Safety Data Sheet

Issue Date 27-Mar-2018 **Revision Date** 27-Mar-2018 **Revision Number** 6

1. IDENTIFICATION

Product identifier

Product Code G435-5020A
Product Name PERMA-GLAZE GRAY

Other means of identification

Common Name SERIES G435, PART A
Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use industrial paint.
Uses advised against Consumer use, For professional use only. Not for residential use.

Details of the supplier of the safety data sheet

Manufacturer Address
Tnemec Company, Inc. 6800 Corporate Drive, Kansas City, MO 64120-1372 816-474-3400

Distributor
Tnemec Company, Inc. 86 Boul, des Entreprises, Ste. 203, Boisbriand, Quebec Canada J7G 2T3

Emergency telephone number

Company Phone Number Tnemec Regulatory Dept: 816-474-3400
24 Hour Emergency Phone Number 800-535-5053 (Infotrac)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1B
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 2

Label elements

EMERGENCY OVERVIEW

WARNING

Hazard statements
Causes skin irritation
Causes serious eye irritation
May cause an allergic skin reaction
Suspected of causing cancer
May cause damage to organs through prolonged or repeated exposure

Appearance opaque **Physical state** liquid **Odor** Slight

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves
Do not breathe dust/fume/gas/mist/vapors/spray

Response
IF exposed or concerned: Get medical advice/attention
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF ON SKIN: Wash with plenty of soap and water
Take off contaminated clothing and wash before reuse
If skin irritation or rash occurs: Get medical advice/attention

Storage
Store in a well-ventilated place. Keep container tightly closed
Keep away from children

Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Other information
Toxic to aquatic life with long lasting effects
SEE SAFETY DATA SHEET
Acute Toxicity 0.0001 % of the mixture consists of ingredient(s) of unknown toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%
EPOXY RESIN (LER)	25085-99-8	60 - 100%
FURFURYL ALCOHOL	98-00-0	1 - <10%
SYNTHETIC AMORPHUS PYROGENIC SILICA	112945-52-5	1 - <10%
CRYSTALLINE SILICA (QUARTZ)	14808-60-7	0.1 - <1%

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General advice If symptoms persist, call a physician.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Consult a physician.

Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion If swallowed, do not induce vomiting. Get medical attention immediately.

Self-protection of the first aider Use personal protective equipment. Avoid contact with eyes, skin and clothing.

Most important symptoms and effects, both acute and delayed

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Carbon dioxide. Foam. Dry chemical.

Unsuitable extinguishing media Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical
Thermal decomposition can lead to release of irritating gases and vapours In the event of fire and/or explosion do not breathe fumes

Hazardous combustion products Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds. Carbon oxides. Phenolics.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment. Avoid contact with eyes, skin and clothing. Ensure adequate ventilation. Remove all sources of ignition.

Environmental Precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.

Methods and material for containment and cleaning up

Methods for containment Remove all sources of ignition. Spills may be collected with inert, absorbent material for proper disposal. Use non-sparking tools, protective gloves, goggles and clothing, adequate ventilation, avoid the breathing of vapors and use respiratory protective devices. Transfer absorbent material to suitable containers for proper disposal.

Methods for cleaning up If spilled, contain spilled material and remove with inert absorbent. Dispose of contaminated absorbent, container and unused contents in accordance with local, state and federal regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Wear personal protective equipment. Avoid contact with eyes, skin and clothing. Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Keep away from open flames, hot surfaces and sources of ignition. Avoid breathing vapors or mists. Do not ingest. Do not eat, drink or smoke when using this product. Ensure adequate ventilation.

Conditions for safe storage, including any incompatibilities

Storage Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children.

Incompatible products Strong oxidizing agents. Strong acids. Bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure guidelines .

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
FURFURYL ALCOHOL 98-00-0	TWA: 0.2 ppm Skin	TWA: 10 ppm TWA: 40 mg/m³ STEL: 15 ppm STEL: 60 mg/m³ Skin TWA: 50 ppm TWA: 200 mg/m³	75 ppm
CRYSTALLINE SILICA (QUARTZ) 14808-60-7	TWA: 0.025 mg/m³	TWA: 0.1 mg/m³ TWA: 50 µg/m³	50 mg/m³

Appropriate engineering controls

Engineering measures Sufficient ventilation, in volume and pattern, should be provided through both local and general exhaust to keep the air contaminant concentration below current applicable OSHA Permissible Exposure Limits (PEL) and ACGIH"s Threshold Limit Values (TLV). Appropriate ventilation should be employed to remove hazardous decomposition products formed during welding or flame cutting operations of surfaces coated with this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Safety glasses with side-shields If splashes are likely to occur, wear Tightly fitting safety goggles

Skin and body protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection Use only with adequate ventilation. Do not breathe vapors, spray mist, or dust. Ensure fresh air entry during application and drying. If you experience eye watering, headache or dizziness or if air monitoring demonstrates vapor/mist or dust levels are above applicable limits, wear an appropriate, properly fitted respirator (NIOSH/MSHA approved) during and after application. Follow respirator manufacturer's directions for respirator use.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.
Avoid breathing dust created by cutting, sanding, or grinding.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	liquid		
Appearance	opaque	**Odor**	Slight
Color	No information available	**Odor threshold**	No information available

Property	Values	Remarks
pH		No data available

Melting point / freezing point	No data available	
Boiling point / boiling range	72 °C / 162 °F	
Flash point	No information available	
Evaporation rate		No data available
Flammability (solid, gas)	No data available	No information available
Flammability Limit in Air		No data available
Upper flammability limit	NA	
Lower flammability limit	NA	
Vapor pressure		No data available
Vapor density		No data available
Specific gravity	1.17674	g/cm3
Water solubility	Insoluble in cold water	
Solubility in other solvents		No data available
Partition coefficient: n-octanol/water		No data available
Autoignition temperature	No data available	No data available
Decomposition temperature		No data available
Kinematic viscosity		No data available
Dynamic viscosity	7000 centipoises	approx

Other Information

Density	9.81404 lbs/gal
Volatile organic compounds (VOC) content	0.56234 lbs/gal
Total volatiles weight percent	5.73 %
Total volatiles volume percent	5.98 %
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
None under normal processing.

Conditions to avoid
Heat, flames and sparks.

Incompatible materials
Strong oxidizing agents, Strong acids, Bases

Hazardous decomposition products
Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds. Phenolics. Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation	May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination.
Eye contact	Causes serious eye irritation.
Skin contact	Irritating to skin. May cause sensitization by skin contact.
Ingestion	May be harmful if swallowed.

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation
FURFURYL ALCOHOL 98-00-0	= 110 mg/kg (Rat) = 177 mg/kg (Rat)	= 3825 mg/kg (Rat) = 400 mg/kg (Rabbit) = 657 mg/kg (Rabbit)	= 233 ppm (Rat) 4 h
SYNTHETIC AMORPHUS PYROGENIC SILICA 112945-52-5	= 3160 mg/kg (Rat)	-	-

Information on toxicological effects

Symptoms Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Irritating to eyes and skin. Skin disorders.

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

Chronic Toxicity NOTICE: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Skin sensitizer. May cause cancer. Avoid repeated exposure.

Sensitization May cause sensitization of susceptible persons.

Mutagenicity No information available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
FURFURYL ALCOHOL 98-00-0	*	Group 2B	-	X
SYNTHETIC AMORPHUS PYROGENIC SILICA 112945-52-5		Group 3	-	
CRYSTALLINE SILICA (QUARTZ) 14808-60-7	A2	Group 1	Known	X

Reproductive effects No information available.

STOT - single exposure No information available

STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure

Target organ effects Central nervous system, Eyes, respiratory system, Skin.

Aspiration hazard No information available.

Acute Toxicity 0.0001 % of the mixture consists of ingredient(s) of unknown toxicity.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life with long lasting effects

4.5569 % of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia
EPOXY RESIN (LER) 25085-99-8	11 mg/L 72 hr	2 mg/L 96 hr Oncorhynchus mykiss	1.8 mg/L 48h
FURFURYL ALCOHOL 98-00-0		32: 96 h Pimephales promelas mg/L LC50 static	328: 24 h Daphnia magna mg/L EC50

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Mobility in Environmental Media

Chemical name	log Pow
EPOXY RESIN (LER) 25085-99-8	3

Other Adverse Effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal Methods It must undergo special treatment, e.g. at suitable disposal site, to comply with local regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

US EPA Waste Number

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
METHYL ALCOHOL		Included in waste stream: F039		U154

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name PAINT & RELATED MATERIAL Not regulated

Additional information Call TNEMEC Traffic Department - 816-474-3400 for additional information or other modes of Transportation.

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Does Not Comply
ENCS	Does Not Comply
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and and Title 40n of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

California Prop. 65

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

Chemical name	California Prop. 65
FURFURYL ALCOHOL - 98-00-0	*
CRYSTALLINE SILICA (QUARTZ) - 14808-60-7	Carcinogen
METHYL ALCOHOL -	Developmental

California SCAQMD Rule 443

Contains Photochemically Reactive Solvent

State Right-to-Know

Chemical name	New Jersey	Massachusetts	Pennsylvania
FURFURYL ALCOHOL 98-00-0	X	X	X
CRYSTALLINE SILICA (QUARTZ) 14808-60-7	X	X	X

16. OTHER INFORMATION

NFPA	**Health** 2	**Flammability** 0	**Instability** 0	**Physical hazard** *
HMIS (Hazardous Material Information System)	**Health** 2*	**Flammability** 0	**Reactivity** 0	

Prepared By Tnemec Regulatory Dept: 816-474-3400
Revision Date 27-Mar-2018
Revision Summary
1 9 4 5 6 7 10 8 11 14 15 13

Disclaimer

For specific information regarding occupational safety and health standards, please refer to the Code of Federal Regulations, Title 29, Part 1910.
To the best of our knowledge, the information contained herein is accurate. However, neither the Tnemec Company or any of its subsidiaries assume any liability whatsoever for the accuracy of 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 health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

End of SDS

Safety Data Sheet

Issue Date 27-Mar-2018 **Revision Date** 27-Mar-2018 **Revision Number** 8

1. IDENTIFICATION

Product identifier

Product Code G435-0370B
Product Name PERMA-GLAZE ACTIVATOR

Other means of identification

Common Name SERIES 370/G435, PART B
Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use industrial paint.
Uses advised against Consumer use, For professional use only. Not for residential use.

Details of the supplier of the safety data sheet

Manufacturer Address
Tnemec Company, Inc. 6800 Corporate Drive, Kansas City, MO 64120-1372 816-474-3400

Distributor
Tnemec Company, Inc. 86 Boul, des Entreprises, Ste. 203, Boisbriand, Quebec Canada J7G 2T3

Emergency telephone number

Company Phone Number Tnemec Regulatory Dept: 816-474-3400
24 Hour Emergency Phone Number 800-535-5053 (Infotrac)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1B
Reproductive Toxicity	Category 1B
Specific target organ toxicity (single exposure)	Category 1
Specific target organ toxicity (repeated exposure)	Category 1
Flammable Liquids	Category 4
Corrosive to Metals	Category 1

Label elements

EMERGENCY OVERVIEW

Danger

Hazard statements
Harmful if swallowed
Causes severe skin burns and eye damage
May cause an allergic skin reaction
May cause genetic defects
May cause cancer

May damage fertility or the unborn child
Causes damage to organs
Causes damage to organs through prolonged or repeated exposure
Combustible liquid
May be corrosive to metals

Appearance opaque **Physical state** liquid **Odor** Slight

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves
Keep only in original container

Response
Immediately call a POISON CENTER or doctor/physician
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
If skin irritation or rash occurs: Get medical advice/attention
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting
Absorb spillage to prevent material damage

Storage
Store locked up
Keep away from children
Store in corrosive resistant/metal/plastic container with a resistant inner liner

Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
If product is in liquid or paste form, physical or health hazards listed related to dust are not considered significant. However, product may contain substances that could be potential hazards if caused to become airborne due to grinding, sanding or other abrasive processes.

Other information
May be harmful in contact with skin
Toxic to aquatic life
SEE SAFETY DATA SHEET
Cancer hazard. Contains crystalline silica which can cause cancer. (Risk of cancer depends on duration and level of exposure).
Respirable crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs
Acute Toxicity 22.2542482 % of the mixture consists of ingredient(s) of unknown toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%
TITANIUM DIOXIDE (TOTAL DUST)	13463-67-7	10 - <30%
FURFURYL ALCOHOL	98-00-0	10 - <30%
MODIFIED POLYAMINE	-	10 - <30%
BENZYL ALCOHOL	100-51-6	10 - <30%
1,2-CYCLOHEXANEDIAMINE	694-83-7	1 - <10%
COAL FIRED FLY ASH BI-PRODUCT	68131-74-8	1 - <10%
M-XYLENEDIAMINE	1477-55-0	1 - <10%
CRYSTALLINE SILICA (QUARTZ)	14808-60-7	1 - <10%
PHENOL (SKIN)	108-95-2	1 - <10%
AMORPHOUS SILICA	7631-86-9	1 - <10%
SALICYLIC ACID	69-72-7	0.1 - <1%
P-P'-ISOPROPYLIDENEDIPHENOL	80-05-7	0.1 - <1%
ALUMINUM HYDROXIDE	21645-51-2	0.1 - <1%
ZIRCONIUM OXIDE	1314-23-4	0.1 - <1%

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General advice If symptoms persist, call a physician.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician immediately.

Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion If swallowed, do not induce vomiting. Get medical attention immediately. Never give anything by mouth to an unconscious person.

Self-protection of the first aider Use personal protective equipment. Avoid contact with eyes, skin and clothing.

Most important symptoms and effects, both acute and delayed

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Carbon dioxide. Foam. Dry chemical.

Unsuitable extinguishing media Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical
Thermal decomposition can lead to release of irritating gases and vapours In the event of fire and/or explosion do not breathe fumes

Hazardous combustion products Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds. Carbon oxides. Hydrocarbons. Ammonia.

Protective equipment and precautions for firefighters
Use water spray to cool unopened containers. In the event of fire, wear self-contained breathing apparatus. Keep away from heat/sparks/open flames/hot surfaces. MAY CAUSE HEAT AND PRESSURE BUILD-UP IN CLOSED CONTAINERS.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with eyes, skin and clothing. Use personal protective equipment. Remove all sources of ignition. Ensure adequate ventilation.

Environmental Precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.

Methods and material for containment and cleaning up

Methods for containment Remove all sources of ignition. Spills may be collected with inert, absorbent material for proper disposal. Use non-sparking tools, protective gloves, goggles and clothing, adequate ventilation, avoid the breathing of vapors and use respiratory protective devices. Transfer absorbent material to suitable containers for proper disposal.

Methods for cleaning up If spilled, contain spilled material and remove with inert absorbent. Dispose of contaminated absorbent, container and unused contents in accordance with local, state and federal regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with eyes, skin and clothing. Wear personal protective equipment. Remove and wash contaminated clothing before re-use. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Do not breathe vapours or spray mist. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Do not ingest. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children.

Incompatible products Strong oxidizing agents. Bases. Acids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure guidelines .

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
TITANIUM DIOXIDE (TOTAL DUST) 13463-67-7	TWA: 10 mg/m³	TWA: 10 mg/m³ TWA: 15 mg/m³	5000 mg/m³
FURFURYL ALCOHOL 98-00-0	TWA: 0.2 ppm Skin	TWA: 10 ppm TWA: 40 mg/m³ STEL: 15 ppm STEL: 60 mg/m³ Skin TWA: 50 ppm TWA: 200 mg/m³	75 ppm

COAL FIRED FLY ASH BI-PRODUCT 68131-74-8	TWA: 1 mg/m³	-	100 mg/m³ 10 mg/m³
M-XYLENEDIAMINE 1477-55-0	Skin Ceiling: 0.1 mg/m³	Skin Ceiling: 0.1 mg/m³	
CRYSTALLINE SILICA (QUARTZ) 14808-60-7	TWA: 0.025 mg/m³	TWA: 0.1 mg/m³ TWA: 50 µg/m³	50 mg/m³
PHENOL (SKIN) 108-95-2	TWA: 5 ppm Skin	TWA: 5 ppm TWA: 19 mg/m³ Skin	250 ppm
AMORPHOUS SILICA 7631-86-9	-	TWA: 6 mg/m³	3000 mg/m³
ALUMINUM HYDROXIDE 21645-51-2	TWA: 1 mg/m³	-	
ZIRCONIUM OXIDE 1314-23-4	TWA: 5 mg/m³	-	25 mg/m³

Appropriate engineering controls

Engineering measures Sufficient ventilation, in volume and pattern, should be provided through both local and general exhaust to keep the air contaminant concentration below current applicable OSHA Permissible Exposure Limits (PEL) and ACGIH"s Threshold Limit Values (TLV). Appropriate ventilation should be employed to remove hazardous decomposition products formed during welding or flame cutting operations of surfaces coated with this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Use chemical resistant splash type goggles. If splashes are likely to occur, wear face-shield.

Skin and body protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection Use only with adequate ventilation. Do not breathe vapors, spray mist, or dust. Ensure fresh air entry during application and drying. If you experience eye watering, headache or dizziness or if air monitoring demonstrates vapor/mist or dust levels are above applicable limits, wear an appropriate, properly fitted respirator (NIOSH/MSHA approved) during and after application. Follow respirator manufacturer's directions for respirator use. Respirable crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice. Avoid breathing dust created by cutting, sanding, or grinding.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	liquid		
Appearance	opaque	**Odor**	Slight
Color	No information available	**Odor threshold**	No information available

Property	**Values**	**Remarks**
pH		
Melting point / freezing point	No data available	
Boiling point / boiling range	72 °C / 162 °F	
Flash point	84 °C / 184.0 °F	Pensky Martens - Closed Cup
Evaporation rate		
Flammability (solid, gas)	No data available	
Flammability Limit in Air		
Upper flammability limit	NA	
Lower flammability limit	NA	
Vapor pressure		
Vapor density		

Specific gravity	1.39443	g/cm3
Water solubility	Insoluble in cold water	
Solubility in other solvents		
Partition coefficient: n-octanol/water		
Autoignition temperature	No data available	
Decomposition temperature		
Kinematic viscosity		
Dynamic viscosity	10000 centipoises	approx

Other Information

Density	11.62956 lbs/gal
Volatile organic compounds (VOC) content	2.10844 lbs/gal
Total volatiles weight percent	18.13 %
Total volatiles volume percent	22.69 %
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
None under normal processing.

Conditions to avoid
Heat, flames and sparks. Epoxy constituents.

Incompatible materials
Strong oxidizing agents, Bases, Acids

Hazardous decomposition products
Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds. Carbon oxides. Hydrocarbons. Ammonia.

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination. Respirable crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs.

Eye contact Causes serious eye damage.

Skin contact Causes severe skin burns. May cause sensitization by skin contact.

Ingestion Harmful if swallowed.

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation
TITANIUM DIOXIDE (TOTAL DUST) 13463-67-7	> 10000 mg/kg (Rat)	-	-
FURFURYL ALCOHOL 98-00-0	= 110 mg/kg (Rat) = 177 mg/kg (Rat)	= 3825 mg/kg (Rat) = 400 mg/kg (Rabbit) = 657 mg/kg (Rabbit)	= 233 ppm (Rat) 4 h
BENZYL ALCOHOL 100-51-6	= 1230 mg/kg (Rat)	= 2 g/kg (Rabbit)	= 8.8 mg/L (Rat) 4 h
1,2-CYCLOHEXANEDIAMINE	= 4556 mg/kg (Rat)	-	> 3.23 mg/L (Rat) 4 h

694-83-7			
COAL FIRED FLY ASH BI-PRODUCT 68131-74-8	> 2000 mg/kg (Rat)	-	-
M-XYLENEDIAMINE 1477-55-0	= 660 mg/kg (Rat)	= 2 g/kg (Rabbit)	= 700 ppm (Rat) 1 h
PHENOL (SKIN) 108-95-2	= 317 mg/kg (Rat) = 340 mg/kg (Rat)	= 630 mg/kg (Rabbit)	= 316 mg/m³ (Rat) 4 h
AMORPHOUS SILICA 7631-86-9	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 2.2 mg/L (Rat) 1 h
SALICYLIC ACID 69-72-7	= 891 mg/kg (Rat)	> 2 g/kg (Rat)	> 900 mg/m³ (Rat) 1 h
P-P'-ISOPROPYLIDENEDIPHENOL 80-05-7	= 3300 mg/kg (Rat)	= 3 mL/kg (Rabbit)	> 0.17 mg/L (Rat) 6 h
ALUMINUM HYDROXIDE 21645-51-2	> 5000 mg/kg (Rat)	-	-

Information on toxicological effects

Symptoms Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Skin disorders. Irritating to eyes and skin.

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

Corrosivity Causes severe damage to eyes and skin. May be corrosive to metals.

Chronic Toxicity Cancer hazard. Contains crystalline silica which can cause cancer. (Risk of cancer depends on duration and level of exposure). Skin sensitizer. Substances known to be mutagenic to man. Substances known to impair fertility.

Sensitization May cause sensitization of susceptible persons.

Mutagenicity May cause genetic defects.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
TITANIUM DIOXIDE (TOTAL DUST) 13463-67-7		Group 2B	-	X
FURFURYL ALCOHOL 98-00-0	*	Group 2B	-	X
COAL FIRED FLY ASH BI-PRODUCT 68131-74-8		Group 1	Known	
CRYSTALLINE SILICA (QUARTZ) 14808-60-7	A2	Group 1	Known	X
PHENOL (SKIN) 108-95-2		Group 3	-	
AMORPHOUS SILICA 7631-86-9		Group 3	-	

Reproductive effects Suspected of damaging fertility or the unborn child.

STOT - single exposure Skin, Eyes, Central Nervous System (CNS)

STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure

Target organ effects Eyes, Lungs, respiratory system, Skin, Central nervous system, kidney, liver, Nasal Cavities.

Aspiration hazard Based on product level data, this product does not meet the requirement to be classified as an aspiration hazard. However, this product contains an ingredient that may cause aspiration if swallowed.

Acute Toxicity 22.2542482 % of the mixture consists of ingredient(s) of unknown toxicity.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life

43.36731 % of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia
FURFURYL ALCOHOL 98-00-0		32: 96 h Pimephales promelas mg/L LC50 static	328: 24 h Daphnia magna mg/L EC50
BENZYL ALCOHOL 100-51-6	35: 3 h Anabaena variabilis mg/L EC50	10: 96 h Lepomis macrochirus mg/L LC50 static 460: 96 h Pimephales promelas mg/L LC50 static	23: 48 h water flea mg/L EC50
COAL FIRED FLY ASH BI-PRODUCT 68131-74-8			140 - 2000: 24 h Daphnia magna mg/L EC50
PHENOL (SKIN) 108-95-2	187 - 279: 72 h Desmodesmus subspicatus mg/L EC50 static 46.42: 96 h Pseudokirchneriella subcapitata mg/L EC50 0.0188 - 0.1044: 96 h Pseudokirchneriella subcapitata mg/L EC50 static	5.0 - 12.0: 96 h Oncorhynchus mykiss mg/L LC50 20.5 - 25.6: 96 h Pimephales promelas mg/L LC50 static 11.9 - 50.5: 96 h Pimephales promelas mg/L LC50 flow-through 13.5: 96 h Lepomis macrochirus mg/L LC50 static 32: 96 h Pimephales promelas mg/L LC50 7.5 - 14: 96 h Oncorhynchus mykiss mg/L LC50 static 11.5: 96 h Lepomis macrochirus mg/L LC50 semi-static 27.8: 96 h Brachydanio rerio mg/L LC50 23.4 - 36.6: 96 h Oryzias latipes mg/L LC50 static 31: 96 h Poecilia reticulata mg/L LC50 semi-static 4.23 - 7.49: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 0.00175: 96 h Cyprinus carpio mg/L LC50 semi-static 34.09 - 47.64: 96 h Poecilia reticulata mg/L LC50 static 33.9 - 43.3: 96 h Oryzias latipes mg/L LC50 flow-through 5.449 - 6.789: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 11.9 - 25.3: 96 h Lepomis macrochirus mg/L LC50 flow-through	10.2 - 15.5: 48 h Daphnia magna mg/L EC50 4.24 - 10.7: 48 h Daphnia magna mg/L EC50 Static
AMORPHOUS SILICA 7631-86-9	440: 72 h Pseudokirchneriella subcapitata mg/L EC50	5000: 96 h Brachydanio rerio mg/L LC50 static	7600: 48 h Ceriodaphnia dubia mg/L EC50
SALICYLIC ACID 69-72-7		90: 48 h Leuciscus idus mg/L LC50 static	105: 24 h Daphnia magna mg/L EC50 870: 48 h Daphnia magna mg/L EC50 Static
P-P'-ISOPROPYLIDENEDIPHENOL 80-05-7	2.5: 96 h Pseudokirchneriella subcapitata mg/L EC50	4.0 - 5.5: 96 h Pimephales promelas mg/L LC50 static 4: 96 h Oncorhynchus mykiss mg/L LC50 9.9: 96 h Brachydanio rerio mg/L LC50 static 3.6 - 5.4: 96 h Pimephales promelas mg/L LC50 flow-through	9.2 - 11.4: 48 h Daphnia magna mg/L EC50 Static 10.2: 48 h Daphnia magna mg/L EC50 3.9: 48 h Daphnia magna mg/L EC50

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Mobility in Environmental Media

Chemical name	log Pow
BENZYL ALCOHOL 100-51-6	1.1
1,2-CYCLOHEXANEDIAMINE 694-83-7	0.09
M-XYLENEDIAMINE 1477-55-0	0.18
PHENOL (SKIN) 108-95-2	1.47
SALICYLIC ACID	2.26

69-72-7	
P-P'-ISOPROPYLIDENEDIPHENOL 80-05-7	2.2

Other Adverse Effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal Methods Keep container tightly closed. If spilled, contain spilled material and remove with inert absorbent. Dispose of contaminated absorbent, container and unused contents in accordance with local, state and federal regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

US EPA Waste Number

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
PHENOL (SKIN) 108-95-2	U188	Included in waste streams: F039, K001, K022, K087 Included in waste stream: K060		U188
CUMENE (SKIN) 98-82-8				U055
BENZENE 71-43-2	U019	Included in waste streams: F005, F024, F025, F037, F038, F039, K085, K104, K105, K141, K142, K143, K144, K145, K147, K151, K159, K169, K171, K172	0.5 mg/L regulatory level	U019

California Hazardous Waste Status

Chemical name	CAWAST
COAL FIRED FLY ASH BI-PRODUCT 68131-74-8	Toxic Corrosive
PHENOL (SKIN) 108-95-2	Toxic Corrosive

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name PAINT & RELATED MATERIAL Not regulated

Additional information Call TNEMEC Traffic Department - 816-474-3400 for additional information or other modes of Transportation.

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Does Not Comply
EINECS/ELINCS	Does Not Comply
ENCS	Does Not Comply
IECSC	Complies
KECL	Does Not Comply
PICCS	Does Not Comply

AICS Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

Chemical name	**HAPS Data**
COAL FIRED FLY ASH BI-PRODUCT	
PHENOL (SKIN)	

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and and Title 40n of the Code of Federal Regulations, Part 372:

Chemical name	**SARA 313 - Threshold Values**
COAL FIRED FLY ASH BI-PRODUCT - 68131-74-8	0.1
PHENOL (SKIN) - 108-95-2	1.0
P-P'-ISOPROPYLIDENEDIPHENOL - 80-05-7	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Chemical name	**CWA - Reportable Quantities**	**CWA - Toxic Pollutants**	**CWA - Priority Pollutants**	**CWA - Hazardous Substances**
COAL FIRED FLY ASH BI-PRODUCT 68131-74-8		X		
PHENOL (SKIN) 108-95-2	1000 lb	X	X	X

Chemical name	**Hazardous Substances RQs**	**CERCLA EHS RQs**	**RQ**
PHENOL (SKIN) 108-95-2	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

California Prop. 65

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

Chemical name	**California Prop. 65**
TITANIUM DIOXIDE (TOTAL DUST) - 13463-67-7	Carcinogen
FURFURYL ALCOHOL - 98-00-0	*
COAL FIRED FLY ASH BI-PRODUCT - 68131-74-8	Carcinogen
CRYSTALLINE SILICA (QUARTZ) - 14808-60-7	Carcinogen
P-P'-ISOPROPYLIDENEDIPHENOL - 80-05-7	Female Reproductive
PETROLEUM SOLVENT (NAPTHA) - 64742-95-6	Developmental
CRYSTALLINE SILICA (QUARTZ) - 14808-60-7	Carcinogen
ETHANOL - 64-17-5	Carcinogen Developmental
CUMENE (SKIN) - 98-82-8	Carcinogen
BENZENE - 71-43-2	Carcinogen Developmental Male Reproductive

California SCAQMD Rule 443
Contains Photochemically Reactive Solvent

State Right-to-Know

Chemical name	New Jersey	Massachusetts	Pennsylvania
TITANIUM DIOXIDE (TOTAL DUST) 13463-67-7	X	X	X
FURFURYL ALCOHOL 98-00-0	X	X	X
BENZYL ALCOHOL 100-51-6		X	X
COAL FIRED FLY ASH BI-PRODUCT 68131-74-8	X		X
M-XYLENEDIAMINE 1477-55-0	X	X	X
CRYSTALLINE SILICA (QUARTZ) 14808-60-7	X	X	X
PHENOL (SKIN) 108-95-2	X	X	X
AMORPHOUS SILICA 7631-86-9		X	X
P-P'-ISOPROPYLIDENEDIPHENOL 80-05-7	X	X	X
ZIRCONIUM OXIDE 1314-23-4		X	

16. OTHER INFORMATION

NFPA	**Health** 3	**Flammability** 1	**Instability** 1	**Physical hazard** *
HMIS (Hazardous Material Information System)	**Health** 3*	**Flammability** 1	**Reactivity** 1	

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End of SDS