

Performance Chemical Co.

Product: Pro-Flow-588

Current Issue Date: June-1-2016

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Pro-Flow 588

GHS

Safety Data Sheet

From: Performance Chemical Company

9105 W Interstate 20
Midland, TX 79706

Phone: (432) 332-3059
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All non-emergency questions should be directed to (432) 332-3059 for assistance.

24 Hour Emergency Telephone
CHEM-TEL, INC. 1-800-255-3924

NOTE: CHEM-TEL emergency number to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals.

1. Product Identification

Trade Name: Pro-Flow 588 Surfactant
CAS Number: Mixture – See Section 2
Product Family: Complex Mixture. Contains Methanol, Phosphoric Acid
Synonyms: N/AP

2. Hazards Identification

GHD Classifications: Corrosive Liquid
Flammable Liquid-Category 3
Acute Toxicity-Category 3
Aspiration Hazard-Category 2
Skin Corrosion-1C
Serious Eye Damage-Category 1
Target Organ Systematic Toxicity-(Single) Category 2
(Repeated) Category 1
Reproductive Toxicity-Category 1B
Chronic Aquatic Toxicity-Category IV



DANGER

Hazard Statements:

CORROSIVE LIQUID, COMBUSTIBLE – IRRITANT – ABSORBED THROUGH THE SKIN - CENTRAL NERVOUS SYSTEM - HARMFUL OR FATAL IF SWALLOWED - ASPIRATION HAZARD

Precautionary Statements:

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Moderate fire hazard. Keep away from heat, sparks, open flame, and other ignition sources.

This product contains Methanol, which is toxic by inhalation, ingestion, and absorption. Product cannot be made nontoxic. Can cause blindness if swallowed. Avoid contact.

This product contains Phosphoric Acid which may cause severe eye and skin burns.

If swallowed, and patient is fully conscious and alert, give 2 to 4 glasses of water or milk, DO NOT INDUCE VOMITING. Get medical attention immediately.

Contact with this product may cause severe eye, skin, and mucous membrane irritation, with possible destruction of tissues. Harmful if absorbed through the skin. Avoid prolonged breathing of vapors or mists. Inhalation may cause severe irritation, anesthetic effects (dizziness, nausea, headache, intoxication) and respiratory system effects. Excessive exposure may affect the liver, kidneys, and heart.

3. Composition/Information on Ingredients

Component Name	CAS Registry No.	Concentration % (Wt.)
Phosphoric Acid	7664-38-2	< 15%
Methanol	67-56-1	< 15%

4. First Aid Measures:

Take proper precautions to ensure your own health and safety before attempting rescue or providing first aid. For more specific information, refer to **Exposure Controls and Personal Protection in Section 8 of this MSDS.**

Inhalation	Immediately move individual to fresh air. If individual is not breathing, immediately begin artificial respiration. If heart has stopped, immediately begin CardioPulmonary Resuscitation (CPR). If breathing is difficult, 100 percent humidified oxygen should be administered by a qualified individual. Seek medical attention immediately.
Eye Contact	Check for and remove contact lenses. Immediately flush eyes with cool, clean low-pressure water for at least 15 minutes. Hold eyelids apart to ensure complete irrigation of the eye and eyelid tissue. Do not use eye ointment. Seek medical attention immediately. Possible destruction of eye tissues if not irrigated immediately.
Skin Contact	Remove contaminated shoes and clothing. Flush affected area with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. Do not use ointments. If skin surface is not damaged, clean affected area thoroughly with mild soap and water. Seek medical attention if tissue appears damaged or if pain or irritation persists.
Ingestion	If patient is fully conscious and alert, give 2 to 4 cups of water or milk, DO NOT INDUCE VOMITING. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. If spontaneous vomiting is about to occur, place individual's head below his knees. If individual is drowsy or unconscious, place on his left side with head down. Do not leave individual unattended. Seek medical attention immediately.
Notes to Physician	This product contains Phosphoric Acid , which can cause severe burns. If severe inhalation exposure is suspected, observe for 48 to 72 hours for delayed pulmonary edema. Inhalation overexposure can produce toxic effects. Monitor for respiratory distress. If cough or difficulty breathing develops, evaluate for upper respiratory tract inflammation, bronchitis, and pneumonitis. Vigorous anti-inflammatory / steroid treatment may be required at first evidence of upper airway or pulmonary edema. Administer 100 percent humidified supplemental oxygen with assisted ventilation as required. This product contains Methanol , which can cause intoxication and central nervous system

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depression. Methanol is metabolized to formic acid and formaldehyde. These metabolites can cause metabolic acidosis, visual disturbances and blindness. Since metabolism is required for these toxic symptoms. Their onset may be delayed from 6 to 30 hours following ingestion. Ethanol competes for the same metabolic pathway and has been used to prevent methanol metabolism. Ethanol administration is indicated in symptomatic patients or at blood methanol concentrations above 20 ug/dl. Methanol is effectively removed by hemodialysis. If ingested, administer an aqueous slurry of activated charcoal followed by a cathartic such as magnesium citrate or sorbitol. Also, treatment may involve careful gastric lavage if performed soon after ingestion or in patients who are comatose or at risk of convulsing. Protect the airway by cuffed endotracheal intubation or by placement of the body in a Trendelenburg and left lateral decubitus position. Obtain chest X-ray and liver function tests. Monitor for cardiac function, respiratory distress and arterial blood gases in severe exposure cases.

5. Fire Fighting Measures

NFPA Flammability Classification	OSHA / NFPA Class II Combustible Liquid.
Flash Point Method	CLOSED CUP: > 100 ° F. (37.7 ° C.). (Tagliabue [ASTM D-56])
Flammable Limits	Lower: App. 1.0% Upper: App. 10.0%
Autoignition Temperature	No Data
Hazardous Combustion Products	Burning or excessive heating may produce smoke, carbon monoxide, carbon dioxide, oxides of phosphorous, and possibly other harmful gasses and/or vapors.
Fire and Explosion Hazards	Corrosive Liquid. Low pH material causes formation of flammable and explosive hydrogen gas on contact with most metals. Combustible Liquid! This material releases vapors at or below ambient temperatures. When mixed with air in certain proportions and exposed to an ignition source, its vapor can cause a flash fire. Use only with adequate ventilation. Vapors are heavier than air and may travel long distances along the ground to an ignition source and flash back. May create vapor/air explosion hazard in confined spaces such as sewers. If container is not properly cooled, it can rupture in the heat of a fire. Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.
Extinguishing Media	Use dry chemicals, carbon dioxide (CO ₂), foam, water fog, or inert gas (nitrogen).
Fire Fighting Instructions	NEVER use a water jet directly on the fire because it may spread the fire to a larger area. Wear a self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode with appropriate turn-out gear and chemical resistant personal protective equipment. Refer to the personal protective equipment section of this MSDS. Notify appropriate authorities if liquid(s) enter sewers / waterways.

6. Accidental Release Measures

Take proper precautions to ensure your own health and safety before attempting spill control or clean-up. For more specific information, refer to the Emergency Overview on Page 1, Exposure Controls and Personal Protection in Section 8 and Disposal Considerations in Section 13 of this MSDS.

General	CORROSIVE LIQUID. Low pH material may cause severe tissue burns on contact. Neutralize with alkaline material (soda ash, lime). Liquid may react (self-neutralize) on contact with concrete or caliche. COMBUSTIBLE LIQUID. Release causes an immediate fire or explosion hazard. Stop the leak if it can be done without risk. Do not touch or walk through spilled material. CAUTION: SLIPPERY. Released material may be slippery on smooth, hard surfaces, especially when wet. All equipment used when handling this material should be grounded. Absorb or cover with dry earth, sand, or other non-combustible material, and transfer to appropriate waste containers. Use clean, non-sparking tools to collect absorbed material.
Small Spills	Neutralize with alkaline material (soda ash, lime), then absorb liquid on vermiculite, floor absorbent, or other absorbent material and transfer to container for disposal.
Large Spills	Secure area and control access. Dike far ahead of a liquid spill to ensure complete collection. Water mist or spray may be used to reduce or disperse vapors; but, it may not prevent ignition in closed spaces. This material's run-off may create an explosion or fire hazard. Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks). Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source, prevent from entering drains, sewers, streams or other bodies of water. Prevent from

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spreading. If run-off occurs, notify proper authorities that a spill has occurred. Pump or vacuum transfer spilled product to clean containers for recovery. Neutralize with alkaline material (soda ash, lime). Absorb unrecoverable product. Transfer contaminated absorbent, soil and other materials to containers for disposal.

7. Handling and Storage

Handling

A spill or leak can cause an immediate fire / explosion hazard. Keep containers closed and do not handle or store near heat, sparks, or any other potential ignition sources. Bond and ground all equipment before transferring this material from one container to another. Do not contact with oxidizable materials. Do not breathe vapor. Use only with adequate ventilation / personal protection. Never siphon by mouth or take internally. Avoid contact with eyes, skin and clothing. Prevent contact with food, chewing, or smoking materials.

When performing repairs and maintenance on contaminated equipment, keep unnecessary persons away from the area. Eliminate all potential ignition sources. Drain and purge equipment, as necessary, to remove material residues. Use gloves constructed of impervious materials and protective clothing if direct contact is anticipated. Provide ventilation to maintain exposure potential below applicable exposure limits. Promptly remove contaminated clothing. Wash exposed skin thoroughly with soap and water after handling.

Empty containers may contain material residues which can ignite with explosive force. Misuse of empty containers can be dangerous if used to store toxic, flammable, or reactive materials. Cutting or welding of empty containers can cause fire, explosion, or release of toxic fumes from residues. Do not pressurize or expose empty containers to open flame, sparks, or heat. Keep container closed and drum bungs in place. All label warnings and precautions must be observed. Return empty drums to a qualified reconditioner. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling, or disposing of empty containers and/or waste residues of this material. Emergency eyewash fountains and safety showers should be available in the immediate vicinity of potential exposure.

Storage

Store and transport in accordance with all applicable laws. Keep containers tightly closed and store in a cool, dry, well-ventilated place, plainly labeled, and out of closed vehicles. Keep away from all ignition sources! Ground all equipment containing this material. Containers should be able to withstand pressures expected from warming and cooling in storage. This product should be stored in a cool, well-ventilated area. All electrical equipment in areas where this material is stored or handled should be installed in accordance with applicable requirements of the NFPA's National Electrical Code (NEC).

8. Exposure Controls and Personal Protection

Engineering Controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor and/or mists below the pertinent exposure limits (see below). All electrical equipment should comply with the NFPA NEC Standards. Ensure that an emergency eye wash station and safety shower are near the work-station location.

Personal Protective Equipment (PPE)

Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to OSHA regulations. The following pictograms represent the minimum requirements for personal protective equipment. For certain operations, additional Personal Protective Equipment may be required.



Eye Protection

Safety glasses with side shields are recommended as a minimum protection. During transfer operations or when there is a likelihood of misting, splashing, or spraying, chemical goggles and face shield should be worn. Suitable eye wash equipment should be readily available.

Hand Protection

Avoid skin contact and use gloves (disposable PVC, neoprene, Nitrile, vinyl, or PVC/NBR). Before eating, drinking, smoking, use of toilet facilities, or leaving work, wash hands with plenty of mild soap and water. DO NOT use gasoline, kerosene, other solvents, or harsh abrasive skin cleaners.

Body Protection

Avoid skin contact. It is recommended that fire-retardant garments (e.g. Nomex™) be worn while working with flammable and combustible liquids. If splashing or spraying is expected, chemical-resistant protective clothing (Tyvek®, Nitrile, or neoprene) should be worn. This might include long sleeves, apron, slicker suit, boots, and additional facial protection. If general contact occurs, IMMEDIATELY remove soaked clothing and take a shower. Contaminated leather goods should

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be removed promptly and discarded.

Respiratory Protection

For unknown vapor concentrations use a positive-pressure, pressure-demand, self-contained breathing apparatus (SCBA). For known vapor concentrations above the occupational exposure guidelines (see below), use a NIOSH-approved organic vapor respirator if adequate protection is provided. Protection factors vary depending upon the type of respirator used. Respirator use should follow OSHA requirements (29 CFR 1910.134) or equivalent standard (e.g. ANSI Z88.2).

General Comments

Warning! Odor is an inadequate warning for hazardous conditions.

Occupational Exposure Guidelines

Substance

Applicable Workplace Exposure Levels

Methyl Alcohol (Methanol)

US(ACGIH)/2003	200 ppm.	8Hrs / TWA	Skin
US(ACGIH)/2003	250 ppm.	15 min/STEL	Skin
US(OSHA)/2003	200 ppm.	8Hrs / TWA	Skin

Phosphoric Acid

Airborne Exposure Limits:			
US(OSHA)/2003	1 mg/m3	TWA	
US(ACGIH)/2003	1mg/m3	TWA	
US(ACGIH)/2003	3 mg/m3	STEL	

9. Physical and Chemical Properties

Physical State	Liquid	Color	Transparent, Water-Clear.
Odor	Alcohol Odor	pH	< 2.0
Specific Gravity	1.052 g/mL	Liquid Density	8.78 Lbs. / Gallon
Vapor Pressure	31.5 mm Hg @ 68 ° F.	Vapor Density	~ 1.3 (Air = 1)
Boiling Point / Range	> 200° F.	Freezing Point	App. + 20° F.
Evaporation Rate	Slower than Ethyl Ether	Solubility in Water	Soluble at all temperatures

10. Stability and Reactivity

Chemical Stability	Stable
Hazardous Polymerization	Not expected to occur.
Conditions to Avoid	Keep away from extreme heat, sparks, open flame, and strongly oxidizing conditions.
Materials Incompatibility	Strong oxidizing agents, Chlorine, Coatings, Rubber, Certain forms of plastics. Aluminum metals. Zinc (i.e. Galvanized steel). Iron, Copper, or Bronze. Any reactive metal which will displace hydrogen.
Hazardous Decomposition Products	May form carbon monoxide, carbon dioxide, and other oxides of carbon, and phosphorous.

11. Toxicological Information

Product Summary	This product contains Methanol, which can cause blindness and be life threatening. Methanol is a human poison. It can produce severe metabolic acidosis, blindness and death. The onset of symptoms may be delayed for 18 to 24 hours after ingestion. Toxicity is related to the degree of acidosis produced.
Carcinogenicity	None of the intentional materials in this product are listed by ACGIH, IARC, NIOSH, NTP or OSHA.
Epidemiology (Methanol)	Methanol has been shown to produce fetotoxicity in the embryo or fetus of laboratory animals. Specific developmental abnormalities include cardiovascular, musculoskeletal, and urogenital systems.
Teratogenicity (Methanol)	Effects on Newborn: Behavioral, Oral, rat: TDLo = 7500 mg/kg (female 17-19 days after conception). Effects on Embryo or Fetus: Fetotoxicity, Inhalation, rat: TCLo = 100000 ppm/7H (female 7-15

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	days after conception). Specific Developmental Abnormalities: Cardiovascular, Musculoskeletal, Urogenital, Inhalation, rat: TCLo = 20000 ppm/7H (7-14 days after conception).
Reproductive Effects	Methanol: Paternal Effects: Spermatogenesis: Intraperitoneal, mouse TDLo = 5 gm/kg (male, 5 days pre-mating). Fertility: Oral, rat: TDLo = 35295 mg/kg (female 1-15 days after conception). Paternal Effects: Testes, Epididymis, Sperm duct: Oral, rat: TDLo = 200 ppm /20H (male 78 weeks pre-mating). Phosphoric Acid: No Data
Neurotoxicity	No information available
Mutagenicity	Methanol: DNA Inhibition: Human Lymphocyte = 7900 mg/L. Cytogenetic analysis: Oral, mouse = 1 gm/kg. Phosphoric Acid: No Data
Immediate (Acute) Effects	Low pH material , may cause severe eye and skin burns, with possible destruction of tissues.
Delayed (Subchronic and Chronic) Effects	No Data Available.
Other Studies	Methanol: Standard Draize Test (Skin, rabbit) = 20 mg/24H (Moderate) Standard Draize Test: Administration into the eye (rabbit) = 40 mg (Moderate). Standard Draize Test: Administration into the eye (rabbit) = 100 mg/24H (Moderate). Phosphoric Acid: No Data

12. Ecological Information

Ecotoxicity

Ecological effects testing has not been conducted on this material. If spilled, this material, its storage tank water bottoms and sludge, and any contaminated soil or water may be hazardous to human, animal, and aquatic life. The Methanol content of this product is volatile and might contribute to the creation of atmospheric smog.

Environmental Fate

When released into the soil, this material may leach into groundwater. When released to water, acidity may be readily reduced by natural water hardness minerals; the phosphate, however, may persist indefinitely. This material is potentially toxic to freshwater and saltwater ecosystems. The Methanol component of this product will normally evaporate rapidly. Methanol is expected to biodegrade in soil and water very rapidly.

13. Disposal Considerations

Waste Management Information

Dispose of in accordance with all applicable local, state, and federal regulations. Recovered non-usable material may be regulated by US EPA as a hazardous waste due to its ignitability and/or its toxic characteristics. In addition, conditions of use may cause this material to become a hazardous waste, as defined by Federal or State regulations. It is the responsibility of the user to determine if the material is a RCRA "hazardous waste" at the time of disposal. Transportation, treatment, storage, and disposal of waste material must be conducted in accordance with RCRA regulations (see 40 CFR Parts 260 through 271). State and/or local regulations might be even more restrictive. Contact the RCRA/Superfund Hotline at (800) 424-9436 or your regional US EPA office for guidance concerning case specific disposal issues.

14. Transport Information

DOT Information - 49 CFR 172.101

Proper Shipping Name

CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S., MIXTURE, UN 3265, II

Hazard Class

Class 8: Corrosive Liquid

Packing Group

II

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UN / NA ID	UN 3265						
NOS Component	Phosphoric Acid, Methanol						
RQ (Reportable Quantity) – 49 CFR 172.101	<table><thead><tr><th>Component</th><th>Product Quantity (Lbs.)</th></tr></thead><tbody><tr><td>Methanol</td><td>5,000 Lbs.</td></tr><tr><td>Phosphoric Acid</td><td>5,000 Lbs.</td></tr></tbody></table>	Component	Product Quantity (Lbs.)	Methanol	5,000 Lbs.	Phosphoric Acid	5,000 Lbs.
Component	Product Quantity (Lbs.)						
Methanol	5,000 Lbs.						
Phosphoric Acid	5,000 Lbs.						
ERG No.	153						
Placards Required							



15. Regulatory Information

TSCA Inventory	The intentional ingredients of this product are listed.											
CERCLA RQ - 40 CFR 302.4(a)	<table><thead><tr><th>Component</th><th>CAS Number</th><th>RQ (Lbs.)</th></tr></thead><tbody><tr><td>Methanol</td><td>67-56-1</td><td>5,000 Lbs.</td></tr><tr><td>Phosphoric Acid</td><td>7664-38-2</td><td>5,000 Lbs.</td></tr></tbody></table>	Component	CAS Number	RQ (Lbs.)	Methanol	67-56-1	5,000 Lbs.	Phosphoric Acid	7664-38-2	5,000 Lbs.		
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Phosphoric Acid	7664-38-2	5,000 Lbs.										
SARA 302 Components – 40 CFR 355 Appendix A	None identified											
SARA 311/312 - 40 CFR 370.2	Fire Hazard, Acute (Immediate) Health Hazard.											
SARA 313 Components - 40 CFR 372.65	<table><thead><tr><th>Section 313 Component(s)</th><th>CAS Number</th><th>%Wt.</th></tr></thead><tbody><tr><td>Methanol</td><td>67-56-1</td><td>< 20</td></tr></tbody></table>	Section 313 Component(s)	CAS Number	%Wt.	Methanol	67-56-1	< 20					
Section 313 Component(s)	CAS Number	%Wt.										
Methanol	67-56-1	< 20										
OSHA Process Safety Management – 29 CFR 1910	None Listed											
EPA Accidental Release Prevention – 40 CFR 68	None Listed											
California Proposition 65	None for Methanol.											
New Jersey RTK Label Information	<table><thead><tr><th>Section 313 Component(s)</th><th>CAS Number</th></tr></thead><tbody><tr><td>Methanol</td><td>67-56-1</td></tr><tr><td>Phosphoric Acid</td><td>7664-38-2</td></tr></tbody></table>	Section 313 Component(s)	CAS Number	Methanol	67-56-1	Phosphoric Acid	7664-38-2					
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Section 313 Component(s)	CAS Number											
Methanol	67-56-1											
Phosphoric Acid	7664-38-2											

16. Other Information

Disclaimer of Liability:

The information in this msds was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. This msds was prepared and is to be used only for this product.

The conditions or methods of handling, storage, use, and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with handling, storage, use or disposal of the product.

Abbreviations:

App. = Approximately EQ = Equal > = Greater Than < = Less Than N/AP = Not Applicable ND = No Data
NE = Not Established

ACGIH = American Conference of Governmental Industrial Hygienists
IARC = International Agency for Research on Cancer

AIHA = American Industrial Hygiene Association
NTP = National Toxicology Program

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NIOSH = National Institute of Occupational Safety and Health
NPCA = National Paint and Coating Manufacturers Association
NFPA = National Fire Protection Association

OSHA = Occupational Safety and Health Administration
HMIS = Hazardous Materials Information System
EPA = Environmental Protection Agency

Explanation of the HMIS® Ratings

HMIS® III - HEALTH HAZARD RATINGS

* **Chronic Hazard** Chronic (long-term) health effects may result from repeated overexposure

0 Minimal Hazard No significant risk to health

1 Slight Hazard Irritation or minor reversible injury possible

2 Moderate Hazard Temporary or minor injury may occur

3 Serious Hazard Major injury likely unless prompt action is taken and medical treatment is given

4 Severe Hazard Life-threatening, major or permanent damage may result from single or repeated overexposures

HMIS® III - FLAMMABILITY RATINGS

0 Minimal Hazard Materials that will not burn

1 Slight Hazard Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)

2 Moderate Hazard Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 F but below 200 F. (Classes II & IIIA)

3 Serious Hazard Materials capable of ignition under almost all normal temperature conditions. Includes flammable liquids with flash points below 73 F and boiling points above 100 F. as well as liquids with flash points between 73 F and 100 F. (Classes IB & IC)

4 Severe Hazard Flammable gases, or very volatile flammable liquids with flash points below 73 F, and boiling points below 100 F. Materials may ignite spontaneously with air. (Class IA)

HMIS® III - PHYSICAL HAZARD RATINGS

0 Minimal Hazard Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

1 Slight Hazard Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

2 Moderate Hazard Materials that are unstable and may undergo violent chemical changes at normal temperature and pressure with low risk for explosion. Materials may react violently with water or form peroxides upon exposure to air.

3 Serious Hazard Materials that may form explosive mixtures with water and are capable of detonation or explosive reaction in the presence of a strong initiating source. Materials may polymerize, decompose, self-react, or undergo other chemical change at normal temperature and pressure with moderate risk of explosion.

4 Severe Hazard Materials that are readily capable of explosive water reaction, detonation or explosive decomposition, polymerization, or self-reaction at normal temperature and pressure.