 1A.
Assessment: May cause sensitization by inhalation.
Result: The product is a respiratory sensitiser, sub-category 1A.

Genotoxicity in vitro:	Test Type: Ames test Result: negative Remarks: Information given is based on data obtained from similar substances.
Genotoxicity in vivo:	Test Type: In vivo micronucleus test Test species: Rat Method: OECD Test Guideline 474 Remarks: Information given is based on data obtained from similar substances.

URETHANE PREPOLYMER:

Assessment: May cause sensitization by skin contact.
Assessment: May cause sensitization by inhalation.

4,4'-DIPHENYLMETHANE DIISOCYANATE:

Assessment: May cause sensitization by inhalation.
Assessment: May cause sensitization by skin contact.
Germ cell mutagenicity
Not classified based on available information.

PROPYLENE CARBONATE:

Acute oral toxicity:	LD 50 (Rat): 29.1 g/kg
Acute dermal toxicity:	LD 50 (Rabbit): > 24 g/kg
Skin corrosion/irritation:	Causes skin irritation. Species: Rabbit Method: OECD Test Guideline 404 Result: Not irritating to skin
Serious eye damage/eye irritation	Causes serious eye irritation. Species: Rabbit Result: Irritating to eyes Method: OECD Test Guideline 405

Product: Remarks: May cause skin irritation and/or dermatitis. Vapours may cause irritation to the eyes, respiratory system and the skin., Causes serious eye irritation.

11. Toxicological Information (continued)

PROPYLENE CARBONATE:

Genotoxicity in vitro: Test Type: Ames test
Test species: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Genotoxicity in vivo: Test Type: Micronucleus test
Test species: Mouse
Cell type: Bone marrow
Method: OECD Test Guideline 474
Result: negative

Carcinogenicity:

Not classified based on available information.

Product:

Carcinogenicity - Assessment:
Methylene bisphenylisocyanate (MDI) aerosol has been reported to be irritating to lungs at a concentration of 1 mg/m3 with no effect observed at 0.2 mg/m3. Although MDI has been reported to cause an increase in non-carcinogenic lung tumors and a single carcinogenic lung tumor at very high concentrations (6 mg/m3), it is not classified as a carcinogen by IARC, NTP or OSHA.

Reproductive toxicity

Not classified based on available information.
STOT - single exposure
May cause respiratory irritation.

Components:

POLYMER:

Exposure routes: Inhalation
Target Organs: Respiratory Tract
Assessment: May cause respiratory irritation.
Components:

4,4'-DIPHENYLMETHANE DIISOCYANATE:

Exposure routes: Inhalation
Target Organs: Respiratory system
Assessment: May cause respiratory irritation.

STOT - repeated exposure
May cause damage to organs (Respiratory system, Respiratory Tract) through prolonged or repeated exposure if inhaled.
Components:

POLYMER:

Exposure routes: Inhalation
Target Organs: Respiratory Tract
Assessment: May cause damage to organs through prolonged or repeated exposure

4,4'-DIPHENYLMETHANE DIISOCYANATE:

Exposure routes: Inhalation
Target Organs: Respiratory system
Assessment: May cause damage to organs through prolonged or repeated exposure.

11. Toxicological Information (continued)

Aspiration toxicity
Not classified based on available information.
Further information
Product:
Remarks: No data available

Components:

4,4'-DIPHENYLMETHANE DIISOCYANATE:
Remarks: Lung

Carcinogenicity:

IARC	Group 2B: Possibly carcinogenic to humans
	TALC 14807-96-6
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

12. Ecological Information

Ecotoxicity
Components:

POLYMER:

Toxicity to fish:	LC 50 (Oryzias latipes (Japanese medaka)): > 3,000 mg/l Exposure time: 96 h Test Type: semi-static test Remarks: Information given is based on data obtained from similar substances.
Toxicity to daphnia and other aquatic invertebrates:	(Daphnia magna (Water flea)): > 1,000 mg/l Exposure time: 24 h Test Type: static test Method: OECD Test Guideline 202 Remarks: Information given is based on data obtained from similar substances.
Toxicity to algae:	NOEC (Desmodesmus subspicatus (green algae)): 1,640 mg/l End point: Growth inhibition Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 Remarks: Information given is based on data obtained from similar substances.

4,4'-DIPHENYLMETHANE DIISOCYANATE:

Toxicity to fish:	LC50 (Oryzias latipes (Orange-red killifish)): > 3,000 mg/l Exposure time: 96 h Test Type: semi-static test Remarks: Information given is based on data obtained from similar substances.
Toxicity to daphnia and other aquatic invertebrates:	EC50 (Water flea (Daphnia magna)): > 100 mg/l Exposure time: 24 h Test Type: static test Method: OECD Test Guideline 202 Remarks: Information given is based on data obtained from similar substances.

12. Ecological Information

PROPYLENE CARBONATE:

Toxicity to fish:
LC50 (Cyprinus carpio (Carp)): > 1,000 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: Directive 67/548/EEC, Annex V, C.1.

Toxicity to daphnia and other aquatic invertebrates:
EC50 (Water flea (Daphnia magna)): > 1,000 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to algae:
EC50 (Desmodesmus subspicatus (green algae)): > 900 mg/l
End point: Growth inhibition
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
NOEC (Desmodesmus subspicatus (green algae)): 900 mg/l
End point: Growth inhibition
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
Persistence and degradability

POLYMER:

Biodegradability:
Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 302C

4,4'-DIPHENYLMETHANE DIISOCYANATE:

Biodegradability:
Result: Not biodegradable
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 302C
Remarks: Information given is based on data obtained from similar substances.

PROPYLENE CARBONATE:

Biodegradability:
Result: Readily biodegradable
Biodegradation: 87.1 %
Exposure time: 29 d
Method: OECD Test Guideline 301B
Bioaccumulative potential

PROPYLENE CARBONATE:

Partition coefficient: n-octanol/water:
log Pow: -0.41
Mobility in soil No data available
Other adverse effects No data available

Additional ecological information:
No data available

13. Disposal Considerations

Disposal: Any disposal practice must be in compliance with all federal, state and local laws and regulations. Chemical additions, processing, storage, or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate. Waste characterization and disposal compliance is the responsibility solely of the party generating the waste or deciding to discard or dispose of the material.

Refer to RCRA 4 CFR 261 and/or any other appropriate federal, state or local requirements for proper classification information.

Container Disposal: Drums/containers must be thoroughly drained to process or storage vessels before removal to an appropriate area for subsequent decontamination. Drums/containers must be decontaminated in properly ventilated areas by personnel protected from the inhalation of isocyanate vapors. Spray or pour 1 to 5 gallons of decontamination solution into the drum making sure the walls are well rinsed. Let the drum/container soak unsealed for 48 hours. Pour out the decontamination solution and triple rise the empty container. Puncture or otherwise destroy the rinsed container before disposal. **Do not heat or cut empty containers with electric or gas torch**.

RCRA/EPA Waste Information:The generation of waste should be avoided or minimized whenever possible. Chemical waste, even small quanities, should never be poured down draines, sewers or waterways.

14. Transport Information

MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES
Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER
Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO
Not dangerous goods

INTERNATIONAL MARITIME DANGEROUS GOODS
Not dangerous goods

TRANSPORT CANADA - INLAND WATERWAYS
Not dangerous goods

TRANSPORT CANADA - RAIL
Not dangerous goods

TRANSPORT CANADA - ROAD
Not dangerous goods

U.S. DOT - INLAND WATERWAYS
Not dangerous goods

U.S. DOT - RAIL
Not dangerous goods

U.S. DOT - ROAD
Not dangerous

*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID

Marine pollutant: no

15. Regulatory Information

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Component	CAS Number	Component RQ (lbs)	Calculated product RQ (lbs)
4,4'-DIPHENYLMETHANE DIISOCYANATE	101-68-8	5000	14206.159791

SARA 311/312 Hazards: Acute Health Hazard
Chronic Health Hazard

SARA 313 Component(s): 4,4'-DIPHENYLMETHANE DIISOCYANATE 101-68-8 35.51 %

California Prop 65: WARNING! This product contains a chemical known to the State of California to cause cancer.
QUARTZ / SAND 14808-60-7

The components of this product are reported in the following inventories:

TSCA: On TSCA Inventory

DSL: This product contains one or several components that are not on the Canadian DSL and have annual quantity limits.

AUSTR: On the inventory, or in compliance with the inventory

ENCS: Not in compliance with the inventory

KECL: On the inventory, or in compliance with the inventory

PICCS: On the inventory, or in compliance with the inventory

IECSC: On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

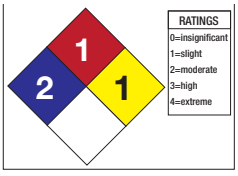
Registration: Trade Secret

Chemical Name	Identification Number
Polymer	254504001-5759
Scavenger	254504001-5709
Urethane Prepolymer	8009865572P

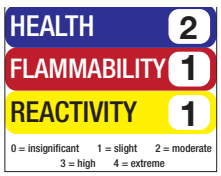
16. Other Information

This material is designed and intended to be pumped, not sprayed. MDI becomes more hazardous when atomized(sprayed). The following data is derived from tests performed when the material is sprayed and should be considered but may not apply to pumping operations as recommended by the manufacturer. Harmful if inhaled. Toxic fumes are released in fire situations.

NFPA Ratings:



HMIS Ratings:



All statements, technical information and recommendations contained herein are based upon available scientific test or data which we believe to be reliable since we cannot anticipate all conditions under which this information and our products or the products of other manufacturers in combination with our products may be used. Emecole Metro makes no warranties, express or implied, and assumes no responsibility in connection with any use of this information.

Safety Data Sheet (SDS)

August 19, 2019
Rev. 1

1. Identification

PRODUCT NAME: RadonSeal 455, PART B
CHEMICAL FAMILY: Curative
MANUFACTURER / SUPPLIER: Novion, Inc.
18 L'Hermitage Drive
Shelton, CT 06484

TELEPHONE: 1-800-472-0603

2. Hazard(s) Identification

Information on likely routes of exposure: Inhalation
Skin contact
Eye Contact

IngestionSkin Contact: No irritation is likely to develop following short contact periods with skin. Prolonged or repeated exposure can cause skin irritation, reddening, dermatitis and in some individuals, sensitization. Skin contact may result in allergic skin reactions or respiratory sensitization but is not expected to result in absorption or amounts sufficient to cause other adverse effects.

Eye Contact: As a liquid or dust may cause irritation, inflammation and or damage to sensitive eye tissue. Corneal injury is unlikely.

Ingestion: Can result in irritation and corrosive action in mouth, stomach tissue and digestive tract.

Inhalation: Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Prolonged or repeated breathing of dust may result in progressive and permanent lung disease (fibrosis) which may cause death from respiratory and/or heart failure. Symptoms include coughing and difficult breathing which becomes worse with physical activity.

Precautionary Statements: Do not handle until all safety precautions have been read and understood. Do not breathe vapors. In case of inadequate ventilation wear respiratory protection. Wear protective gloves and eye protection. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Store locked up. Keep away from children. Dispose of contents and container in accordance with applicable local, regional and national regulations.

Signal Word: WARNING

Carcinogenicity (Inhalation): Category 2
Reproductive toxicity: Category 2

Hazard Statement: Suspected of causing cancer if inhaled. Suspected of damaging fertility or the unborn child.

Persons With Known Respiratory or Allergy Problems Must Not Be Exposed to This Product.

Carcinogenicity: This product may contain non-asbestiform talc. Inhalation of non-asbestiform talc has been shown to cause lung and adrenal cancer in female rats and adrenal gland cancer in male rats. It did not cause cancer in male or female mice similarly exposed. Talc is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA).

Warning: Our products may contain trace amounts of some chemicals considered by the State of California (Proposition 65) to be carcinogens or reproductive toxicants. www.P65Warnings.ca.gov

3. Composition / Information on Ingredients

Chemical Name	CAS No.	Classification	Concentration
TALC	14807-96-6	This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).	22.73%
PIPERAZINE	110-85-0	Flam. Sol. 1; H228 Skin Corr. 1B; H314 Eye Dam. 1; H318 Resp. Sens. 1B; H334 Skin Sens. 1B; H317 Repr. 2; H361	0.76%
CARBON BLACK	1333-86-4	Carc. 2; H351	0.15%

4. First Aid Measures

Eyes: Open lids wide and flush with large quantities of water for at least 15 minutes. Remove contact lenses if present and easy to remove. Protect unharmed eye. If eye irritation persists, consult a specialist.

Skin: First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water. Remove contaminated clothing and shoes. Wash clothing before reuse. Consult a physician if irritation continues after washing or if swelling or rash developes.

Ingestion: Seek medical attention. Do not induce vomiting unless directed to do so by medical personnel. (Never give anything by mouth to an unconscious person.) Do not give milk or alcoholic beverages.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility immediately.

NOTE TO PHYSICIAN:

Hazards: No information available.

Treatment: No information available.

Most important symptoms and effects, both acute and delayed:
No symptoms known or expected.
Suspected of causing cancer if inhaled.
Suspected of damaging fertility or the unborn child.

5. Fire Fighting Measures

Flashpoint and Method: (>)200.1 °F I 93.4 °C, Seta closed cup

Extinguishing Media: Water mist, Carbon dioxide (C02), Dry chemical, Foam

Protective equipment: Incase of fire, avoid breathing smoke, use normal fire fighting equipment including a NIOSH approved, self contained breathing apparatus (SCBA). Use water to cool fire exposed surfaces and containers. (avoid spreading burning liquid with water used for cooling purposes).

Hazardous combustion products: Toxic fumes, Aldehydes, Ketones, carbon dioxide and carbon monoxide, halogenated hydrocarbons

Unsuitable extinguishing media: High volume water jet. DO NOT direct a solid stream of water or foam into hot, burning pools of liquid since this may cause frothing and increase fire intensity.

NFPA Flammable and Combustible Liquids Classification: Combustible Liquid Class IIIB

6. Accidental Release Measures

Spill: Evacuate spill area. With adequate ventilation and appropriate personal protective equipment, cover the area with an inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). and transfer to metal waste containers.

Clean up: Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source, dike area of spill to prevent spreading. Remaining liquid may be taken up on sand, clay, earth, floor absorbent, or other absorbent material and shoveled into containers.

Disposal: Any disposal practice must be in compliance with all federal, state and local laws and regulations. Chemical additions, processing, storage, or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate. Waste characterization and disposal compliance is the responsibility solely of the party generating the waste or deciding to discard or dispose of the material. Refer to

RCRA 40 CFR 261 and/or any other appropriate federal, state or local requirements for proper classification information.

Container Disposal: Drums/containers must be thoroughly drained to process or storage vessels before removal to an appropriate area for subsequent decontamination. Drums/containers must be decontaminated in properly ventilated areas by personnel protected from the inhalation of isocyanate vapors. Spray or pour 1 to 5 gallons of decontamination solution into the drum making sure the walls are well rinsed. Let the drum/container soak unsealed for 48 hours. Pour out the decontamination solution and triple rise the empty container. Puncture or otherwise destroy the rinsed container before disposal. **Do not heat or cut empty containers with electric or gas torch.**

7. Handling and Storage

Storage: When stored between 60ºF and 85ºF (15º and 30ºC) in sealed containers, typical shelf life is 6 months or more from the date of manufacturer. Store containers tightly closed in a cool, dry and well-ventilated area, away from incompatible substances.

Handling: Use personal protective equipment when transferring material to or from drums, totes or other containers. Safety glasses and gloves are the minimum protection. Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.
Avoid contact with skin and eyes.Smoking, eating and drinking should be prohibited in the application area.

8. Exposure Controls / Personal Protection

Components with workplace control parameters

Components	CAS No.	Value Type (form of exposure)	Control Parameters (permissable concertration)	Basis
TALC	14807-96-6	TWA	2 mg/m3 Respirable fraction.	ACGIH
		REL	2 mg/m3 Respirable fraction.	NIOSH/GUIDE
		TWA	0.1 mg/m3 Respirable fraction.	Z3
		TWA	0.3 mg/m3 Total dust	Z3
CARBON BLACK	1333-86-4	REL	0.1 mg/m3	NIOSH/GUIDE
		REL	3.5 mg/m3	NIOSH/GUIDE
		PEL	3.5 mg/m3	OSHA_TRANS
		TWA	3 mg/m3 Ihalable fraction.	ACGIH
PIPERAZINE	110-85-0	TWA	0.03 ppm Inhalable fraction and vapor (as piperazine)	ACGIH
		TWA	0.03 ppm Inhalable fraction and vapor (as piperazine)	ACGIHLIS_P

8. Exposure Controls / Personal Protection (continued)

Engineering measures: Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Respiratory protection: In the case of vapour formation use a respirator with an approved filter.
A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by airpurifying respirators is limited. Use a positive pressure, air supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

Hand protection:
Material : polyethylene
Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection: Not required under normal conditions of use. Wear splashproof safety goggles if material could be misted or splashed into eyes.

Skin and body protection:
Wear as appropriate: impervious clothing and safety shoes. Choose body protection according to the amount and concentration of the dangerous substance at the work place. Wear resistant gloves (consult your safety equipment supplier).

Hygiene measures: Wash hands before breaks and at the end of workday.
When using do not eat or drink.
When using do not smoke.

9. Physical and Chemical Properties

VP: 3 hPa (25 °C) Calculated Vapor Pressure

VD: (>) 1 (AIR=1)

Color: Black

Flash Point: >200.1°F I 93.4°C, Seta closed cup

Solubility In Water: No data available

Density: 1.23 g/cm3 (77.00 °F)

Evaporation Rate: 1 (Ethyl Ether)

Boiling Point: No data

Appearance: Liquid

Viscosity: No data available

10. Stability and Reactivity

Stability: Stable under recommended storage conditions.

Reactivity: None known

Hazardous Decomposition Products: No hazardous decomposition products are known.

Thermal Decomposition: No data

Incompatible products: Strong acids, alkalis, isocyanates, strong oxidizing agents, phosphorus compounds.

Conditions to avoid: Heat and exposure to moisture.

Possibility of hazardous reactions: Product will not undergo hazardous polymerization.

11. Toxicological Information

Information on likely routes of exposure: Inhalation, skin contact, eye contact, ingestion

Acute toxicity

Not classified based on available information.

Components:

PIPERAZINE:

Acute oral toxicity:	LD50 (Rat): ca. 2,600 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity:	LC0 (Rat, male and female): 1.61 mg/l Exposure time: 8 h Test atmosphere: vapour

CARBON BLACK:

Acute oral toxicity:	LD 50 (Rat): > 10,000 mg/kg
Acute dermal toxicity:	LD 50 (Rabbit): > 3 g/kg

Skin corrosion/irritation:
Not classified based on available information.

TALC:
Result: Possibly irritating to skin

PIPERAZINE:
Result: Corrosive after 3 minutes to 1 hour of exposure

CARBON BLACK:
Result: Not irritating to skin
Serious eye damage/eye irritation
Not classified based on available information.
Product: Remarks: Unlikely to cause eye irritation or injury.

TALC: Result: Possibly irritating to eyes

PIPERAZINE: Result: Corrosive to eyes

CARBON BLACK: Result: Slightly irritating to eyes

Respiratory or skin sensitisation

Skin sensitisation: Not classified based on available information.

Respiratory sensitisation: Not classified based on available information.

PIPERAZINE:	Assessment: The product is a respiratory sensitiser, sub-category 1B. Assessment: The product is a skin sensitiser, sub-category 1B.
Germ cell mutagenicity:	Not classified based on available information.
Carcinogenicity:	Suspected of causing cancer if inhaled.
CARBON BLACK:	
Carcinogenicity:	Limited evidence of carcinogenicity in inhalation studies with animals.
Reproductive toxicity:	Suspected of damaging fertility or the unborn child.

PIPERAZINE:

Reproductive toxicity: Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.
STOT - single exposure: Not classified based on available information.
STOT - repeated exposure: Not classified based on available information.
Aspiration toxicity: Not classified based on available information.

CARCINOGENICITY:

IARC: Group 2B: Possibly carcinogenic to humans TALC 14807-96-6 / CARBON BLACK 1333-86-4

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

12. Ecological Information

Ecotoxicity

PIPERAZINE:

Toxicity to fish:	LC 50 (Poecilia reticulata (guppy)): > 1,800 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates:	EC 50 (Water flea (Daphnia magna)): 21 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae:	EC 50 (Pseudokirchneriella subcapitata (green algae): >1,000 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):	NOEC (Water flea (Daphnia magna)): 12.5 mg/l Exposure time: 21 d Method: OECD Test Guideline 211

Persistence and degradability

PIPERAZINE:

Biodegradability:	Result: Readily biodegradable Biodegradation: 70 % Exposure time: 28 d Method: OECD Test Guideline 301F

Bioaccumulative potential

PIPERAZINE:

Partition coefficient: noctanol/water:	log Pow: -1.17
Mobility in soil:	No data available
Other adverse effects:	No data available

Product:

Additional ecological information:	No data available

13. Disposal Considerations

Disposal: Any disposal practice must be in compliance with all federal, state and local laws and regulations. Chemical additions, processing, storage, or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate. Waste characterization and disposal compliance is the responsibility solely of the party generating the waste or deciding to discard or dispose of the material.

Refer to RCRA 4 CFR 261 and/or any other appropriate federal, state or local requirements for proper classification information.

Container Disposal: Drums/containers must be thoroughly drained to process or storage vessels before removal to an appropriate area for subsequent decontamination. Drums/containers must be decontaminated in properly ventilated areas by personnel protected from the inhalation of isocyanate vapors. Spray or pour 1 to 5 gallons of decontamination solution into the drum making sure the walls are well rinsed. Let the drum/container soak unsealed for 48 hours. Pour out the decontamination solution and triple rise the empty container. Puncture or otherwise destroy the rinsed container before disposal. **Do not heat or cut empty containers with electric or gas torch.**

RCRA/EPA Waste Information:The generation of waste should be avoided or minimized whenever possible. Chemical waste, even small quanities, should never be poured down draines, sewers or waterways.

Safety Data Sheet (SDS)

14. Transport Information

DOT (Domestic surface): Shipping name; Compond resin. Not regulated (Class 55)

International transport regulations

U.S. DOT - ROAD

Not dangerous goods

U.S. DOT - RAIL

Not dangerous goods

U.S. DOT - INLAND WATERWAYS

Not dangerous goods

TRANSPORT CANADA - ROAD

Not dangerous goods

TRANSPORT CANADA - RAIL

Not dangerous goods

TRANSPORT CANADA - INLAND WATERWAYS

Not dangerous goods

INTERNATIONAL MARITIME DANGEROUS GOODS

Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

Not dangerous goods

MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

Not dangerous goods

*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID

Marine pollutant: no

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

Safety Data Sheet (SDS)

15. Regulatory Information

SARA 311/312 Hazards: Chronic Health Hazard

SARA 313 Component(s)SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65 WARNING! This product contains a chemical known to the State of California to cause cancer.

CARBON BLACK	1333-86-4
QUARTZ / SAND	14808-60-7
FURAN	110-00-9
PROPYLENE OXIDE	75-56-9
ACETALDEHYDE	75-07-0

The components of this product are reported in the following inventories:

TSCA: On the inventory, or in compliance with the inventory

DSL: All components of this product are on the Canadian DSL.

AUSTR: On the inventory, or in compliance with the inventory

ENCS: On the inventory, or in compliance with the inventory

KECL: On the inventory, or in compliance with the inventory

PICCS: Not in compliance with the inventory

IECSC: On the inventory, or in compliance with the inventory

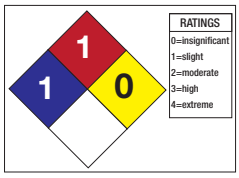
Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

16. Other Information

All statements, technical information and recommendations contained herein are based upon available scientific test or data which we believe to be reliable since we cannot anticipate all conditions under which this information and our products or the products of other manufacturers in combination with our products may be used. Emecole Metro makes no warranties, express or implied, and assumes no responsibility in connection with any use of this information.

NFPA Ratings:



HMIS Ratings:

NFPA Flammable and Combustible Liquids Classification: Combustible Liquid Class IIIB