Safety Data Sheet

AF 188 (#2614)

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SECTION 1: Identification

Identification

Product Name	:	AF 188 (#2614)
Product code	:	FP3158
CAS-No.	:	MIXTURE
Synonyms	:	R11554
Recommended use	:	No additional information available
Restrictions on use	:	No additional information available

Supplier

Hydrite Chemical Co.
17385 Golf Parkway
Brookfield, WI, 53045
T 262-792-1450

Emergency telephone number

EMERGENCY RESPONSE NUMBERS:
24 Hour Emergency #: (414) 277-1311
CHEMTREC Emergency #: (800) 424-9300

SECTION 2: Hazard(s) identification

Classification of the substance or mixture

GHS US classification

Corrosive to metals Category 1
Skin corrosion/irritation Category 1B
Serious eye damage/eye irritation Category 1

GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :

Signal word (GHS US) : Danger

Hazard statements (GHS US) : May be corrosive to metals
Causes severe skin burns and eye damage

Precautionary statements (GHS US)

Disposal : Keep only in original container.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash hands thoroughly after handling.
Wear protective clothing, eye protection, face protection, protective gloves.

Response	:	If swallowed: rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a doctor. Specific treatment (see supplemental first aid instruction on the SDS). Wash contaminated clothing before reuse. Absorb spillage to prevent material-damage.
Storage	:	Store in a secure manner. Store in corrosive resistant container with a resistant inner liner.
Disposal	:	Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Hazards not otherwise classified

Hazards not otherwise classified	:	May react with certain metals to form explosive/flammable hydrogen gas. May react violently with water.

Unknown acute toxicity (GHS US)

Unknown acute toxicity (GHS US)	:	1.8% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

SECTION 3: Composition/Information on ingredients

Substances/ Mixtures

Name	Product identifier	%	GHS US classification
PHOSPHORIC ACID	CAS-No.: 7664-38-2	10 - 25	Met. Corr. 1, H290 Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Eye Dam. 1, H318
N,N-DIMETHYL-N-DODECYLAMINE OXIDE	CAS-No.: 1643-20-5	1 – 5	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Acute 1, H400 Aquatic Chronic 2, H411

*Note: Any chemical identity and/or exact percentage not expressly stated is being withheld as a trade secret or is due to batch variation.

SECTION 4: First-aid measures

Description of first aid measures

First-aid measures general	:	Call a physician immediately.
First-aid measures after inhalation	:	If inhaled: Remove to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration, preferably mouth-to-mouth. GET MEDICAL ATTENTION IMMEDIATELY. Do not give mouth-to-mouth resuscitation if victim ingested or inhaled the substance. If using mouth to mouth, use rescuer protection (pocket mask, etc).
First-aid measures after skin contact	:	If on skin: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Do not reuse clothing and shoes until cleaned. Do not apply oils, ointments, or creams unless directed by a physician.

First-aid measures after eye contact : If in eyes: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Tilt head to avoid contaminating unaffected eye. Get immediate medical attention. Remove contact lenses if easy to do.

First-aid measures after ingestion : If swallowed: If fully conscious, drink a quart of water. DO NOT induce vomiting. CALL A PHYSICIAN IMMEDIATELY. If unconscious or in convulsions, take immediately to a hospital or a physician. NEVER induce vomiting or give anything by mouth to an unconscious victim. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Rinse mouth out with water.

Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : May be corrosive to the respiratory tract causing severe irritation and burns. . Vapor, dust, mist or spray may cause: coughing, pulmonary edema, chemical pneumonitis, permanent damage. Effects may be delayed.

Symptoms/effects after skin contact : CORROSIVE-CAUSES SEVERE IRRITATION AND BURNS. Contact may cause: dermatitis(inflammation of the skin), ulceration and permanent skin damage.

Symptoms/effects after eye contact : Serious damage to eyes. CORROSIVE-CAUSES SEVERE IRRITATION AND BURNS. May cause: ulcerations, conjunctivitis, permanenet eye damage, and blindness.

Symptoms/effects after ingestion : CORROSIVE. May irritate or burn: mouth, throat, esophagus and stomache. May cause: abdominal pain, chest pain, nausea, vomiting, diarrhea, seizures, hemorrhaging and permanent damage. Aspiration into the lungs may occur during ingestion or vomiting, resulting in severe pulmonary injury. May be fatal if swallowed.

Immediate medical attention and special treatment, if necessary : Treat symptomatically. No specific antidote known. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5: Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

Unsuitable extinguishing media : No additional information available

Specific hazards arising from the chemical

Fire hazard : No fire hazard.

Explosion hazard : No direct explosion hazard.

Reactivity in case of fire : Contact with metals could evolve flammable hydrogen gas.

Hazardous decomposition products : Toxic fumes may be released. Phosphorus oxides. Phosphine. Corrosive vapors. Nitrogen oxides. Ammonia (as NH3). Carbon oxides (CO, CO2). Various hydrocarbon fragments.

Firefighting instructions : Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection. Evacuate personnel to a safe area. Wear a self-contained breathing apparatus and appropriate personal protective equipment (PPE). Stay upwind/keep distance from source. Cool down the containers exposed to heat with a water spray. Reacts with water, generates heat.

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

Emergency procedures : Evacuate unnecessary personnel. Stop leak if safe to do so. Ventilate spillage area.

Environmental precautions

Environmental precautions : Avoid release to the environment. Notify authorities if liquid enters sewers or public waters.

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. Stop leak, if possible without risk. Soak up residue with inert absorbent material. Place in non-leaking containers for immediate disposal. Do not touch or walk on the spilled product.
Methods for cleaning up	:	Flush remaining area with water and neutralize with Soda Ash or Lime and dispose of properly. Adequate ventilation is required if soda ash is used, because of the consequent release of carbon dioxide gas.
Other information	:	Dispose of materials or solid residues at an authorized site.
Reference to other sections	:	For further information refer to section 13.

SECTION 7: Handling and storage

Precautions for safe handling

Additional hazards when processed	:	Not expected to present a significant hazard under anticipated conditions of normal use.
Precautions for safe handling	:	Ensure good ventilation of the work station. Do NOT taste or swallow. Do not breathe vapors, dust, mist. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Contact with water may cause violent reaction with evolution of heat. To Dilute: add product slowly to lukewarm water; not water to product. Reacts with : strong bases.
Hygiene measures	:	Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

Conditions for safe storage, including any incompatibilities

Technical measures	:	Corrosive material.
Storage conditions	:	Keep only in original container. Store in a secure manner. Store in a cool, well ventilated area, out of direct sunlight. Store in a dry location away from heat. Keep away from incompatible materials. Keep containers tightly closed. Do not store in unlabeled or mislabeled containers. Do not freeze. Reacts with most metals to form explosive/flammable hydrogen gas.
Incompatible materials	:	Metals.
Packaging materials	:	Always store product in container of same material as original container.

SECTION 8: Exposure controls/personal protection

Control parameters

Component	ACGIH	OSHA
N,N-DIMETHYL-N-DODECYLAMINE OXIDE	No data available	No data available
PHOSPHORIC ACID	3 mg/m³ STEL, 1 mg/m³ TWA	1 mg/m³ TWA

Appropriate engineering controls

Appropriate engineering controls	:	General room ventilation and local exhaust are required. Maintain adequate ventilation. Do not use in closed or confined spaces. Avoid creating dust or mist. Keep levels below exposure limits. To determine exposure levels, monitoring should be performed regularly.
Environmental exposure controls	:	Avoid release to the environment.

Individual protection measures/Personal protective equipment

Personal protective equipment	:	Wear recommended personal protective equipment.
Hand protection	:	Protective gloves. Chemical-resistant. Impervious. Acid-proof.
Eye protection	:	Do not wear contact lenses. Wear chemical safety goggles and a full face shield while handling this product.
Skin and body protection	:	Protective gloves: Impervious. Chemical-resistant. Acid-proof. Prevent contact with this product. Wear gloves and protective clothing depending on condition of use.

Respiratory protection	:	Respiratory protection must be worn if ventilation does not eliminate symptoms or keep levels below recommended exposure limits. If exposure limits are exceeded, wear: NIOSH-Approved respirator. DO NOT exceed limits established by the respirator manufacturer. All respiratory protection programs must comply with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements and must be followed whenever workplace conditions require a respirator's use.
Other information	:	Wash with soap and water before meal times and at the end of each work shift. Good manufacturing practices require gross amounts of any chemical be removed from skin as soon as practical, especially before eating or smoking. Protective equipment. Eye-wash station. Safety shower. Rubber apron. Chemical safety shoes. Rubber boots. Protective clothing.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	:	Liquid
Color	:	Red.
Odor	:	Mild.
Odor threshold	:	No data available
pH	:	3
Melting point	:	Not applicable
Freezing point	:	No data available
Boiling point	:	≥ 212 °F
Flash point	:	No data available
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	Not applicable.
Vapor pressure	:	No data available
Relative vapor density at 20°C	:	No data available
Relative density	:	1.066 @ 25 °C
Solubility	:	Complete.
Partition coefficient n-octanol/water (Log Pow)	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available

SECTION 10: Stability and reactivity

Information on stability and reactivity

Reactivity	:	The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	May react with certain metals to produce flammable hydrogen gas. Reacts exothermically with (some) bases. Phosphoric acid forms flammable gases with sulfides, mercaptans, cyanides, and aldehydes. Phosphoric acid forms toxic fumes with cyanides, sulfides, fluorides, organic peroxides, and halogenated organics. Phosphoric acid mixtures with nitromethane are explosive.
Conditions to avoid	:	Elevated temperature. Contact with water may cause violent reaction with evolution of heat. To Dilute: add product slowly to lukewarm water; not water to product.
Incompatible materials	:	amines. bases. strong oxidizing agents. strong reducing agents. aluminum. aldehydes. alcohols. glycols. sulfides. steel. brass. sulfites. metals. fluorine. sulfur trioxide. phosphorous pentoxide. copper. cyanides. combustible materials. organic peroxides. ketones. nitromethane. sulfur. mild steel. epoxides. caustics. amides. sodium tetrahydroborate. azo-compounds. carbamates. esters. phenols. cresols. organophosphates. explosives. unsaturated halides. mercaptans. bronze. fluorides. halogenated organics.
Hazardous decomposition products	:	Phosphorous oxide. phosphine. Nitrogen oxides. ammonia. Carbon monoxide. Carbon dioxide. Hydrocarbons. May liberate toxic gases.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Numerical measures of toxicity

Component	Oral LD50	Dermal LD50	Inhalation LC50
N,N-DIMETHYL-N-DODECYLAMINE OXIDE	Rat: 1064 mg/kg	Rabbit: 560 – 2000 mg/kg Rat:2000 mg/kg	No data available
PHOSPHORIC ACID	Rat: 1530 mg/kg	Rabbit: 2740 mg/kg	Rat: 3846 mg/l/1h

Skin corrosion/irritation : Causes severe skin burns.
Serious eye damage/irritation : Causes serious eye damage.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified
Viscosity, kinematic : No data available
Symptoms/effects : No additional information available
Symptoms/effects after inhalation : May be corrosive to the respiratory tract causing severe irritation and burns. . Vapor, dust, mist or spray may cause: coughing, pulmonary edema, chemical pneumonitis, permanent damage. Effects may be delayed.
Symptoms/effects after skin contact : CORROSIVE-CAUSES SEVERE IRRITATION AND BURNS. Contact may cause: dermatitis(inflammation of the skin), ulceration and permanent skin damage.
Symptoms/effects after eye contact : Serious damage to eyes. CORROSIVE-CAUSES SEVERE IRRITATION AND BURNS. May cause: ulcerations, conjunctivitis, permanenet eye damage, and blindness.
Symptoms/effects after ingestion : CORROSIVE. May irritate or burn: mouth, throat, esophagus and stomache. May cause: abdominal pain, chest pain, nausea, vomiting, diarrhea, seizures, hemorrhaging and permanent damage. Aspiration into the lungs may occur during ingestion or vomiting, resulting in severe pulmonary injury. May be fatal if swallowed.
Other information : Phosphoric acid has a low vapor pressure at room temperature and is not expected to present a significant inhalation hazard under ambient conditions. Phosphoric acid, can, however, be irritating to the respiratory tract if inhaled as a mist or if it is vaporized. The ACGIH has established a Threshold Limit Value (TLV) for Phosphoric acid. For further information on this chemical, refer to the current edition of the Documentation of The Threshold Limit Values and Biological Exposure Indices.

SECTION 12: Ecological information

Toxicity

N,N-DIMETHYL-N-DODECYLAMINE OXIDE (1643-20-5)

LC50 - Fish [1]	134 mg/l (Exposure time: 96 h - Species: Danio rerio [semi-static])
EC50 - Crustacea [1]	10.4 mg/l Test organisms (species): Daphnia magna
LC50 - Fish [2]	31.8 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)

N,N-DIMETHYL-N-DODECYLAMINE OXIDE (1643-20-5)	
EC50 - Crustacea [2]	3.1 mg/l Test organisms (species): Daphnia magna
ErC50 algae	0.081 mg/l Source: NITE
NOEC (chronic)	0.7 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

PHOSPHORIC ACID (7664-38-2)	
LC50 - Fish [1]	75.1 mg/l Source: ECHA
EC50 - Crustacea [1]	100 mg/l Source: ECHA
EC50 72h - Algae [1]	> 100 mg/l Source: ECHA

Persistence and degradability

No additional information available

SECTION 13: Disposal considerations

Disposal methods

Regional waste regulation : U.S. - RCRA (Resource Conservation Recovery Act) - D Series Wastes - Corrosivity D002.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Additional information : Do not re-use empty containers. DO NOT pressurize, cut, weld, solder, drill, grind or expose empty containers to heat, flame, sparks or other sources of ignition. Since emptied containers retain product residue, follow label warnings even after container is emptied.

SECTION 14: Transport information

Modes of transport

DOT (Department of Transportation):

Identification Number (DOT) : UN3264
Proper Shipping Name (DOT) : Corrosive liquid, acidic, inorganic, n.o.s. (CONTAINS : PHOSPHORIC ACID)
Hazard Class (DOT) : 8
Packing group (DOT) : III
Labels Required (DOT) : Corrosive

IMDG (International Maritime Dangerous Goods Code):

Identification Number (IMDG) : UN3264
Proper Shipping Name (IMDG) : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONTAINS : PHOSPHORIC ACID)
Hazard Class (IMDG) : 8
Packing group (IMDG) : III
Labels Required (IMDG) : Corrosive substances

IATA (International Air Transport Association):

Identification Number (IATA) : UN3264
Proper Shipping Name (IATA) : corrosive liquid, acidic, inorganic, n.o.s. (CONTAINS : PHOSPHORIC ACID)
Hazard Classes (IATA) : 8
Packing group (IATA) : III

Labels Required (IATA) : Corrosive

Environmental hazards

Other information : No supplementary information available.

DOT RQ Table

Name	DOT RQ
PHOSPHORIC ACID	5000 lbs RQ

SECTION 15: Regulatory information

US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

PHOSPHORIC ACID (7664-38-2)

CERCLA RQ	5000 lb

International Regulations

No additional information available

US State regulations

Component	CAS No.	State or local regulations
PHOSPHORIC ACID	7664-38-2	Wisconsin HAP

SECTION 16: Other information

Hazard Rating System

Health: 3
Flammability: 0
Physical: 0

NFPA Rating System

NFPA health hazard: 3
NFPA fire hazard: 0
NFPA reactivity: 0

Abbreviations and acronyms

HAP	Hazardous Air Pollutant

Abbreviations and acronyms	
VOC	Volatile Organic Compound
STEL	Short Term Exposure Limit
TWA	Total Average Weight
RQ	Reportable Quantity

Revision date: 3/21/2024
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Indication of changes: Changes made throughout the SDS.New format.
SDS Prepared by: AF

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