



# AFCOOL Z (AFCO 9004)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision Date: 09/05/2024

Version: 1.2

## SECTION 1: IDENTIFICATION

### Product Identifier

**Product Form:** Mixture

**Product Name:** AFCOOL Z

**Product Code:** AFCO 9004

### Intended Use of the Product

**Use of the Substance/Mixture:** Scale and corrosion inhibitor for use in open recirculating cooling water. For professional use only.

### Name, Address, and Telephone of the Responsible Party

#### Company

AFCO

550 Development Avenue

Chambersburg, PA 17201

T: 800-345-1329

[www.afcocare.com](http://www.afcocare.com)

### Emergency Telephone Number

**Emergency Number** : 1-800-424-9300 (CHEMTREC)

## SECTION 2: HAZARDS IDENTIFICATION

### Classification of the Substance or Mixture

#### Classification (GHS-US)

Met. Corr. 1 H290

Skin Corr. 1C H314

Eye Dam. 1 H318

Aquatic Acute 3 H402

Aquatic Chronic 3 H412

### Label Elements

#### GHS-US Labeling

##### Hazard Pictograms (GHS-US)

:



GHS05

##### Signal Word (GHS-US)

: Danger

##### Hazard Statements (GHS-US)

: H290 - May be corrosive to metals  
H314 - Causes severe skin burns and eye damage  
H318 - Causes serious eye damage  
H402 - Harmful to aquatic life.  
H412 - Harmful to aquatic life with long lasting effects

##### Precautionary Statements (GHS-US)

: P234 - Keep only in original container.  
P260 - Do not breathe vapors, mist, spray.  
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.  
P273 - Avoid release to the environment.  
P280 - Wear protective gloves, protective clothing, eye protection, face protection.  
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304+P340 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 - Immediately call a POISON CENTER or doctor/physician.  
P321 - Specific treatment (see section 4).

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P363 - Wash contaminated clothing before reuse.  
P390 - Absorb spillage to prevent material damage.  
P405 - Store locked up.  
P406 - Store in corrosive resistant container with a resistant inner liner.  
P501 - Dispose of contents/container according to local, regional, national, territorial, provincial, and international regulations.

### Other Hazards

**Other Hazards Not Contributing to the Classification:** N/A.

**Other Hazards:** Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions. When heated to decomposition, emits toxic fumes. Contact with metals may evolve flammable hydrogen gas.

**Unknown Acute Toxicity (GHS-US)** Not available.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### Substances

| Name   | Product identifier  | % (w/w) | Classification (GHS-US)  |
|--|---------------------|---------|--|
| Water  | (CAS No) 7732-18-5  | 70-80   | Not classified   |
| Sodium hydroxide                             | (CAS No) 1310-73-2  | 5-10    | Met. Corr. 1, H290<br>Skin Corr. 1A, H314<br>Eye Dam. 1, H318<br>Aquatic Acute 3, H402                                   |
| 1,2,4-Butanetricarboxylic acid, 2-phosphono- | (CAS No) 37971-36-1 | 5-10    | Met. Corr. 1, H290<br>Skin Corr. 1A, H314<br>Eye Dam. 1, H318  |
| Polycarboxylate, sodium salt                 | (CAS No) 9063-87-0  | 1-5     | Not classified   |
| Zinc chloride                                | (CAS No) 7646-85-7  | 1-5     | Acute Tox. 4 (Oral), H302<br>Skin Corr. 1B, H314<br>Eye Dam. 1, H318<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410 |
| Tolyl triazole                               | (CAS No) 29385-43-1 | 1-5     | Acute Tox. 4 (Oral), H302<br>Aquatic Chronic 2, H411   |

Full text of H-phrases: see section 16.

## SECTION 4: FIRST AID MEASURES

### Description of First Aid Measures

**General:** Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

**Inhalation:** When symptoms occur: go into open air and ventilate suspected area. Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention.

**Skin Contact:** Immediately flush skin with plenty of water for several minutes. Get immediate medical advice/attention. Wash contaminated clothing before reuse.

**Eye Contact:** Seek medical attention immediately. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

**Ingestion:** Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

### Most Important Symptoms and Effects Both Acute and Delayed

**General:** Causes serious eye damage. Corrosive to eyes, respiratory system and skin.

**Inhalation:** None under normal and intended conditions of product use.

**Skin Contact:** Causes severe skin burns and eye damage.

**Eye Contact:** Causes serious eye damage.

**Ingestion:** Ingestion is likely to be harmful or have adverse effects. Contact may cause immediate severe irritation progressing quickly to chemical burns.

**Chronic Symptoms:** No additional information available.

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### **Indication of Any Immediate Medical Attention and Special Treatment Needed**

If exposed or concerned, get medical advice and attention.

## **SECTION 5: FIRE-FIGHTING MEASURES**

### **Extinguishing Media**

**Suitable Extinguishing Media:** Water spray, fog, carbon dioxide, foam, dry chemical.

**Unsuitable Extinguishing Media:** Do not use a heavy water stream. Use of heavy stream of water may spread fire.

### **Special Hazards Arising From the Substance or Mixture**

**Fire Hazard:** Not flammable.

**Explosion Hazard:** Product is not explosive. Contact with soft metals may release flammable hydrogen gas.

**Reactivity:** Thermal decomposition generates: Corrosive vapors. When heated to decomposition, emits toxic fumes.

### **Advice for Firefighters**

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.

**Firefighting Instructions:** Use water spray or fog for cooling exposed containers.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

**Hazardous Combustion Products:** Carbon oxides (CO, CO<sub>2</sub>). Toxic fumes are released. Nitrogen oxides. Corrosive vapors. Sodium oxides. Phosphorus oxides. Zinc oxides.

**Other information:** Do not allow run-off from fire fighting to enter drains or water courses.

### **Reference to Other Sections**

Refer to section 9 for flammability properties.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

### **Personal Precautions, Protective Equipment and Emergency Procedures**

**General Measures:** Do not allow product to spread into the environment. Do NOT breathe (vapors, mist, spray). Do not get in eyes, on skin, or on clothing.

#### **For Non-Emergency Personnel**

**Protective Equipment:** Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

#### **For Emergency Personnel**

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** None.

### **Environmental Precautions**

Prevent entry to sewers and public waters. Avoid release to the environment.

### **Methods and Material for Containment and Cleaning Up**

**For Containment:** Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Cautiously neutralize spilled liquid.

**Methods for Cleaning Up:** Clear up spills immediately and dispose of waste safely. Cautiously neutralize spilled liquid. Contact competent authorities after a spill.

### **Reference to Other Sections**

See heading 8, Exposure Controls and Personal Protection.

## **SECTION 7: HANDLING AND STORAGE**

### **Precautions for Safe Handling**

**Additional Hazards When Processed:** When heated to decomposition, emits toxic fumes. Corrosive vapors are released. Contact with soft metals may evolve flammable hydrogen gas.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Do not eat, drink or smoke when using this product. Wash hands and forearms thoroughly after handling.

### **Conditions for Safe Storage, Including Any Incompatibilities**

**Technical Measures:** Comply with applicable regulations. May be corrosive to metals.

**Storage Conditions:** Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep/Store away from extremely low temperatures, incompatible materials.

**Incompatible Materials:** Strong acids. Strong oxidizers.

**Special Rules on Packaging:** Keep only in original container.

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**Specific End Use(s):** Scale and corrosion inhibitor for use in open recirculating cooling water. For professional use only.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

| Sodium hydroxide (1310-73-2) |  |                      |
|------------------------------|--|----------------------|
| Mexico                       | OEL Ceiling (mg/m <sup>3</sup> )         | 2 mg/m <sup>3</sup>  |
| USA ACGIH                    | ACGIH Ceiling (mg/m <sup>3</sup> )       | 2 mg/m <sup>3</sup>  |
| USA OSHA                     | OSHA PEL (TWA) (mg/m <sup>3</sup> )      | 2 mg/m <sup>3</sup>  |
| USA NIOSH                    | NIOSH REL (ceiling) (mg/m <sup>3</sup> ) | 2 mg/m <sup>3</sup>  |
| USA IDLH                     | US IDLH (mg/m <sup>3</sup> )             | 10 mg/m <sup>3</sup> |
| Ontario                      | OEL Ceiling (mg/m <sup>3</sup> )         | 2 mg/m <sup>3</sup>  |
| Québec                       | PLAFOND (mg/m <sup>3</sup> )             | 2 mg/m <sup>3</sup>  |

| Zinc chloride (7646-85-7) |  |                     |
|---------------------------|--|---------------------|
| USA ACGIH                 | ACGIH TWA (mg/m <sup>3</sup> )           | 1 mg/m <sup>3</sup> |
| USA OSHA                  | OSHA STEL (mg/m <sup>3</sup> )           | 2 mg/m <sup>3</sup> |
| USA NIOSH                 | NIOSH TWA (ceiling) (mg/m <sup>3</sup> ) | 1 mg/m <sup>3</sup> |

### Exposure Controls

**Appropriate Engineering Controls:** Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed. If user operations generate fumes, vapor, spray, or mist use process enclosures, local exhaust ventilation, or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**Personal Protective Equipment:** Protective goggles. Protective clothing. Gloves. Face shield.



**Materials for Protective Clothing:** Chemically resistant materials and fabrics. Corrosionproof clothing.

**Hand Protection:** Wear chemically resistant protective gloves.

**Eye Protection:** Chemical goggles or face shield.

**Skin and Body Protection:** Wear suitable protective clothing.

**Respiratory Protection:** None needed under normal and intended conditions of product use.

**Other Information:** When using, do not eat, drink or smoke.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on Basic Physical and Chemical Properties

|  |                      |
|--|----------------------|
| Physical State                             | : Liquid             |
| Appearance                                 | : Clear, pale yellow |
| Odor                                       | : Characteristic     |
| Odor Threshold                             | : Not available      |
| pH   | : >13                |
| Relative Evaporation Rate (butylacetate=1) | : Not available      |
| Melting Point                              | : Not available      |
| Freezing Point                             | : Not available      |
| Boiling Point                              | : 105°C (221°F)      |
| Flash Point                                | : Not flammable      |
| Auto-ignition Temperature                  | : Not available      |
| Decomposition Temperature                  | : Not available      |
| Flammability (solid, gas)                  | : Not flammable      |
| Lower Flammable Limit                      | : Not available      |
| Upper Flammable Limit                      | : Not available      |
| Vapor Pressure                             | : Not available      |
| Relative Vapor Density at 20°C             | : Not available      |

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|  |   |
|--|---|
| <b>Specific Gravity</b>                                  | : 1.21  |
| <b>Solubility</b>  | : Complete.   |
| <b>Partition coefficient: n-octanol/water</b>            | : Not available   |
| <b>Viscosity</b>   | : Not available   |
| <b>Explosion Data – Sensitivity to Mechanical Impact</b> | : Not expected to present an explosion hazard due to mechanical impact. |
| <b>Explosion Data – Sensitivity to Static Discharge</b>  | : Not expected to present an explosion hazard due to static discharge.  |

## SECTION 10: STABILITY AND REACTIVITY

**Reactivity:** Thermal decomposition generates: Corrosive vapors. When heated to decomposition, emits toxic fumes.

**Chemical Stability:** Stable under normal conditions.

**Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.

**Conditions to Avoid:** Extremely low temperatures. Incompatible materials.

**Incompatible Materials:** Strong acids. Strong oxidizers.

**Hazardous Decomposition Products:** Carbon oxides (CO, CO<sub>2</sub>). Thermal decomposition generates: Nitrogen oxides. Sodium oxides. Sulfur oxides. Phosphorus oxides. Zinc oxides.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Information on Toxicological Effects - Product

**Acute Toxicity:** Not classified.

**LD50 and LC50 Data:** Not available.

**Skin Corrosion/Irritation:** Causes severe skin burns and eye damage. (pH: >13)

**Serious Eye Damage/Irritation:** Causes serious eye damage. (pH: >13)

**Respiratory or Skin Sensitization:** Not classified.

**Germ Cell Mutagenicity:** Not classified.

**Teratogenicity:** Not available.

**Carcinogenicity:** Not classified.

**Specific Target Organ Toxicity (Repeated Exposure):** Not classified.

**Reproductive Toxicity:** Not classified.

**Specific Target Organ Toxicity (Single Exposure):** Not classified.

**Aspiration Hazard:** Not classified.

**Symptoms/Injuries After Inhalation:** None under normal and intended conditions of product use.

**Symptoms/Injuries After Skin Contact:** Causes severe skin burns and eye damage.

**Symptoms/Injuries After Eye Contact:** Causes serious eye damage.

**Symptoms/Injuries After Ingestion:** Ingestion is likely to be harmful or have adverse effects. Contact may cause immediate severe irritation progressing quickly to chemical burns.

**Chronic Symptoms:** No additional information available.

### Information on Toxicological Effects - Ingredient(s)

**LD50 and LC50 Data:**

|  |  |
|--|--|
| <b>Water (7732-18-5)</b>   |  |
| LD50 Oral Rat  | >90000 mg/kg                                 |
| <b>1,2,4-Butanetricarboxylic acid, 2-phosphono- (37971-36-1)</b> |  |
| LD50 Oral Rat  | >4000 mg/kg                                  |
| LD50 Dermal Rat  | >4000 mg/kg                                  |
| LC50 Inhalation Rat  | >1979 mg/m <sup>3</sup> (Exposure time: 4 h) |
| <b>Tolyl triazole (29385-43-1)</b>                               |  |
| LD50 Oral Rat  | 675 mg/kg                                    |
| ATE US (oral)  | 500.00 mg/kg body weight                     |
| <b>Zinc chloride (7646-85-7)</b>                                 |  |
| LD50 Oral Rat  | 350 mg/kg                                    |

## SECTION 12: ECOLOGICAL INFORMATION

### Toxicity

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**Ecology - General:** Harmful to aquatic life with long lasting effects.

| Sodium hydroxide (1310-73-2) |   |
|------------------------------|---|
| LC50 Fish 1                  | 40 mg/l   |
| Zinc chloride (7646-85-7)    |   |
| LC50 Fish 1                  | 0.4 - 2.2 mg/l (Exposure time: 96 h - Species: Cyprinus carpio) |
| EC50 Daphnia 1               | 0.2 mg/l (Exposure time: 48 h - Species: Daphnia magna)         |

### Persistence and Degradability

| AFCOOL Z (AFCO 9004)          |   |
|-------------------------------|---|
| Persistence and Degradability | May cause long-term adverse effects in the environment. |

### Bioaccumulative Potential

| AFCOOL Z (AFCO 9004)                                      |                               |
|---|-------------------------------|
| Bioaccumulative Potential                                 | Not established.              |
| 1,2,4-Butanetricarboxylic acid, 2-phosphono- (37971-36-1) |                               |
| BCF fish 1  | (no bioaccumulation expected) |
| Zinc chloride (7646-85-7)                                 |                               |
| BCF fish 1  | 63 d (Pimephales promelas)    |

**Mobility in Soil** Not available.

### Other Adverse Effects

**Other Information:** Avoid release to the environment.

## SECTION 13: DISPOSAL CONSIDERATIONS

**Waste Disposal Recommendations:** Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

## SECTION 14: TRANSPORT INFORMATION

### 14.1 In Accordance with DOT

**Proper Shipping Name** : CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (Sodium hydroxide)  
**Hazard Class** : 8  
**Identification Number** : UN3266  
**Label Codes** : 8  
**Packing Group** : III  
**ERG Number** : 154



### 14.2 In Accordance with IMDG

**Proper Shipping Name** : CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (Sodium hydroxide)  
**Hazard Class** : 8  
**Identification Number** : UN3266  
**Packing Group** : III  
**Label Codes** : 8  
**EmS-No. (Fire)** : F-A  
**EmS-No. (Spillage)** : S-B



### 14.3 In Accordance with IATA

**Proper Shipping Name** : CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (Sodium hydroxide)  
**Packing Group** : III  
**Identification Number** : UN3266  
**Hazard Class** : 8  
**Label Codes** : 8  
**ERG Code (IATA)** : 8L



### 14.4 In Accordance with TDG

**Proper Shipping Name** : CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (Sodium hydroxide)  
**Packing Group** : III  
**Hazard Class** : 8



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**Identification Number** : UN3266

**Label Codes** : 8

### SECTION 15: REGULATORY INFORMATION

#### US Federal Regulations

##### **Water (7732-18-5)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory.

##### **Sodium hydroxide (1310-73-2)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory.

##### **Tolyl triazole (29385-43-1)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory.

##### **1,2,4-Butanetricarboxylic acid, 2-phosphono- (37971-36-1)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory.

##### **Zinc chloride (7646-85-7)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory.

#### US State Regulations

##### **Sodium hydroxide (1310-73-2)**

U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Acute  
U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728)  
U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - New Jersey - Special Health Hazards Substances List  
U.S. - New York - Occupational Exposure Limits - TWAs  
U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances  
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List  
U.S. - Pennsylvania - RTK (Right to Know) List  
U.S. - Texas - Effects Screening Levels - Long Term  
U.S. - Texas - Effects Screening Levels - Short Term

##### **1,2,4-Butanetricarboxylic acid, 2-phosphono- (37971-36-1)**

U.S. - Texas - Effects Screening Levels - Long Term  
U.S. - Texas - Effects Screening Levels - Short Term

##### **Tolyl triazole (29385-43-1)**

U.S. - Texas - Effects Screening Levels - Long Term  
U.S. - Texas - Effects Screening Levels - Short Term

##### **Zinc chloride (7646-85-7)**

U.S. - Massachusetts - RTK (Right to Know) List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) List

#### Canadian Regulations

##### **Water (7732-18-5)**

Listed on the Canadian DSL (Domestic Substances List) inventory.

##### **Sodium hydroxide (1310-73-2)**

Listed on the Canadian DSL (Domestic Substances List) inventory.

##### **1,2,4-Butanetricarboxylic acid, 2-phosphono- (37971-36-1)**

Listed on the Canadian DSL (Domestic Substances List) inventory.

##### **Tolyl triazole (29385-43-1)**

Listed on the Canadian DSL (Domestic Substances List) inventory.

##### **Zinc chloride (7646-85-7)**

Listed on the Canadian DSL (Domestic Substances List) inventory.

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This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR

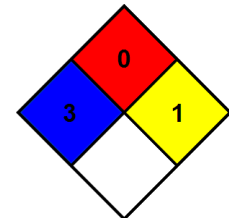
### SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

**Revision date** : 09/05/2024  
**Other Information** : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

#### GHS Full Text Phrases:

|                     |  |
|---------------------|--|
| Acute Tox. 4 (Oral) | Acute toxicity (oral) Category 4                                 |
| Aquatic Acute 1     | Hazardous to the aquatic environment - Acute Hazard Category 1   |
| Aquatic Acute 3     | Hazardous to the aquatic environment - Acute Hazard Category 3   |
| Aquatic Chronic 1   | Hazardous to the aquatic environment - Chronic Hazard Category 1 |
| Aquatic Chronic 2   | Hazardous to the aquatic environment - Chronic Hazard Category 2 |
| Aquatic Chronic 3   | Hazardous to the aquatic environment - Chronic Hazard Category 3 |
| Eye Dam. 1          | Serious eye damage/eye irritation Category 1                     |
| Met. Corr. 1        | Corrosive to metals Category 1                                   |
| Skin Corr. 1A       | Skin corrosion/irritation Category 1A                            |
| Skin Corr. 1B       | Skin corrosion/irritation Category 1B                            |
| H290                | May be corrosive to metals                                       |
| H302                | Harmful if swallowed   |
| H314                | Causes severe skin burns and eye damage                          |
| H318                | Causes serious eye damage  |
| H400                | Very toxic to aquatic life                                       |
| H402                | Harmful to aquatic life  |
| H410                | Very toxic to aquatic life with long lasting effects.            |
| H411                | Toxic to aquatic life with long lasting effects                  |
| H412                | Harmful to aquatic life with long lasting effects                |

**NFPA Health Hazard** : 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.  
**NFPA Fire Hazard** : 0 - Materials that will not burn.  
**NFPA Reactivity** : 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.



#### HMIS III Rating

**Health** : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given.  
**Flammability** : 0 - Minimal Hazard.  
**Physical** : 1 - Slight Hazard.

#### Party Responsible for the Preparation of This Document

AFCO  
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Chambersburg, PA 17201  
T: 800-345-1329

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*