Safety Data Sheet

Issue Date 06-Feb-2024 **Revision Date** 06-Feb-2024 **Revision Number** 3

1. IDENTIFICATION

Product identifier

Product Code G436-5020A
Product Name PERMA-SHIELD FR GRAY

Other means of identification

Common Name SERIES G436, 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. 123 W. 23rd Avenue, North Kansas City, MO 64116-3094 (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 1
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1B
Specific target organ toxicity (repeated exposure)	Category 2
Flammable Liquids	Category 4

Label elements

EMERGENCY OVERVIEW

Danger

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

Combustible liquid

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 locked up
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 4.55784 % 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%
FIBROUS GLASS	65997-17-3	1 - <10%
PETROLEUM SOLVENT (NAPTHA)	64742-95-6	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. 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.

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. 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

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 Pick up and transfer to properly labelled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Wear personal protective equipment. Remove and wash contaminated clothing before re-use. Avoid contact with eyes, skin and clothing. Keep away from open flames, hot surfaces and sources of ignition. 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 tightly closed in a dry and cool place. Keep out of the reach of children.

Incompatible products Strong oxidizing agents. Acids. Bases. Amines.

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: 50 ppm TWA: 200 mg/m³	75 ppm
FIBROUS GLASS 65997-17-3	TWA: 1 fiber/cm3 respirable fibers: length >5 µm, aspect ratio >=3:1, as determined by the membrane filter method at 400-450X magnification [4-mm objective], using phase-contrast illumination TWA: 5 mg/m³ inhalable particulate matter	-	

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.

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	84.44 °C / 184.00 °F	Pensky Martens - Closed Cup
Evaporation rate		No data available
Flammability (solid, gas)	No data 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	1.19324	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 information available	No data available
Kinematic viscosity	No information available	No data available
Dynamic viscosity	23300 centipoises	approx

Other Information

Molecular weight	No information available
Density	9.95166 lbs/gal
Volatile organic compounds (VOC) content	0.42096 lbs/gal
Total volatiles weight percent	4.23 %
Total volatiles volume percent	4.59 %
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, Acids, Bases, Amines

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.

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 Harmful if swallowed.

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. Substances known to be carcinogenic to man. Substances known to be mutagenic to man.

Sensitization May cause sensitization of susceptible persons.

Mutagenicity Substances which should be regarded as being mutagenic to man.

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	A3	Group 2B	-	X
FIBROUS GLASS 65997-17-3		Group 3	-	

Reproductive effects No information available.

STOT - single exposure No information available

STOT - repeated exposure No information available

Aspiration hazard No information available.

Acute Toxicity 4.55784 % of the mixture consists of ingredient(s) of unknown toxicity.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life with long lasting effects

6.28225 % 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	-	LC50: 32 mg/L Pimephales promelas 96 h static	-
PETROLEUM SOLVENT (NAPTHA) 64742-95-6	-	LC50: 9.22 mg/L Oncorhynchus mykiss 96 h	EC50: 6.14 mg/L Daphnia magna 48 h

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Mobility in Environmental Media

Chemical name	log Pow
EPOXY RESIN (LER)	3

25085-99-8	
FURFURYL ALCOHOL 98-00-0	0.8

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
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
CUMENE (SKIN) 98-82-8				U055

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name PAINT & RELATED MATERIAL NOT REGULATED
Additional Information The above transport information is for non-bulk packaging only (≤ 119 gallons). For additional information, contact Tnemec Traffic Department at 816-474-3400 or traffic@tnemec.com.

IATA

UN/ID no. UN3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s, (Epoxy Resin)
Hazard Class 9
Packing Group III
ERG Code 171

IMDG/IMO

UN/ID no. UN3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s, (Epoxy Resin)
Hazard Class 9
Packing Group III
EmS No. F-A,S-F
Marine Pollutant Yes

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	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

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
The following chemical(s) are listed as HAP under 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	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

California Prop. 65

WARNING: 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	Carcinogen
METHYL ALCOHOL -	Developmental
BENZENE - 71-43-2	Carcinogen Developmental Male Reproductive
CUMENE (SKIN) - 98-82-8	Carcinogen

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

16. OTHER INFORMATION

NFPA	**Health**	2	**Flammability**	1	**Instability**	1	**Physical hazard** *
HMIS (Hazardous Material Information System)	**Health**	2*	**Flammability**	1	**Reactivity**	1	

Prepared By Tnemec Regulatory Dept: 816-474-3400
Revision Date 06-Feb-2024
Revision Summary
1 9 4 5 6 7 10 8 11 13 14 15
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 05-Feb-2024 **Revision Date** 05-Feb-2024 **Revision Number** 10

1. IDENTIFICATION

Product identifier

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

Other means of identification

Common Name SERIES 370/G435/G436, 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. 123 W. 23rd Avenue, North Kansas City, MO 64116-3094 (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%
P-P'-ISOPROPYLIDENEDIPHENOL	80-05-7	0.1 - <1%
PETROLEUM SOLVENT (NAPTHA)	64742-95-6	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: 0.2 mg/m³ nanoscale respirable particulate matter TWA: 2.5 mg/m³ finescale respirable particulate matter	TWA: 15 mg/m³ total dust	5000 mg/m³
FURFURYL ALCOHOL 98-00-0	TWA: 0.2 ppm Skin	TWA: 50 ppm TWA: 200 mg/m³	75 ppm
COAL FIRED FLY ASH BI-PRODUCT 68131-74-8	TWA: 1 mg/m³ dust and mist	-	100 mg/m³ dust and mist 10 mg/m³
M-XYLENEDIAMINE 1477-55-0	Skin Ceiling: 0.018 ppm	-	
CRYSTALLINE SILICA (QUARTZ) 14808-60-7	TWA: 0.025 mg/m³ respirable particulate matter	TWA: 50 µg/m³	50 mg/m³ respirable dust
PHENOL (SKIN) 108-95-2	TWA: 5 ppm Skin	TWA: 5 ppm TWA: 19 mg/m³ Skin	250 ppm
AMORPHOUS SILICA 7631-86-9	-	-	3000 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	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	10000 centipoises	approx

Other Information

Molecular weight	No information available
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.

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. Causes damage to organs through prolonged or repeated exposure.
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	A3	Group 2B	-	X
FURFURYL ALCOHOL 98-00-0	A3	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	Known	

Reproductive effects Suspected of damaging fertility or the unborn child.
STOT - single exposure Causes damage to organs
STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure
Aspiration hazard No information available.

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	-	LC50: 32 mg/L Pimephales promelas 96 h static	-
BENZYL ALCOHOL 100-51-6	-	LC50: 460 mg/L Pimephales promelas 96 h static LC50: 10 mg/L Lepomis macrochirus 96 h static	EC50: 23 mg/L water flea 48 h
M-XYLENEDIAMINE 1477-55-0	-	LC50: 87.6 mg/L Oryzias latipes 96 h semi-static	-
PHENOL (SKIN) 108-95-2	EC50: 46.42 mg/L Pseudokirchneriella subcapitata 96 h EC50: 0.0188 - 0.1044 mg/L Pseudokirchneriella subcapitata 96 h static EC50: 187 - 279 mg/L Desmodesmus subspicatus 72 h static	LC50: 11.9 - 50.5 mg/L Pimephales promelas 96 h flow-through LC50: 20.5 - 25.6 mg/L Pimephales promelas 96 h static LC50: 32 mg/L Pimephales promelas 96 h LC50: 5.449 - 6.789 mg/L Oncorhynchus mykiss 96 h flow-through LC50: 7.5 - 14 mg/L Oncorhynchus	EC50: 4.24 - 10.7 mg/L Daphnia magna 48 h Static EC50: 10.2 - 15.5 mg/L Daphnia magna 48 h

		mykiss 96 h static LC50: 4.23 - 7.49 mg/L Oncorhynchus mykiss 96 h semi-static LC50: 5.0 - 12.0 mg/L Oncorhynchus mykiss 96 h LC50: 13.5 mg/L Lepomis macrochirus 96 h static LC50: 11.9 - 25.3 mg/L Lepomis macrochirus 96 h flow-through LC50: 11.5 mg/L Lepomis macrochirus 96 h semi-static LC50: 34.09 - 47.64 mg/L Poecilia reticulata 96 h static LC50: 31 mg/L Poecilia reticulata 96 h semi-static LC50: 27.8 mg/L Brachydanio rerio 96 h LC50: 0.00175 mg/L Cyprinus carpio 96 h semi-static LC50: 33.9 - 43.3 mg/L Oryzias latipes 96 h flow-through LC50: 23.4 - 36.6 mg/L Oryzias latipes 96 h static	
AMORPHOUS SILICA 7631-86-9	EC50: 440 mg/L Pseudokirchneriella subcapitata 72 h	LC50: 5000 mg/L Brachydanio rerio 96 h static	EC50: 7600 mg/L Ceriodaphnia dubia 48 h
P-P'-ISOPROPYLIDENEDIPHENOL 80-05-7	EC50: 2.5 mg/L Pseudokirchneriella subcapitata 96 h	LC50: 3.6 - 5.4 mg/L Pimephales promelas 96 h flow-through LC50: 4.0 - 5.5 mg/L Pimephales promelas 96 h static LC50: 4 mg/L Oncorhynchus mykiss 96 h LC50: 9.9 mg/L Brachydanio rerio 96 h static	EC50: 10.2 mg/L Daphnia magna 48 h EC50: 3.9 mg/L Daphnia magna 48 h EC50: 9.2 - 11.4 mg/L Daphnia magna 48 h Static
PETROLEUM SOLVENT (NAPTHA) 64742-95-6	-	LC50: 9.22 mg/L Oncorhynchus mykiss 96 h	EC50: 6.14 mg/L Daphnia magna 48 h

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Mobility in Environmental Media

Chemical name	log Pow
FURFURYL ALCOHOL 98-00-0	0.8
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
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 The above transport information is for non-bulk packaging only (≤ 119 gallons). For additional information, contact Tnemec Traffic Department at 816-474-3400 or traffic@tnemec.com.

IATA

UN/ID no. UN3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s, (Benzyl Alcohol)
Hazard Class 9
Packing Group III
ERG Code 171

IMDG/IMO

UN/ID no. UN3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s, (Benzyl Alcohol)
Hazard Class 9
Packing Group III
EmS No. F-A,S-F
Marine Pollutant Yes

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	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

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

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	1.0 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

CERCLA

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

WARNING: 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	Carcinogen
COAL FIRED FLY ASH BI-PRODUCT - 68131-74-8	Carcinogen
CRYSTALLINE SILICA (QUARTZ) - 14808-60-7	Carcinogen
AMORPHOUS SILICA - 7631-86-9	Carcinogen
P-P'-ISOPROPYLIDENEDIPHENOL - 80-05-7	Developmental Female Reproductive
CRYSTALLINE SILICA (QUARTZ) - 14808-60-7	Carcinogen
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

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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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