

G.J. CHEMICAL COMPANY, INC. SAFETY DATA SHEET

1. PRODUCT IDENTIFIER

1.1 PRODUCT NAME:-----> **Ammonium Hydroxide 18-35%**
(All Grades)

PRODUCT NUMBER(S):-----> 106010 – ACS 28-30% Solution
107800 – 28-30% Solution
107840 - USP/NF 27-31% Solution
107900 – 18% solution

TRADE NAMES/ SYNONYMS:> Aqua Ammonia Solution

1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

RECOMMENDED USE: Industrial: Use in a closed batch process, Intermediate, Manufacture of substances, Laboratory Chemicals

USES ADVISED AGAINST: No information available

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Company: **G.J. CHEMICAL CO., INC.**

Address: **40 VERONICA AVENUE
SOMERSET, NJ 08873**

Telephone: **1-973-589-1450**

Fax: **1-973-589-3072**

1.4 Emergency Telephone Number

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

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4), H302

Skin corrosion (Category 1), H314

Serious eye damage (Category 1), H318

Acute aquatic toxicity (Category 1), H400

Chronic aquatic toxicity (Category 2), H411

2.2 GHS Label elements, including precautionary statements



Pictogram

GHS05

GHS07

GHS09

Signal word DANGER

Hazard statement(s)

- H302 Harmful if swallowed.
- H314 Causes severe skin burns and eye damage.
- H318 Causes serious eye damage.
- H400 Very toxic to aquatic life.
- H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

Prevention:

- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

- P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
- 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 + P310 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.
- P305 + P351 + P338 + P310 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.
- P363 Wash contaminated clothing before reuse.
- P391 Collect spillage.

Storage:

- P405 Store locked up.

Disposal:

- P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS Lachrymator.

3. INGREDIENTS

3.1 SUBSTANCE:

Ingredient	CAS No.	WT %	CLASSIFICATION
Ammonium Hydroxide	1336-21-6	18-35	Acute toxicity, Oral (Category 4), H302
	EC-No.215-647-6		Skin corrosion (Category 1), H314
	Index-No.007-001-01-2		Serious eye damage (Category 1), H318
	Reg.-No. 01-2119982985- 14-XXXX		Acute aquatic toxicity (Category 1), H400
			Chronic aquatic toxicity (Category 2), H411

Water	7732-18-5 EC-No.231-791-2	65-82	Not a hazardous substance or mixture.
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3.2 MIXTURE: Not applicable

4. FIRST-AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES:

INHALATION: AMMONIUM HYDROXIDE 18-35% SOLUTION

****FIRST AID-** Remove from exposure. If breathing is difficult, administer oxygen to restore normal breathing. If breathing has stopped, artificial respiration should be given immediately. In the event that an individual inhales enough vapor to lose consciousness, the person should be moved to fresh air at once, Keep warm and quiet. Notify physician.

EYE CONTACT (Splash): AMMONIUM HYDROXIDE 18-35% SOLUTION

****FIRST AID-** Immediately flush eyes with water for 20 minutes, holding eyelids apart to ensure flushing. Washing eyes within several seconds is essential to achieve maximum effectiveness. Remove contact lenses, if worn, after initial rinse. Take to a physician.

SKIN CONTACT (Splash): AMMONIUM HYDROXIDE 18-35% SOLUTION

****FIRST AID-** Wash affected area with soap and water for 15 minutes. Remove contaminated clothing and shoes. Consult a physician if irritation persists.

INGESTION: AMMONIUM HYDROXIDE 18-35% SOLUTION

****FIRST AID-** Do NOT induce vomiting. If conscious, give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:

Eyes: Causes severe burns to the eyes. Direct contact or exposure to vapors may cause stinging, tearing, redness, corneal damage, eye burns and irreversible eye damage, permanent blindness.

Skin: Causes severe burns of the skin with which it comes in contact. The effect of direct contact or exposure to vapors or mists can be severely irritating to the skin and may result in redness, swelling, burns, and severe skin damage.

Inhalation: This material is corrosive. Inhalation of spray, or mist may result in varying degrees of irritation or damage to the respiratory tract. Also may cause lung tissue damage, which could produce chemical pneumonia, pulmonary edema and death.

Ingestion: This material is corrosive and may be harmful or fatal. Causes severe burns to mucous membranes of the mouth, throat, esophagus, and stomach. Alkaline burns may be delayed and cause closing of the esophagus. May be fatal.
Chronic: Prolonged over exposure by inhalation may lead to lung damage and respiratory collapse. Ingestion of excessive quantities may result in perforation of the stomach.

Medical Conditions Aggravated by Exposure: Skin contact may aggravate an existing dermatitis.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:

Human dermal exposure: Regardless of concentrations, the severity of damage and extent of its irreversibility increases with length of contact time.

5. FIRE FIGHTING MEASURES

Flash Point: Not Flammable °F

LEL %:16 for NH₃ (V)

Auto-ignition Temperature: 651°C Ammonia

UEL %:27 for NH₃ (V)

5.1 SUITABLE EXTINGUISHING MEDIA: - Foam--> x CO₂--> x Dry Chemical--> x Water-fog--> x Other-->

Unsuitable extinguishing media: No data available.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR

MIXTURE: Ammonia vapor in the range of 16%-25% in air can explode on contact with an ignition source.

CONDITIONS OF FLAMMABILITY: Not flammable or combustible.

HAZARDOUS COMBUSTION PRODUCTS: When heated this product will give off ammonia gas and nitrogen oxides.

5.3 ADVICE FOR FIREFIGHTERS: Shut off source. Water fog may be used to cool closed containers to prevent pressure build up. Wear full protective clothing including NIOSH approved self-contained breathing apparatus for confined spaces.

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES: Use personal protective equipment (see Section 8). Minimize breathing vapors, mist or gas. Minimize skin contact. Ventilate confined areas,

open all windows and doors to assure conformity with applicable government regulations. Keep all nonessential people away.

6.2 ENVIRONMENTAL PRECAUTIONS:

Keep out of water sources, drains and sewers. Do not flush into surface water or sanitary sewer system

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:

Methods for cleanup and containment:

Shut off valves, contain spill, for large spills use a vacuum truck to remove. Do not put water directly on this product as gas evolution may increase. This product may represent an explosion hazard under confined space and ventilating conditions. Remove all sources of ignition. Keep out of water sources and sewers. Discharge into the environment must be avoided. For small spills add dilute inorganic acid to neutralize, then flush with water and follow up with sodium bicarbonate in spill area.

Methods for disposal:

All cleanup material should be removed and placed in appropriate containers, labeled, and stored in safe place to await proper treatment or disposal.

REPORTABLE QUANTITY (RQ): Ammonium Hydroxide - 1621 POUNDS

The Superfund Amendments and Reauthorization Act (SARA) Section 304 requires that a release equal to or greater than the reportable quantity for this substance be immediately reported to the local emergency planning committee and the state emergency response commission (40 CFR 355.40). If the release of this substance is reportable under CERCLA Section 103, the national response center must be notified immediately at (800) 424-8882 or (202) 426-2675 in the metropolitan Washington, D. C. area (40 CFR 302.6).

6.4 REFERENCE TO OTHER SECTIONS: See Sections 8 and 13.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING: Wear personal protective equipment as described in Section 8. Avoid breathing vapors in top of shipping container. Use with adequate ventilation. Do not take internally. Avoid work practices that may release volatile components in the atmosphere. Avoid contaminating soil or releasing material into sewage and drainage systems. Use caution in opening sealed containers for proper pressure relief. Avoid breathing vapors in top of shipping container. Use with adequate ventilation. Use non-sparking tools to open or close containers.

Advice on general occupational hygiene:

Wash hands before breaks and after work. Keep away from food, drink and animal feeding stuffs. When using do not smoke.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

Store large quantities only in buildings designed to comply with OSHA 1910.106. Keep containers tight and upright to prevent leakage. Do not store with incompatible materials or in direct sunlight. Keep containers closed when not in use. Handle as a corrosive liquid. Recommended storage temperature: 15 - 25°C. Storage class (TRGS 510): 8B: Non-combustible, corrosive hazardous materials

CONTAINER WARNINGS: Metal containers should be Bonded and Grounded when pouring. Avoid free fall of liquid in excess of a few inches. Empty containers release residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, or expose such containers to heat, sparks, static electricity or other sources of ignition. Do not attempt to clean. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum re-conditioner.

7.3 SPECIFIC END USES: Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROL (PERSONAL PROTECTION)

8.1 CONTROL PARAMETERS:

Ingredient	CAS No.	WT. %	Exposure Limits
Ammonium Hydroxide	1336-21-6 EC-No.215-647-6 Index-No.007-001-01-2 Reg.-No. 01-2119982985- 14-XXXX	18-35	25ppm TWA (ACGIH) 35ppm STEL (ACGIH) 25ppm TWA (NIOSH) 35ppm STEL (NIOSH) 300ppm (IDLH)
Water	7732-18-5 EC-No.231-791-2	65-82	N.E.

Key: (PEL) = Permissible Exposure Limit OSHA
 (TLV) = Threshold Limit Value OSHA & ACGIH
 (STEL) = Short Term Exposure Limit ACGIH
 (WEEL) = USA. Workplace Environmental Exposure Levels
 (TWA) = Time Weighted Average
 CAS = Chemical Abstracts Registry Number
 IDLH = Immediate Danger to Life and Health
 N.E. =None Established

8.2 EXPOSURE CONTROLS

EXPOSURE GUIDELINES: Consider the potential hazards of this material (Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended.

ENGINEERING CONTROLS: Provide general dilution or local exhaust ventilation in volume and pattern to keep concentrations within permitted exposure limits. All areas should be ventilated in accordance with OSHA Regulation 29 CFR Part 1910. Explosion proof motors should be used in mechanical ventilation.

RESPIRATORY PROTECTION: The specific respirator selected must be based on contamination levels found in the work place, must not exceed the working limits of the respirator and be jointly approved by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration (NIOSH-MSHA):

For vapor concentrations up to 100ppm use a chemical cartridge respirator, for 100 - 300ppm use a NIOSH/MSHA Approved supplied air respirator with full face-piece and organic vapor cartridges with dust/mist pre-filter where dusts and mists may occur. For concentrations over 300ppm use a NIOSH/MSHA approved supplied air or self-contained breathing apparatus (SCBA).

BODY CLOTHING: Use chemical resistant apron or other impervious clothing. Remove and wash contaminated clothing before reuse.

SKIN PROTECTION: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product.

Full contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 480 min

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 240 min

HYGIENE: Use good personal hygiene practices, wash hands before eating, drinking, smoking or using toilet facilities.

EYE/FACE PROTECTION> Use safety eyewear with splash guards or face shield. A safety shower and eyewash should be easily accessible to the work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:

Ammonium Hydroxide 18-35% Solution

Appearance-----> Clear liquid
Color-----> Colorless
Odor-----> Strong pungent ammonia-like odor
Odor Threshold-----> No data available
pH-----> 11.7 20°C (68°F)
Molecular weight-----> 35.05amu
Melting/Freezing Point-----> -110 to -30°F (35%-18% Solution)
Boiling Range (°F)-----> 82 - 142 (35%-18% Solution)
Specific Gravity-----> 0.89-0.93@25°C (35%-18% Soln.)
Vapor Pressure-----> 115mmHg@20°C (68°F) (30% Solution)
Vapor Density (air=1)-----> 1.21
Water solubility-----> Soluble
Partition Coefficient N-Octanol/water-----> No data available
Evaporation Rate (Butyl Acetate=1)-----> No data available
Flash Point-----> No data available
Upper Flammability Limit-----> 27
Lower Flammability Limit-----> 16
Auto-ignition Temperature-----> No data available
Decomposition Temperature-----> No data available
Viscosity-----> No data available
Explosive Properties-----> No data available
Oxidizing Properties-----> No data available

9.2 Other information-----> No data available

10. STABILITY AND REACTIVITY INFORMATION

10.1 REACTIVITY: No data available.

10.2 CHEMICAL STABILITY: Unstable () Stable (X)

10.3 CONDITIONS TO AVOID: Heat, Sparks, Pilot Lights, Static Electricity, and Open Flame. Ammonia gas may be released when aqua ammonia is heated.

HAZARDOUS POLYMERIZATION: May occur () Will not occur (X)

10.4 POSSIBILITY OF HAZARDOUS REACTIONS: No data available

10.5 INCOMPATIBLE MATERIALS: Avoid direct contact with water. Do not mix with strong acids, halogens or oxidizing materials. Boron chlorites, chromium trioxide, dimethyl sulfate, ethylene oxide, gold, mercury, nitrogen tetroxide, and oleum. Copper, Iron and Zinc.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS: Gaseous ammonia on heating. Normal decomposition products of Ammonia are nitrogen and water. Oxides of nitrogen may be produced under certain conditions.

11. TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS:

Routes of Entry: Inhalation--> x Skin--> x Ingestion--> x Eye--> x

ACUTE HEALTH EFFECTS:

Effects of overexposure:

Eyes> Causes severe burns to the eyes. Direct contact or exposure to vapors may cause stinging, tearing, redness, corneal damage, eye burns and irreversible eye damage, permanent blindness.

Skin> Causes severe burns of the skin with which it comes in contact. The effect of direct contact or exposure to vapors or mists can be severely irritating to the skin and may result in redness, swelling, burns, and severe skin damage.

Inhalation> This material is corrosive. Inhalation of spray, or mist may result in varying degrees of irritation or damage to the respiratory tract. Also may cause lung tissue damage, which could produce chemical pneumonia, pulmonary edema and death.

Ingestion> This material is corrosive and may be harmful or fatal. Causes severe burns to mucous membranes of the mouth, throat, esophagus, and stomach. Alkaline burns may be delayed and cause closing of the esophagus. May be fatal.

Chronic: Prolonged over exposure by inhalation may lead to lung damage and respiratory collapse. Ingestion of excessive quantities may result in perforation of the stomach.

Medical Conditions Aggravated by Exposure> Skin contact may aggravate an existing dermatitis.

ACUTE TOXICITY:

The effects of overexposure shown in Section III are based on acute toxicity profiles. Typical values are:

Ingredient	Oral LD50 (Rat)	Skin LD50(Rabbit)	Inhalation LC50
Ammonium Hydroxide	350mg/kg		2115mg/kg/4 hr

SKIN CORROSION/IRRITATION: No data available (Ammonium hydroxide)

SERIOUS EYE DAMAGE/EYE IRRITATION: No data available (Ammonium hydroxide)

RESPIRATORY OR SKIN SENSITIZATION: No data available (Ammonium hydroxide)

MUTAGENIC EFFECTS: No data available (Ammonium hydroxide)

CARCINOGEN STATUS:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

REPRODUCTIVE TOXICITY: No data available (Ammonium hydroxide)

Specific target organ toxicity (STOT-SE) - single exposure (Globally Harmonized System): no data available (Ammonium hydroxide)

Specific target organ toxicity (STOT-RE) - repeated exposure (Globally Harmonized System): no data available

ASPIRATION HAZARD: No data available

11.2 ADDITIONAL INFORMATION: Burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. (Ammonium hydroxide)

12. ECOLOGICAL INFORMATION

DANGEROUS TO AQUATIC LIFE IN HIGH CONCENTRATIONS

May be dangerous if it enters water intakes.

Notify local health and pollution control officials.

Notify operators of nearby water intakes.

12.1 AQUATIC TOXICITY:

Acute toxicity to Fish:

LC50 Cyprinus carpio-----1.34-1.7mg/L - 48 h

Chronic Toxicity to Fish:

LC-50 Ictalurus punctatus-----37.5ppm – 8 days

Toxicity to daphnia and other aquatic invertebrates:

LC50 - Daphnia magna (Water flea) - 25.4 mg/l - 48 h (Ammonium hydroxide)

Toxicity to Aquatic Plants: Ammonia is used by algae and aquatic macrophytes as a source of nitrogen for protein synthesis. Algal assimilation may be a significant sink for ammonia in freshwater environments. It is estimated that 34 % of ammonia may be removed by algal assimilation. Ceratophyllum demersum, a non rooted macrophyte can remove ammonia at the rate ammonia is released through decomposition in a pond.

Toxicity to Terrestrial Plants:
Can cause inhibition of photosynthesis.

12.2 PERSISTENCE AND DEGRADABILITY: Miscible in water and readily degrades.

12.3 BIOACCUMULATIVE POTENTIAL: Does not bioaccumulate
Biological Oxygen Demand (BOD): No data available

12.4 MOBILITY IN SOIL: No data available.

12.5 RESULTS OF PBT AND vPvB:
PBT assessment results: This substance is not classified as PBT or vPvB.

12.6 OTHER ADVERSE EFFECTS: Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS: Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly it is the responsibility of the user to determine the proper storage, transportation, treatment and or disposal methodologies for spent materials and residues at time of disposition. Dispose in accordance with all applicable disposal regulations. Incinerate under controlled conditions in a permitted facility.

CONTAMINATED PACKAGING: Dispose of as unused product.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

DISPOSAL MUST BE IN ACCORDANCE WITH STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE, 48 CFR 262

14. TRANSPORT INFORMATION

Land Transport (DOT)

14.1 USDOT ID Number-----> UN2672

14.2 USDOT Shipping Name-----> Ammonia Solutions, relative density between 0.88 and 0.957 at 15°C with more than 10% but not more than 35% Ammonia.

14.3 USDOT Hazard Classification-----> 8 (Corrosive Liquid)
USDOT Label Codes-----> 8

14.4 USDOT Package Code-----> III

14.5 Marine Pollutant-----> Yes

14.6 Special precautions for user-----> Yes
Emergency Response Guide-----> 154

Reportable Quantity-----> 1621lbs.

Sea Transport (IMDG)

- 14.1 ID Number-----> UN2672
- 14.2 Proper shipping name-----> Ammonia Solutions, relative density between 0.88 and 0.957 at 15°C with more than 10% but not more than 35% Ammonia.
- 14.3 Hazard Classification-----> 8 (Corrosive Liquid)
Label Codes-----> 8
- 14.4 Package Code-----> III
- 14.5 Marine Pollutant-----> Yes
- 14.6 Special precautions for user-----> Yes
EMS-Number-----> F-A, S-B

Air Transport (IATA)

- 14.1 ID Number-----> UN2672
- 14.2 Proper shipping name-----> Ammonia Solutions, relative density between 0.88 and 0.957 at 15°C with more than 10% but not more than 35% Ammonia.
- 14.3 Hazard Classification-----> 8 (Corrosive Liquid)
Label Codes-----> 8
- 14.4 Package Code-----> III
- 14.5 Environmental hazard-----> No
- 14.6 Special precautions for user-----> Yes

15. REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE:

SARA TITLE III (Superfund Amendment and Reauthorization Act)

SECTION 302 AND 304: Extremely Hazardous Substance List (40 CFR 355) - Not Listed

SECTION 313: Toxic Chemicals Listing (40 CFR 372.65) - Listed

Ammonium Hydroxide 1336-21-6;

SECTION 311/312: Hazard Categorization (40 CFR 370) - Acute Health Hazard

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)

SECTION 102(A) Hazardous Substances (40 CFR 302.4) - Listed

Ammonium hydroxide CAS-No.1336-21-6

Reportable Quantity - 1621pounds.

SECTION 101(14) Reportable Quantity: 1621 lbs

**Massachusetts Right to Know Components
Ammonium hydroxide CAS-No.1336-21-6**

**Pennsylvania Right to Know Components
Ammonium hydroxide CAS-No.1336-21-6
Water CAS-No.7732-18-5**

**New Jersey Right to Know Components
Ammonium hydroxide CAS-No.1336-21-6
Water CAS-No.7732-18-5**

**California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.**

**TSCA (Toxic Substance Control Act)
Ammonium hydroxide CAS-No.1336-21-6 and water CAS-No. 7732-18-5 are listed on the TSCA Inventory.**

International Inventories:

<u>Country or Region</u>	<u>Inventory Name</u>	<u>On inventory yes/no</u>
<u>Australia</u>	Australian Inventory of Chemical Substances (AICS)	Yes
<u>Canada</u>	Domestic Substances List (DSL)	Yes
<u>Canada</u>	Non-Domestic Substances List (NDSL)	No
<u>China</u>	Inventory of Existing Chemical Substances in China (IECSC)	Yes
<u>Europe</u>	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
<u>Europe</u>	European List of Notified Chemical Substances (ELINCS)	No
<u>Japan</u>	Inventory of Existing and New Chemical Substances (ENCS)	Yes
<u>Japan</u>	Industrial Safety & Health Law Inventory (ISHL)	Yes
<u>Korea</u>	Existing Chemicals List (ECL)	Yes
<u>Mexico</u>	National Inventory of Chemical Substances (INSQ)	Yes
<u>New Zealand</u>	New Zealand Inventory	Yes
<u>Philippines</u>	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
<u>Switzerland</u>	Inventory of Notified New Substances (CHINV)	Yes
<u>Taiwan</u>	National Existing Chemical Inventory (NECI)	Yes
<u>United States & Puerto Rico</u>	Toxic Substances Control Act Inventory	Yes

15.2 CHEMICAL SAFETY ASSESSMENT: A chemical safety assessment has not been carried out for this substance.

16. OTHER INFORMATION:

HMIS (Hazardous Materials Identification System)

Hazard Rating:**4-Extreme****3-High****2-Moderate****1-Slight****0-Insignificant**

NFPA RATINGS (SCALE 0-4): Health=3 Fire=0 Reactivity=0
HMIS RATINGS (SCALE 0-4): Health=3 Fire=0 Reactivity=0 PPE=G

Hazard statement(s) from Section 2 and 3:**H302 Harmful if swallowed.****H314 Causes severe skin burns and eye damage.****H318 Causes serious eye damage.****H400 Very toxic to aquatic life.****H411 Toxic to aquatic life with long lasting effects.****Date of preparation-----> February 9, 2010****Revision Number-----> 1.3****Revision Content-----> General update all sections****Revision Date-----> October 22, 2018****Prepared by-----> T. G Fenstermaker, Jr.****Acronyms:**

ACGIH - American Conference of Governmental Industrial Hygienists
AIHA - American Industrial Hygiene Association
ANSI - American Nation Standards Institute
API - American Petroleum Institute
CERCLA - Comprehensive Emergency Response, Compensation, and Liability Act
DOT - U.S. Department of Transportation
EPA - U.S. Environmental Protection Agency
HMIS - Hazardous Materials Information System
IARC - International Agency For Research On Cancer
MSHA - Mine Safety and Health Administration
NFPA - National Fire Protection Association
NIOSH - National Institute of Occupational Safety and Health
NOIC - Notice of Intended Change (Proposed change to ACGIH TLV)
NTP - National Toxicology Program
OPA - Oil Pollution Act of 1990
OSHA - U.S. Occupational Safety & Health Administration
PEL - Permissible Exposure Limit (OSHA)
RCRA - Resource Conservation and Recovery Act
REL - Recommended Exposure Limit (NIOSH)
SARA - Superfund Amendments and Reauthorization Act of 1986 Title III
SCBA - Self-Contained Breathing Apparatus
STEL - Short-Term Exposure Limit (generally 15 minutes)
TLV - Threshold Limit Value
TSCA - Toxic Substances Control Act
TWA - Time Weighted Average (8hr.)
WHMIS - Canadian Workplace Hazardous Materials Information System

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