



# Safety Data Sheet

Issue Date 03-Aug-2016

Revision Date 03-Aug-2016

Revision Number 9

## 1. IDENTIFICATION

**Product identifier**

**Product Code** F431-5024A  
**Product Name** PERMA-SHIELD PL SEWER PIPE GRN

**Other means of identification**

**Common Name** SERIES 431 PART A  
**UN/ID no.** 3066

**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 A
Serious eye damage/eye irritation	Category 1
Respiratory sensitization	Category 1
Skin sensitization	Category 1A
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1A
Reproductive Toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 1
Specific target organ toxicity (repeated exposure)	Category 1
Flammable Liquids	Category 4

**Label elements**

### EMERGENCY OVERVIEW

Danger

**Hazard statements**

Harmful if swallowed  
Causes severe skin burns and eye damage  
May cause allergy or asthma symptoms or breathing difficulties if inhaled  
May cause an allergic skin reaction  
May cause genetic defects  
May cause cancer  
Suspected of damaging 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  
In case of inadequate ventilation wear respiratory protection  
Contaminated work clothing should not be allowed out of the workplace  
Wear protective gloves  
Keep away from heat/sparks/open flames/hot surfaces. — No smoking

**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  
In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

**Storage**

Store locked up  
Store in a well-ventilated place. Keep cool  
Keep away from children

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)****Other information**

## 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 50.1619786 % of the mixture consists of ingredient(s) of unknown toxicity.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No	Weight-%
POLYAMINE ADDUCT	-	10 - 30%
COAL FIRED FLY ASH BI-PRODUCT	68131-74-8	10 - 30%
FURFURYL ALCOHOL	98-00-0	10 - 30%
BENZYL ALCOHOL	100-51-6	10 - 30%
TITANIUM DIOXIDE (TOTAL DUST)	13463-67-7	1 - 10%
1,2-CYCLOHEXANEDIAMINE	694-83-7	1 - 10%
CRYSTALLINE SILICA (QUARTZ)	14808-60-7	1 - 10%
SYNTHETIC VITREOUS (SILICATE) FIBRES	65997-17-3	1 - 10%
HEXAMETHYLENEDIAMINE	124-09-4	1 - 10%
SYNTHETIC AMORPHOUS PYROGENIC SILICA	112945-52-5	1 - 10%
STODDARD SOLVENT (MINERAL SPIRITS)	8052-41-3	0.1 - 1%
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

<b>General advice</b>	If symptoms persist, call a physician.
<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician immediately.
<b>Inhalation</b>	Remove to fresh air. Oxygen or artificial respiration if needed.
<b>Ingestion</b>	If swallowed, do not induce vomiting. Get medical attention immediately.
<b>Self-protection of the first aider</b>	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. Solvent vapors are heavier than air and may spread along floors. Flash back possible over considerable distance.

**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.

**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** Close container after each use. Avoid contact with eyes, skin and clothing. Do not eat, drink or smoke when using this product. If splashes are likely to occur, wear goggles. Wear protective gloves/clothing. Do not burn, or use a cutting torch on, the empty drum. When used in a mixture, read the labels and safety data sheets of all components. 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. Acids. Bases.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

**Exposure guidelines**

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
COAL FIRED FLY ASH BI-PRODUCT 68131-74-8	TWA: 1 mg/m <sup>3</sup>	-	100 mg/m <sup>3</sup> 10 mg/m <sup>3</sup>

FURFURYL ALCOHOL 98-00-0	TWA: 10 ppm Skin STEL: 15 ppm	TWA: 10 ppm TWA: 40 mg/m <sup>3</sup> STEL: 15 ppm STEL: 60 mg/m <sup>3</sup> Skin TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>	75 ppm
TITANIUM DIOXIDE (TOTAL DUST) 13463-67-7	TWA: 10 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup> TWA: 15 mg/m <sup>3</sup>	5000 mg/m <sup>3</sup>
CRYSTALLINE SILICA (QUARTZ) 14808-60-7	TWA: 0.025 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	50 mg/m <sup>3</sup>
SYNTHETIC VITREOUS (SILICATE) FIBRES 65997-17-3	TWA: 1 fiber/cm <sup>3</sup> TWA: 5 mg/m <sup>3</sup>	-	
HEXAMETHYLENEDIAMINE 124-09-4	TWA: 0.5 ppm	-	
STODDARD SOLVENT (MINERAL SPIRITS) 8052-41-3	TWA: 100 ppm	TWA: 100 ppm TWA: 525 mg/m <sup>3</sup> TWA: 500 ppm TWA: 2900 mg/m <sup>3</sup>	20000 mg/m <sup>3</sup>
CRYSTALLINE SILICA (QUARTZ) 14808-60-7	TWA: 0.025 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	50 mg/m <sup>3</sup>

**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**

<b>Physical state</b>	liquid	<b>Odor</b>	Slight
<b>Appearance</b>	opaque	<b>Odor threshold</b>	No information available
<b>Color</b>	No information available		
<b>Property</b>	<b>Values</b>	<b>Remarks</b>	
<b>pH</b>		No data available	
<b>Melting point / freezing point</b>		No data available	
<b>Boiling point / boiling range</b>	72 °C / 162 °F		
<b>Flash point</b>	77 °C / 170.0 °F		
<b>Evaporation rate</b>		Pensky Martens - Closed Cup	
<b>Flammability (solid, gas)</b>		No data available	
		No information available	

<b>Flammability Limit in Air</b>		No data available
Upper flammability limit	N/A	
Lower flammability limit	N/A	
<b>Vapor pressure</b>		No data available
<b>Vapor density</b>		No data available
<b>Specific gravity</b>	1.15706	g/cm3
<b>Water solubility</b>	Insoluble in cold water	
<b>Solubility in other solvents</b>		No data available
<b>Partition coefficient: n-octanol/water</b>		No data available
<b>Autoignition temperature</b>		No data available
<b>Decomposition temperature</b>		No data available
<b>Kinematic viscosity</b>		No data available
<b>Dynamic viscosity</b>	5000 centipoises	approx

**Other Information**

<b>Density</b>	9.64991 lbs/gal
<b>Volatile organic compounds (VOC) content</b>	1.53048 lbs/gal
<b>Total volatiles weight percent</b>	15.86 %
<b>Total volatiles volume percent</b>	16.29 %

**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, 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. Ammonia. Carbon oxides. Hydrocarbons.

**11. TOXICOLOGICAL INFORMATION**

**Information on Likely Routes of Exposure**

<b>Inhalation</b>	May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination. May cause sensitization by inhalation. Respirable crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs.
<b>Eye contact</b>	Causes serious eye damage.
<b>Skin contact</b>	Causes severe skin burns. May cause sensitization by skin contact.
<b>Ingestion</b>	Harmful if swallowed.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
COAL FIRED FLY ASH BI-PRODUCT 68131-74-8	> 2000 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
TITANIUM DIOXIDE (TOTAL DUST) 13463-67-7	> 10000 mg/kg ( Rat )		
1,2-CYCLOHEXANEDIAMINE 694-83-7	= 4556 mg/kg ( Rat )		
CRYSTALLINE SILICA (QUARTZ) 14808-60-7	= 500 mg/kg ( Rat )		
HEXAMETHYLENEDIAMINE 124-09-4	= 750 mg/kg ( Rat )	= 1110 mg/kg ( Rabbit )	
SYNTHETIC AMORPHUS PYROGENIC SILICA 112945-52-5	= 3160 mg/kg ( Rat )		
CRYSTALLINE SILICA (QUARTZ) 14808-60-7	= 500 mg/kg ( Rat )		

**Information on toxicological effects**

**Symptoms** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Skin disorders. Respiratory 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** 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. Cancer hazard. Contains crystalline silica which can cause cancer. (Risk of cancer depends on duration and level of exposure). May cause sensitization by inhalation and skin contact. Substances known to impair fertility. Substances known to be mutagenic to man.  
**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.

Component	ACGIH	IARC	NTP	OSHA
COAL FIRED FLY ASH BI-PRODUCT 68131-74-8		Group 1	Known	
FURFURYL ALCOHOL 98-00-0	*			
TITANIUM DIOXIDE (TOTAL DUST) 13463-67-7		Group 2B		X
1,2-CYCLOHEXANEDIAMINE 694-83-7	*			
CRYSTALLINE SILICA (QUARTZ) 14808-60-7	A2	Group 1	Known	X
SYNTHETIC VITREOUS (SILICATE) FIBRES 65997-17-3		Group 3		
SYNTHETIC AMORPHUS PYROGENIC SILICA 112945-52-5		Group 3		
CRYSTALLINE SILICA (QUARTZ) 14808-60-7	A2	Group 1	Known	X

**Reproductive effects** Suspected of damaging fertility or the unborn child.  
**STOT - single exposure** Eyes, Skin, Respiratory system  
**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** No information available.

**Acute Toxicity** 50.1619786 % of the mixture consists of ingredient(s) of unknown toxicity.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Harmful to aquatic life

52.1338 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Component	Toxicity to algae	Toxicity to fish	Toxicity to daphnia
COAL FIRED FLY ASH BI-PRODUCT 68131-74-8			140 - 2000: 24 h Daphnia magna mg/L EC50
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
HEXAMETHYLENEDIAMINE 124-09-4	14.8: 96 h Pseudokirchneriella subcapitata mg/L EC50 15: 72 h Pseudokirchneriella subcapitata mg/L EC50	1825: 96 h Pimephales promelas mg/L LC50 static 62: 96 h Leuciscus idus mg/L LC50 static 56: 96 h Lepomis macrochirus mg/L LC50 static	23.4: 48 h Daphnia magna mg/L EC50

### Persistence and degradability

No information available.

### Bioaccumulation

No information available.

### Mobility in Environmental Media

Component	log Pow
BENZYL ALCOHOL 100-51-6	1.1
HEXAMETHYLENEDIAMINE 124-09-4	0.02

### 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.

Component	CAWAST
COAL FIRED FLY ASH BI-PRODUCT 68131-74-8	Toxic Corrosive
HEXAMETHYLENEDIAMINE 124-09-4	Toxic

## 14. TRANSPORT INFORMATION

### DOT

UN/ID no. 3066  
Proper Shipping Name paint



**Hazard Class** 8  
**Packing Group** III  
**Emergency Response Guide Number** 153

**IATA**

**UN/ID no.** 3066  
**Proper Shipping Name** paint  
**Hazard Class** 8  
**Packing Group** III  
**ERG Code** 856

**Additional information**

Call TNE MEC 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** Does not comply

**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):

**Component** HAPS Data  
 COAL FIRED FLY ASH BI-PRODUCT

**United States of America**

**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 Title 40n of the Code of Federal Regulations, Part 372:

Component	SARA 313 - Threshold Values
COAL FIRED FLY ASH BI-PRODUCT - 68131-74-8	0.1

**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

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
COAL FIRED FLY ASH BI-PRODUCT 68131-74-8		X		

**CERCLA**

**United States of America**

**California Prop. 65**

WARNING! This product contains a chemical known in the State of California to cause cancer

Component	California Prop. 65
COAL FIRED FLY ASH BI-PRODUCT - 68131-74-8	Carcinogen
FURFURYL ALCOHOL - 98-00-0	*
TITANIUM DIOXIDE (TOTAL DUST) - 13463-67-7	Carcinogen
1,2-CYCLOHEXANEDIAMINE - 694-83-7	*
CRYSTALLINE SILICA (QUARTZ) - 14808-60-7	Carcinogen
CRYSTALLINE SILICA (QUARTZ) - 14808-60-7	Carcinogen

**California SCAQMD Rule 443**

Contains Photochemically Reactive Solvent

**State Right-to-Know**

Component	New Jersey	Massachusetts	Pennsylvania
COAL FIRED FLY ASH BI-PRODUCT 68131-74-8	X		X
FURFURYL ALCOHOL 98-00-0	X	X	X
BENZYL ALCOHOL 100-51-6		X	X
TITANIUM DIOXIDE (TOTAL DUST) 13463-67-7	X	X	X
CRYSTALLINE SILICA (QUARTZ) 14808-60-7	X	X	X
HEXAMETHYLENEDIAMINE 124-09-4	X	X	
STODDARD SOLVENT (MINERAL SPIRITS) 8052-41-3	X	X	X
CRYSTALLINE SILICA (QUARTZ) 14808-60-7	X	X	X

**16. OTHER INFORMATION**

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

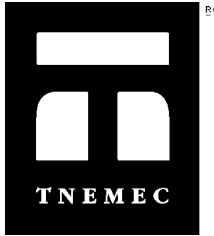
**Prepared By** Tnemec Regulatory Dept: 816-474-3400  
**Revision Date** 03-Aug-2016  
**Revision Summary**  
 9 4 5 7 10 8 11 14

**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 11-Jul-2016

Revision Date 11-Jul-2016

Revision Number 9

## 1. IDENTIFICATION

### Product identifier

**Product Code** F431-0431B  
**Product Name** PERMA-SHIELD PL EPOXY

### Other means of identification

**Common Name** SERIES 431, PART B

### 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
Acute toxicity - Dermal	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 2


### Label elements

#### **EMERGENCY OVERVIEW**

#### **WARNING**

##### **Hazard statements**

Harmful if swallowed  
Harmful in contact with skin  
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
- Do not eat, drink or smoke when using this product
- 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
- Call a POISON CENTER or doctor/physician if you feel unwell
- Take off contaminated clothing and wash before reuse
- IF skin irritation or rash occurs: Get medical advice/attention
- IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
- Rinse mouth

**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 91.6287 % of the mixture consists of ingredient(s) of unknown toxicity.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS-No	Weight-%
EPOXY RESIN (LER)	25085-99-8	60 - 100%
FURFURYL ALCOHOL	98-00-0	1 - 10%
SYNTHETIC AMORPHOUS PYROGENIC SILICA	112945-52-5	1 - 10%

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

**4. FIRST AID MEASURES**

**Description of first aid measures**

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<b>General advice</b>	If symptoms persist, call a physician.
<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes. If eye irritation persists, consult a specialist.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician.
<b>Inhalation</b>	Remove to fresh air. Oxygen or artificial respiration if needed.
<b>Ingestion</b>	If swallowed, do not induce vomiting. Get medical attention immediately.
<b>Self-protection of the first aider</b>	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. Aldehydes. Carbon oxides. Hydrocarbons.

**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. Solvent vapors are heavier than air and may spread along floors. Flash back possible over considerable distance.

## 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.

**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** Close container after each use. Avoid contact with eyes, skin and clothing. Do not eat, drink or smoke when using this product. If splashes are likely to occur, wear goggles. Wear protective gloves/clothing. Do not burn, or use a cutting torch on, the empty drum. When used in a mixture, read the labels and safety data sheets of all components. 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. Acids. Bases. Amines.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### Exposure guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
FURFURYL ALCOHOL 98-00-0	TWA: 10 ppm Skin STEL: 15 ppm	TWA: 10 ppm TWA: 40 mg/m <sup>3</sup> STEL: 15 ppm STEL: 60 mg/m <sup>3</sup> Skin TWA: 50 ppm TWA: 200 mg/m <sup>3</sup>	75 ppm

### 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.

**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

<b>Physical state</b>	liquid	<b>Odor</b>	Slight
<b>Appearance</b>	opaque	<b>Odor threshold</b>	No information available
<b>Color</b>	No information available		

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
pH		No data available
Melting point / freezing point		No data available
Boiling point / boiling range	72 °C / 162 °F	
Flash point	93 °C / 200.0 °F	Pensky Martens - Closed Cup
Evaporation rate		No data available
Flammability (solid, gas)		Not applicable
Flammability Limit in Air		No data available
Upper flammability limit	N/A	
Lower flammability limit	N/A	
Vapor pressure		No data available
Vapor density		No data available
Specific gravity	1.1687	g/cm <sup>3</sup>
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
Decomposition temperature		No data available
Kinematic viscosity		No data available
Dynamic viscosity	1100 centipoises	approx

**Other Information**

Density	9.74694 lbs/gal
Volatile organic compounds (VOC) content	0.58092 lbs/gal
Total volatiles weight percent	5.96 %
Total volatiles volume percent	6.17 %

**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. Amines.

**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. Aldehydes. Carbon oxides. Hydrocarbons.

**11. TOXICOLOGICAL INFORMATION****Information on Likely Routes of Exposure**

<b>Inhalation</b>	May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination.
<b>Eye contact</b>	Causes serious eye irritation.
<b>Skin contact</b>	Irritating to skin. May cause sensitization by skin contact.

**Ingestion** Harmful if swallowed.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
FURFURYL ALCOHOL 98-00-0	= 110 mg/kg ( Rat ) = 177 mg/kg ( Rat )	= 400 mg/kg ( Rabbit ) = 3825 mg/kg ( Rat ) = 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. Skin disorders. Irritating to eyes and skin.

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

**Chronic Toxicity** Substances known to be carcinogenic to man. Skin sensitizer.  
**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.

Component	ACGIH	IARC	NTP	OSHA
FURFURYL ALCOHOL 98-00-0	*			
SYNTHETIC AMORPHUS PYROGENIC SILICA 112945-52-5		Group 3		

**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** 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** 91.6287 % of the mixture consists of ingredient(s) of unknown toxicity.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Toxic to aquatic life with long lasting effects

2.4112 % of the mixture consists of components(s) of unknown hazards to the aquatic environment

Component	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**

**Other Adverse Effects** No information available

**13. DISPOSAL CONSIDERATIONS**



**Waste treatment methods**

<b>Disposal Methods</b>	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.
<b>Contaminated packaging</b>	Empty containers should be taken to an approved waste handling site for recycling or disposal.

<b>14. TRANSPORT INFORMATION</b>
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**DOT**

<b>Proper Shipping Name</b>	PAINT & RELATED MATERIAL
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**IATA****Additional information**

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

<b>15. REGULATORY INFORMATION</b>
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**International Inventories**

<b>TSCA</b>	Complies
<b>DSL/NDSL</b>	Complies
<b>EINECS/ELINCS</b>	Does not comply
<b>ENCS</b>	Complies
<b>IECSC</b>	Complies
<b>KECL</b>	Complies
<b>PICCS</b>	Complies
<b>AICS</b>	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

**United States of America****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 Title 40n of the Code of Federal Regulations, Part 372:

**SARA 311/312 Hazardous****Categorization**

<b>Acute Health Hazard</b>	Yes
<b>Chronic Health Hazard</b>	Yes
<b>Fire Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	No

**CERCLA**

**United States of America**

**California Prop. 65**

WARNING! This product contains a chemical known in the State of California to cause cancer

Component	California Prop. 65
FURFURYL ALCOHOL - 98-00-0	*

**California SCAQMD Rule 443**

Contains Photochemically Reactive Solvent

**State Right-to-Know**

Component	New Jersey	Massachusetts	Pennsylvania
FURFURYL ALCOHOL 98-00-0	X	X	X

**16. OTHER INFORMATION**

<b><u>NFPA</u></b>	Health 2	Flammability 1	Instability 1	Physical hazard *
<b><u>HMIS (Hazardous Material Information System)</u></b>	Health 2*	Flammability 1	Reactivity 1	

**Prepared By** Tnemec Regulatory Dept: 816-474-3400  
**Revision Date** 11-Jul-2016

**Revision Summary**  
 9 1 4 5 7 10 8 11 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**