Conforms to HazCom 2012/ United States

Safety Data Sheet

Section 1. Identification

GHS product Identifier Polyguard NTH 5600 Epoxy Base-Part A
Other means of identification Not available

Relevant identified used of the substance or mixtures and uses advised against
Used for protection of pipeline field joints, girth welds, valves, fittings. This product may also be used to repair holidays on FBE coated pipes and as a pipeline rehabilitation coating.

Supplier's details
Polyguard Products, Inc.
4101 South Interstate 45
Ennis, TX 75119
Tel: (214) 515-5000

Emergency telephone number) with hours of operation)
CHEMTREC, US 1-800-424-9300 International 1-703-527-3887
(24/7)

Section 2. Hazards Identification

OSHA/HCS status
This material is considered hazardous by the OSHA Hazardous Communications Standard (49CFR1910.1200). This SDS contains valuable information critical to the safe handling and proper use of the product and should be retained and available for employees and other users of this product.

Classification of the substance or mixture
Skin Irritation- Category 2
Skin Sensitizer- Category 1
Aquatic Hazard (Long-term)- Category 2

GHS label elements
Hazard Pictogram

Signal word **DANGER**
Hazard statement
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H305i, H372 - May cause cancer by inhalation
H412- Harmful to aquatic life with long lasting effects

Precautionary statements
Prevention
P201- Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P281 - Use personal protective equipment as required.
P280- Wear protective gloves. Wear eye or face protection. Wear protective clothing.
P273 - Avoid release to the environment.
P260 - Do not breathe dust/fume/mist/vapors/spray
P261- Avoid breathing dust/fume/gas/mist/vapor/spray.
P270- Do not eat, drink or smoke when using this product.
P264- Wash hands thoroughly after handling.
P272- Contaminated work clothing should not be allowed out of the work place.

Response
P391- Collect spillage
P314- Get medical attention if you feel unwell.
P308, P313- IF exposed or concerned: get medical attention.
P304,P340,P310- IF INHALED: remove victim to fresh air and keep at rest position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.

Section 2. Hazards Identification

Response

P301,P310,P330,P331-IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. DO NOT induce vomiting.
P303,P361,P353,- IF ON SKIN (or hair) Take off immediately all contaminated clothing. Rinse skin with water or shower.
P302, P352, P363- IF ON SKIN: wash with plenty of soap and water. Wash contaminated clothing before reuse.
P333,P313- If skin irritation or rash occurs: Get medical attention.
P305,P351,P338,P310- IF IN EYES: rinse caustiously with water for 20 minutes. Remove contacts lenses if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

Storage P405- Stored locked up

Disposal P501- Dispose of contents and container in accordance with local, regional and international regulations.

Hazards not otherwise classified None known

Section 3. Composition/Information on Ingredients

Substance/Mixture Mixture

Other means of identification Not available

Ingredient name	%	CAS #
Modified Bisphenol A Diglycidyl Ether	**4-15**	**Proprietary**
Epoxy Phenol Novolac	**4-15**	**28064-14-4**
Reactive diluent	**2-10**	**Proprietary**
Bisphenol A Digylcidyl Ether	**4-15**	**25085-99-8**
Epicholorhydrin-Trimethanol Propane copolymer	**10-25**	**30499-70-8**
Crystalline silica (quartz)	**20-45**	**14808-60-7**
Titanium Dioxide	**0.5-2**	**13463-67-7**
Aluminum Silicate	**0.5-4**	**1332-58-7**

The exact percentage (concentration) in the composition has been withheld as a trade secret.
Occupational exposure limits, if available are listed in section 8.

Section 4. First Aid Measures

Description of necessary first aid measures.

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

Inhalation Remove victim to fresh air and keep at rest position comfortable for breathing. If breathing is difficult, immediately get medical assistance.

Skin contact Immediately remove contaminated clothing. Rinse skin with water or shower. Wash with plenty of soap and water. Wash clothing before reuse. If skin irritation or rash occurs: Get medical attention.

Ingestion Immediately call a POISON CENTER or physician. Rinse mouth. DO NOT induce vomiting. Never give anything by mouth to an unconscious person.

Section 4. First Aid Measures

Most important symptoms/effects, acute and delayed

Eye contact	May cause irritation.
Inhalation	High airborne concentrations of vapors resulting from heating, misting, and spraying may cause irritation of the respiratory tract and mucous membranes.
Skin contact	May cause allergic skin reaction. Causes skin irritation.
Ingestion	May cause irritation of the digestive tract.

Over-exposure signs/symptoms

Eye contact	May cause irritation.
Inhalation	May cause irritation or cancer
Skin contact	Prolonged and repeated contact may cause skin irritation and dermatitis.
Ingestion	No known significant effects or critical hazards

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

Notes to physician:	Treat symptomatically.
Specific treatments	No specific treatment
Protection of first aiders	No action shall be taken involving any personal risk or without suitable training.

Section 5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media	Use water spray, ABC type dry chemical extinguishers, foam or carbon dioxide. Water and foam may cause frothing.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Product will burn if ignited. Closed containers may rupture when exposed to extreme heat.
Hazardous thermal decomposition products	Decomposition products may include the following materials: Carbon Dioxide Carbon Monoxide Aldehydes Various hydrocarbons Phenols
Special protective equipment	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full-face piece operated in a positive pressure mode.
Special protective actions for fire fighters	Promptly isolate the scene by removing all persons from the vicinity of the incident is there is a fire. No action shall be taken involving any personal risks or without suitable training.

Section 6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures.

For non emergency personal	No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk thru spilled material. Shut off all ignition sources. No smoking, flares or flames in hazard area.Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in “For non-emergency personnel.”

Section 6. Accidental Release Measures

Enviromental precautions

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

Methods and materials for containment and cleaning up

Spills

Wear proper personal protective clothing and equipment. Approach release from upwind direction. If spilled in an enclosed area, ventilate and eliminate ignition sources. Contain spill by diking with sand, earth or other non-combustible material. Absorb spill with an inert material. Place into a labeled, closed container. Store in a safe location to await disposal.

Section 7. Handling and Storage

Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment (see Section 8). Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid inhalation of aerosol, mist, vapor, spray, fume or vapor. Avoid release to the environment. Do not cut, weld on or near the container. Use under well-ventilated conditions.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Wash contaminated clothing before reuse. Discard shoes contaminated with this product. See section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry cool and well-ventilated area away from incompatible materials (see section 10) and food and drink. Keep away from heat, sparks and open flames. Keep container tightly closed and sealed until ready to use. Do not store in unlabeled containers. Empty containers contain residual product which may exhibit hazards of the product. Do not reuse empty containers.

Section 8. Exposure Controls/Personal Protection

Occupational exposure limits

Ingredient name	Exposure limits
Crystalline Silica, quartz (inpurity)	**NIOSH REL (United States, 2016)** Ca TWA: 0.05 mg/m^3
Titanium Dioxide	**OSHA PEL (United States, 2016)** TWA: 15 mg/m^3
Aluminum Silicate	**NIOSH REL (United States, 2016)** TWA: 10 mg/m^3 (total), 5 mg/m^3 (resp.) **OSHA PEL (United States, 2016)** TWA: 15 mg/m^3 (total), 5 mg/m^3 (resp.)

Section 8. Exposure Controls/Personal Protection

Appropriate engineering controls	If user operations generates dust, fumes, gas, vapor or mist, use process enclosures, or local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory level.
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.
Hygiene measure	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking, and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	Safety eyewear complying with an approved standard should be used when risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases and dusts.
Skin Protection	
Hand protection	Chemical- resistant, imprevious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Body protection	Personal protective equipment for the body should be selected based on the task being preformed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection	Appropriate footwear and any additional skin protection measures should be selected based on the task being preformed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training , and other important aspects of use.

Section 9. Physical and Chemical Properties

Appearance	
Physical state	Viscous Liquid – paste like
Color	White
Odor	Slight Aromatic
Odor threshold	Not available
pH	Not applicable
Melting point	Not applicable
Boiling point	< 392 °F
Flash Point	Not determined
Evaporation rate	Not applicable
Flammability (solid, gas)	Not determined
Lower & upper explosive (flammable) limits	Not determined
Vapor density	Heavier than air
Vapor pressure	< 1 mm Hg @ 20 °C
Relative density	1.17
Solubility in water	Negligible
Partition coefficient: n- octanol/water	Not available
Auto- ignition temperature	Not determined
Decomposition temperature	Not determined
Viscosity	280,000 to 360,000 cps
VOC	0 g/l

Section 10. Stability and Reactivity

Reactivity Exothermic reactions including polymerization may occur in contact with amines, strong acids, strong bases, alcohols, strong oxidizing agents and excessive heat.

Chemical stability Exposure to excessive heat and ignition sources will cause product to auto-polymerize at very high temperatures.

Possibility of hazardous reactions Under normal conditions of storage and use, hazardous reaction will not occur.

Conditions to avoid: Excessive heat, sources of ignition.

Incompatible materials Reactive or incompatible with the following materials: Strong acids, bases, and oxidizing agents.

Hazardous decomposition products Thermal decomposition may produce smoke, carbon dioxide, carbon monoxide, aldehydes and other products of incomplete combustion.

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Epoxy Phenol Novolac	LD50 Dermal	Rat	> 2000 mg/kg	-
	LD50 Oral	Rat	> 2000 mg/kg	-
Bisphenol A Digylcidyl Ether	LD50 Oral	Rat	17100 mg/kg	-
Crystalline Silica, quartz	LD50 Oral	Rat Mouse	500 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Titanium dioxide	Skin- Mild irritant	Human	-	72 hours 300 µg intermittent	-
Bisphenol A Digylcidyl Ether	Skin- Moderate irritant	Rabbit	-	24 hours 500 µl	-

Sensitization There is no data available

Mutagenicity There is no data available

Carcinogenicity

Classification

Product/ingredient name	OSHA	IARC	NTP
Titanium dioxide		2B	
Crystalline Silica, quartz		1	Known Human Carcinogen

Reproductive toxicity There is no data available

Teratogenicity There is no data available

Specific target organ toxicity (single exposure) There is no data available

Specific target organ toxicity (repeated exposure) There is no data available

Aspiration hazard There is no data available

Information on the likely routes of exposure Routes of entry anticipated: dermal contact, inhalation.

Section 11. Toxicological Information

Potential acute health effects

Eye contact	Eye irritation
Inhalation	May cause irritation of the respiratory tract and mucous membranes.
Skin contact	Skin irritation. May cause allergic skin reaction.
Ingestion	Cause irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	No known significant effects or critical hazards
Inhalation	No known significant effects or critical hazards
Skin contact	No known significant effects or critical hazards
Ingestion	No known significant effects or critical hazards

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

Short term exposure

Potential immediate effects	No known significant effects or critical hazards
Potential delayed effects	No known significant effects or critical hazards

Long term exposure

Potential immediate effects	No known significant effects or critical hazards
Potential delayed effects	No known significant effects or critical hazards

Potential chronic health effects

General	No known significant effects or critical hazards
Carcinogenicity	No known significant effects or critical hazards
Mutagenicity	No known significant effects or critical hazards
Teratogenicity	No known significant effects or critical hazards
Developmental effects	No known significant effects or critical hazards
Fertility effects	No known significant effects or critical hazards

Numerical measures of toxicity

Acute toxicity estimates	There is no data available

Section 12. Ecological Information

Toxicity	There is no data available
Persistence and degradability	Not readily biodegradable
Bioaccumulative potential	There is no data available
Mobility in soil	
Soil/water partition coefficient (K_{OC})	There is no data available.
Other adverse effects	No known significant effects or critical hazards

Section 13. Disposal Considerations

Disposal methods

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor.

Section 14. Transportation Information

AERG: 171
Regulatory Information:

	DOT	TDG	IMDG	IATA
UN Number	UN 3082	UN3082	UN3802	UN3802
Proper Shipping name	Environmentally Hazardous Substance, liquid, N.O.S (oxairane,2,2'-[1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis -homopolyer). Marine pollutant (Phenol,polymer with formaldehyde, glycidyl ether, Oxirane,2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis -homopolymer)	Environmentally Hazardous Substance, liquid, N.O.S (oxairane,2,2'-[1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis-homopolyer). Marine pollutant (Phenol,polymer with formaldehyde, glycidyl ether, Oxirane,2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis-homopolymer)	Environmentally Hazardous Substance, liquid, N.O.S (oxairane,2,2'-[1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis-homopolyer). Marine pollutant (Phenol,polymer with formaldehyde, glycidyl ether, Oxirane,2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis-homopolymer)	Environmentally Hazardous Substance, liquid, N.O.S (oxairane,2,2'-[1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis-homopolyer).
Transport hazard class(es)	Class 9	Class 9	Class 9	Class 9
Packing group	III	III	III	III
Environmental Hazards	Yes	Yes	Yes	Yes
Additional Information	Non-bulk packages of this product are not regulated as hazardous materials unless transported by inland waterway. The marine pollutant mark is not required when transported on inland waterways in sizes of ≤ 5 L or ≤ 5 kg	This product is not regulated as a dangerous good when transported by road or rail.	The marine pollutant mark is not required when transported on inland waterways in sizes of ≤ 5 L or ≤ 5 kg	The environmentally hazardous substance mark is not required when transported in sizes of ≤ 5 L or ≤ 5 kg

Section 15. Regulatory Information

U.S. Federal regulations: **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined
United States inventory (TSCA 8 b): all components are listed or exempted

Composition/information on ingredients

SARA 304 RQ Not applicable
SARA 311/312 Not applicable
SARA 313 Not applicable

State regulations

California Prop.65

WARNING: This product can expose you to chemicals including Crystalline Silica and Titanium Dioxide, which are known to the State of California to cause cancer. For more information, visit www.P65Warnings.ca.gov.

16. Other Information

Date of revision	**4-6-2020**
Date of previous issue	**6-15-2015**
Revisions	**Update to reflect latest regulations.**
Version	**2**
Prepared by	**C. Rogalski**

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

Conforms to HazCom 2012/ United States

Safety Data Sheet

Section 1. Identification

GHS product Identifier Polyguard NHT-5600 Epoxy -Part B
Other means of identification Not available

Relevant identified used of the substance or mixtures and uses advised against
Used for protection of pipeline field joints, girth welds, valves, fittings. This product may also be used to repair holidays on FBE coated pipes and as a pipeline rehabilitation coating.

Supplier's details
Polyguard Products, Inc.
4101 South Interstate 45
Ennis, TX 75119
Tel: (214) 515-5000

Emergency telephone number) with hours of operation)
CHEMTREC, US 1-800-424-9300 International 1-703-527-3887
(24/7)

Section 2. Hazards Identification

OSHA/HCS status
This material is considered hazardous by the OSHA Hazardous Communications Standard (49CFR1910.1200). This SDS contains valuable information critical to the safe handling and proper use of the product and should be retained and available for employees and other users of this product.

Classification of the substance or mixture
Skin Irritation- Category 2
Skin Sensitizer- Category 1
Aquatic Hazard (Long-term)- Category 2

GHS label elements
Hazard Pictogram

Signal word **DANGER**
Hazard statement
H302 - Harmful if swallowed
H312 - Harmful in contact with skin.
H317 - May cause an allergic skin reaction
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H362 - May cause harm to breast-fed children.
H360 - May damage the unborn child. Suspected of damaging fertility.
H314- Causes severe skin burns and eye damage.
H400- Very toxic to aquatic life.

Precautionary statements
Prevention
P201- Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P281 - Use personal protective equipment as required.
P280- Wear protective gloves. Wear eye or face protection. Wear protective clothing.
P273 - Avoid release to the environment.
P263 – Avoid contact during pregnancy/ while nursing.
P261- Avoid breathing dust/fume/gas/mist/vapor/spray.
P270- Do not eat, drink or smoke when using this product.
P264- Wash hands thoroughly after handling.
P272- Contaminated work clothing should not be allowed out of the work place.

Response
P391- Collect spillage
P314- Get medical attention if you feel unwell.
P308, P313- IF exposed or concerned: get medical attention.
P304,P340,P310- IF INHALED: remove victim to fresh air and keep at rest position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.

Section 2. Hazards Identification

Response

P301,P310,P330,P331-IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. DO NOT induce vomiting.
P303,P361,P353,- IF ON SKIN (or hair) Take off immediately all contaminated clothing. Rinse skin with water or shower.
P302, P352, P363- IF ON SKIN: wash with plenty of soap and water. Wash contaminated clothing before reuse.
P333,P313- If skin irritation or rash occurs: Get medical attention.
P305,P351,P338,P310- IF IN EYES: rinse caustiously with water for 20 minutes. Remove contacts lenses if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

Storage

P405- Stored locked up

Disposal

P501- Dispose of contents and container in accordance with local, regional and international regulations.

Hazards not otherwise classified

None known

Section 3. Composition/Information on Ingredients

Substance/Mixture

Mixture

Other means of identification

Not available

Ingredient name	%	CAS #
1-(2-Aminoethyl)piperazine	15-35	140-31-8
1,3 Bis(aminomethyl) benzene	10-20	1477-55-0
Triethylenetetramine	5-10	122-24-3
o-cresyl glycidyl ether	10-20	2210-79-9
Pigment Blue 29	10-25	57455-37-5
Benzyl alcohol	1-2	100-51-6
4-Nonyl Phenol	5-10	84852-15-3
Pyrogenic silica	0.5-4	7631-86-9
Tris(dimethylaminomethyl) phenol	3-8	90-72-2
Bisphenol A	10-20	80-50-7

The exact percentage (concentration) in the composition has been withheld as a trade secret.
Occupational exposure limits, if available are listed in section 8.

Section 4. First Aid Measures

Description of necessary first aid measures.

Eye contact

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

Inhalation

Remove victim to fresh air and keep at rest position comfortable for breathing. If breathing is difficult, immediately get medical assistance.

Skin contact

Immediately remove contaminated clothing. Rinse skin with water or shower. Wash with plenty of soap and water. Wash clothing before reuse. If skin irritation or rash occurs: Get medical attention.

Ingestion

Immediately call a POISON CENTER or physician. Rinse mouth. DO NOT induce vomiting. Never give anything by mouth to an unconscious person.

Section 4. First Aid Measures

Most important symptoms/effects, acute and delayed

Eye contact	Irritation
Inhalation	High airborne concentrations of vapors resulting from heating, misting, and spraying may cause irritation of the respiratory tract and mucous membranes.
Skin contact	May cause allergic skin reaction. Causes skin irritation.
Ingestion	May cause irritation of the digestive tract.

Over-exposure signs/symptoms

Eye contact	Irritation.
Inhalation	May cause irritation
Skin contact	Prolonged and repeated contact may cause skin irritation and dermatitis.
Ingestion	No known significant effects or critical hazards

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

Notes to physician:	Treat symptomatically.
Specific treatments	No specific treatment
Protection of first aiders	No action shall be taken involving any personal risk or without suitable training.

Section 5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media	Use water spray, ABC type dry chemical extinguishers, foam or carbon dioxide. Water and foam may cause frothing.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Product will burn if ignited. Closed containers may rupture when exposed to extreme heat.
Hazardous thermal decomposition products	Decomposition products may include the following materials: Carbon Dioxide Carbon Monoxide Aldehydes Various hydrocarbons Phenols
Special protective equipment	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full-face piece operated in a positive pressure mode.
Special protective actions for fire fighters	Promptly isolate the scene by removing all persons from the vicinity of the incident is there is a fire. No action shall be taken involving any personal risks or without suitable training.

Section 6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures.

For non emergency personal	No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk thru spilled material. Shut off all ignition sources. No smoking, flares or flames in hazard area.Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in “For non-emergency personnel.”

Section 6. Accidental Release Measures

Enviromental precautions

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

Methods and materials for containment and cleaning up

Spills

Wear proper personal protective clothing and equipment. Approach release from upwind direction. If spilled in an enclosed area, ventilate and eliminate ignition sources. Contain spill by diking with sand, earth or other non-combustible material. Absorb spill with an inert material. Place into a labeled, closed container. Store in a safe location to await disposal.

Section 7. Handling and Storage

Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment (see Section 8). Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid inhalation of aerosol, mist, vapor, spray, fume or vapor. Avoid release to the environment. Do not cut, weld on or near the container. Use under well-ventilated conditions.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Wash contaminated clothing before reuse. Discard shoes contaminated with this product. See section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry cool and well-ventilated area away from incompatible materials (see section 10) and food and drink. Keep away from heat, sparks and open flames. Keep container tightly closed and sealed until ready to use. Do not store in unlabeled containers. Empty containers contain residual product which may exhibit hazards of the product. Do not reuse empty containers.

Section 8. Exposure Controls/Personal Protection

Occupational exposure limits

Ingredient name	Exposure limits
1,3-Bis(aminomethyl) benzene	**NIOSH REL (United States, 2016)** C: 0.01 mg/m^3 (skin)
Pyrogenic silica	**OSHA PEL (United States, 2016)** TWA: 80 mg/m^3 / % SiO_2 **NIOSH REL (United States, 2016)** TWA: 6 mg/m^3

Section 8. Exposure Controls/Personal Protection

Appropriate engineering controls	If user operations generates dust, fumes, gas, vapor or mist, use process enclosures, or local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory level.
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.
Hygiene measure	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking, and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	Safety eyewear complying with an approved standard should be used when risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases and dusts.
Skin Protection	
Hand protection	Chemical- resistant, imprevious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Body protection	Personal protective equipment for the body should be selected based on the task being preformed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection	Appropriate footwear and any additional skin protection measures should be selected based on the task being preformed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training , and other important aspects of use.

Section 9. Physical and Chemical Properties

Appearance	
Physical state	Viscous Liquid
Color	Dark Blue
Odor	Amine like
Odor threshold	Not available
pH	Not applicable
Melting point	Not applicable
Boiling point	Not applicable
Flash Point	Not determined
Evaporation rate	Not applicable
Flammability (solid, gas)	Not determined
Lower & upper explosive (flammable) limits	Not determined
Vapor density	Heavier than air
Vapor pressure	Not determined
Relative density	1.18
Solubility in water	Negligible
Partition coefficient: n- octanol/water	Not available
Auto- ignition temperature	Not determined
Decomposition temperature	Not determined
Viscosity	80,000 to 100,000 cps
VOC	0 g/l

Section 10. Stability and Reactivity

Reactivity Exothermic reactions including polymerization may occur in contact with amines, strong acids, strong bases, alcohols, strong oxidizing agents and excessive heat.

Chemical stability Exposure to excessive heat and ignition sources will cause product to auto-polymerize at very high temperatures.

Possibility of hazardous reactions Under normal conditions of storage and use, hazardous reaction will not occur.

Conditions to avoid: Excessive heat, sources of ignition.

Incompatible materials Reactive or incompatible with the following materials: Strong acids, bases, and oxidizing agents.

Hazardous decomposition products Thermal decomposition may produce smoke, carbon dioxide, carbon monoxide, aldehydes and other products of incomplete combustion.

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
1,3-Bis(aminomethyl) benzene	LD50 Oral	Rat	930 mg/kg	-
	LC50 Inhalation	Rat	700 ppm	1 hour
	LD50 Skin	Rabbit	2 gm/kg	-
Pyrogenic silica	LD50 Oral	Rat	3160 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
1,3-Bis(aminomethyl) benzene	Skin- Severe	Rabbit	-	24 hours 750 µg	-
	Eye-Severe	Rabbit	-	24 hours 50 µg	

Sensitization There is no data available

Mutagenicity There is no data available

Carcinogenicity

Classification

Product/ingredient name	OSHA	IARC	NTP
Pyrogenic silica		Group 3	

Reproductive toxicity There is no data available

Teratogenicity There is no data available

Specific target organ toxicity (single exposure) There is no data available

Specific target organ toxicity (repeated exposure) There is no data available

Aspiration hazard There is no data available

Information on the likely routes of exposure Routes of entry anticipated: dermal contact, inhalation.

Section 11. Toxicological Information

Potential acute health effects	
Eye contact	Eye irritation
Inhalation	May cause irritation of the respiratory tract and mucous membranes.
Skin contact	Skin irritation. May cause allergic skin reaction.
Ingestion	Cause irritation.
Symptoms related to the physical, chemical and toxicological characteristics	
Eye contact	No known significant effects or critical hazards
Inhalation	No known significant effects or critical hazards
Skin contact	No known significant effects or critical hazards
Ingestion	No known significant effects or critical hazards
Delayed and immediate effects and chronic effects from short- and long-term exposure	
Short term exposure	
Potential immediate effects	No known significant effects or critical hazards
Potential delayed effects	No known significant effects or critical hazards
Long term exposure	
Potential immediate effects	No known significant effects or critical hazards
Potential delayed effects	No known significant effects or critical hazards
Potential chronic health effects	
General	No known significant effects or critical hazards
Carcinogenicity	No known significant effects or critical hazards
Mutagenicity	No known significant effects or critical hazards
Teratogenicity	No known significant effects or critical hazards
Developmental effects	No known significant effects or critical hazards
Fertility effects	May cause damage to unborn child.

Numerical measures of toxicity	
Acute toxicity estimates	There is no data available

Section 12. Ecological Information

Toxicity	There is no data available
Persistence and degradability	Not readily biodegradable
Bioaccumulative potential	There is no data available
Mobility in soil	
Soil/water partition coefficient (K_{OC})	There is no data available.
Other adverse effects	No known significant effects or critical hazards

Section 13. Disposal Considerations

Disposal methods

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor.

Section 14. Transportation Information

AERG: 153
Regulatory Information:

	DOT	TDG	IMDG	IATA
UN Number	UN 2735	UN 2735	UN 2735	UN 2735
Proper Shipping name	Amines, liquid, corrosive, N.O.S (benzyldimethylamine, N-aminoethylpiperazine) Marine pollutant (4-Nonylphenol, branched, Bisphenol A)	Amines, liquid, corrosive, N.O.S (benzyldimethylamine, N-aminoethylpiperazine) Marine pollutant (4-Nonylphenol, branched, Bisphenol A)	Amines, liquid, corrosive, N.O.S (benzyldimethylamine, N-aminoethylpiperazine) Marine pollutant (4-Nonylphenol, branched, Bisphenol A)	Amines, liquid, corrosive, N.O.S (benzyldimethylamine, N-aminoethylpiperazine)
Transport hazard class(es)	Class 8	Class 8	Class 8	Class 8
Packing group	III	III	III	III
Environmental Hazards	Yes	Yes	Yes	Yes
Additional Information	Non-bulk packages of this product are not regulated as hazardous materials unless transported by inland waterway. The marine pollutant mark is not required when transported on inland waterways in sizes of ≤ 5 L or ≤ 5 kg		The marine pollutant mark is not required when transported on inland waterways in sizes of ≤ 5 L or ≤ 5 kg	

Section 15. Regulatory Information

U.S. Federal regulations: **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined
United States inventory (TSCA 8 b): all components are listed or exempted

Composition/information on ingredients

SARA 304 RQ Not applicable
SARA 311/312 Not applicable
SARA 313 Not applicable

State regulations

Pennsylvania The following chemical is listed: Aminoethylpiperazine
Massachusetts The following chemical is listed: Aminoethylpiperazine
New Jersey The following chemical is listed: Aminoethylpiperazine

California Prop.65

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

16. Other Information

Date of revision	**4-6-2020**
Date of previous issue	**11-2-2015**
Revisions	**Update to reflect formulation change**
Version	**3**
Prepared by	**C. Rogalski**

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