

SECTION 1: Identification

1.1. Identification

Product form	: Substance
Substance name	: Ammonium Hydroxide, ACS
CAS No	: 1336-21-6
Product code	: LC11050
Formula	: NH ₄ OH
Synonyms	: ammonia hydrate, 28%-30% / ammonia, liquor, 28%-30% / ammonia, solutions, 28%-30% / ammonia water, 28%-30% / aqua ammonia, solution, 28%-30% / spirit of hartshorn, 28%-30%

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture	: Chemical raw material Food industry: additive Solvent
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1.3. Details of the supplier of the safety data sheet

LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zellienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number

Emergency number	: CHEMTREC: 1-800-424-9300 or 011-703-527-3887
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SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute toxicity (oral) Category 4	H302
Acute toxicity (inhalation: vapor) Category 4	H332
Skin corrosion/irritation Category 1C	H314
Serious eye damage/eye irritation Category 1	H318
Hazardous to the aquatic environment - Acute Hazard Category 1	H400

Full text of H statements : see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US)



GHS05

GHS07

GHS09

Signal word (GHS-US)	: Danger
Hazard statements (GHS-US)	: H302+H332 - Harmful if swallowed or if inhaled H314 - Causes severe skin burns and eye damage H400 - Very toxic to aquatic life
Precautionary statements (GHS-US)	: P260 - Do not breathe mist, spray, vapors P264 - Wash exposed skin thoroughly after handling P270 - Do not eat, drink or smoke when using this product P271 - Use only outdoors or in a well-ventilated area P273 - Avoid release to the environment P280 - Wear eye protection, face protection, protective clothing, protective gloves 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 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

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P310 - Immediately call a poison center/doctor
P363 - Wash contaminated clothing before reuse
P391 - Collect spillage
P405 - Store locked up
P501 - Dispose of contents/container to comply with local, state and federal regulations

2.3. Other hazards

Other hazards not contributing to the classification : None.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substance

Substance type : Multi-constituent
Name : Ammonium Hydroxide, ACS
CAS No : 1336-21-6

Name	Product identifier	%	GHS-US classification
Water	(CAS No) 7732-18-5	72	Not classified
Ammonia	(CAS No) 7664-41-7	28	Flam. Gas 2, H221 Compressed gas, H280 Acute Tox. 3 (Inhalation), H331 Skin Corr. 1B, H314 Aquatic Acute 1, H400

Full text of H-phrases: see section 16

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with labored breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact : Wash immediately with lots of water (15 minutes)/shower. Do not apply (chemical) neutralizing agents. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital.

First-aid measures after eye contact : Rinse immediately with plenty of water for 15 minutes. Cover eyes aseptically. Do not apply neutralizing agents. Take victim to an ophthalmologist.

First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Immediately consult a doctor/medical service. Call Poison Information Centre (www.big.be/antigif.htm). Take the container/vomit to the doctor/hospital. Ingestion of large quantities: immediately to hospital.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

Symptoms/injuries after inhalation : Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Nausea. Headache. EXPOSURE TO HIGH CONCENTRATIONS: Possible edema of the upper respiratory tract. Possible inflammation of the respiratory tract. Possible laryngeal spasm/edema. FOLLOWING SYMPTOMS MAY APPEAR LATER: Risk of lung edema. Risk of pneumonia. Respiratory difficulties. Possible esophageal perforation.

Symptoms/injuries after skin contact : Caustic burns/corrosion of the skin.

Symptoms/injuries after eye contact : Irritation of the eye tissue. Permanent eye damage.

Symptoms/injuries after ingestion : Risk of aspiration pneumonia. Nausea. Vomiting. AFTER ABSORPTION OF LARGE QUANTITIES: Blue/grey discoloration of the skin. Blood in stool. Blood in vomit. Possible esophageal perforation. FOLLOWING SYMPTOMS MAY APPEAR LATER: Shock.

Chronic symptoms : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Coughing. Irritation of the respiratory tract. Irritation of the eye tissue. Redness of the eye tissue. Possible inflammation of the respiratory tract. Respiratory difficulties. Affection of the nasal septum.

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4.3. Indication of any immediate medical attention and special treatment needed

Obtain medical assistance.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Adapt extinguishing media to the environment.
- Unsuitable extinguishing media : No unsuitable extinguishing media known.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : DIRECT FIRE HAZARD. Non combustible.
- Explosion hazard : INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".
- Reactivity : On heating: release of toxic/corrosive/combustible gases/vapours (ammonia). On burning: release of toxic and corrosive gases/vapors (nitrous vapors). Concentrated solution violent to explosive reaction with many compounds e.g.: with (some) halogens compounds, with (strong) oxidizers and with (some) acids.

5.3. Advice for firefighters

- Firefighting instructions : Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Gas-tight suit. Corrosion-proof suit. See "Material-Handling" to select protective clothing.
- Emergency procedures : Keep upwind. Mark the danger area. Consider evacuation. Close doors and windows of adjacent premises. No naked flames. Keep containers closed. Wash contaminated clothes.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Stop leak if safe to do so. Ventilate area.

6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

- For containment : Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the liquid spill. Try to reduce evaporation. Dilute toxic gases/vapors with water spray. Take account of toxic/corrosive precipitation water.
- Methods for cleaning up : Damaged/cooled tanks must be emptied. Take up liquid spill into absorbent material, e.g.: sand/earth or powdered limestone. Scoop absorbed substance into closing containers. See "Material-handling" for suitable container materials. Carefully collect the spill/leftovers. Take collected spill to manufacturer/competent authority. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Use corrosion-proof equipment. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Keep away from naked flames/heat. Observe strict hygiene. Keep container tightly closed. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Exhaust gas must be neutralized.
- Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep container closed when not in use. Keep only in the original container in a cool, well ventilated place away from :

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Incompatible products	: Strong acids. silver nitrate. Strong bases.
Incompatible materials	: Sources of ignition. Direct sunlight.
Maximum storage period	: 365 days
Storage temperature	: < 38 °C
Heat-ignition	: KEEP SUBSTANCE AWAY FROM: heat sources.
Prohibitions on mixed storage	: KEEP SUBSTANCE AWAY FROM: oxidizing agents. strong acids. halogens.
Storage area	: Store at ambient temperature. Keep out of direct sunlight. Store in a dark area. Keep container in a well-ventilated place. Keep locked up. Provide for a tub to collect spills. Meet the legal requirements.
Special rules on packaging	: SPECIAL REQUIREMENTS: closing. clean. opaque. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials	: SUITABLE MATERIAL: synthetic material. glass. MATERIAL TO AVOID: aluminum. copper. tin. zinc. nickel. bronze.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ammonium Hydroxide, ACS (1336-21-6)		
ACGIH	ACGIH TWA (mg/m³)	17 mg/m³
ACGIH	ACGIH STEL (mg/m³)	24 mg/m³
OSHA	OSHA PEL (TWA) (mg/m³)	35 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	50 ppm
IDLH	US IDLH (ppm)	300 ppm
NIOSH	NIOSH REL (TWA) (mg/m³)	18 mg/m³
NIOSH	NIOSH REL (TWA) (ppm)	25 ppm
NIOSH	NIOSH REL (STEL) (mg/m³)	27 mg/m³
NIOSH	NIOSH REL (STEL) (ppm)	35 ppm
Water (7732-18-5)		
Not applicable		
Ammonia (7664-41-7)		
ACGIH	ACGIH TWA (mg/m³)	17 mg/m³
ACGIH	ACGIH TWA (ppm)	25 ppm
ACGIH	ACGIH STEL (mg/m³)	24 mg/m³
ACGIH	ACGIH STEL (ppm)	25 ppm
OSHA	OSHA PEL (TWA) (mg/m³)	35 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	50 ppm
IDLH	US IDLH (ppm)	300 ppm
NIOSH	NIOSH REL (TWA) (mg/m³)	18 mg/m³
NIOSH	NIOSH REL (TWA) (ppm)	25 ppm
NIOSH	NIOSH REL (STEL) (mg/m³)	27 mg/m³
NIOSH	NIOSH REL (STEL) (ppm)	35 ppm

8.2. Exposure controls

Appropriate engineering controls	: Provide adequate general and local exhaust ventilation. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Personal protective equipment	: Avoid all unnecessary exposure.
Materials for protective clothing	: GIVE EXCELLENT RESISTANCE: butyl rubber. GIVE GOOD RESISTANCE: neoprene. nitrile rubber. viton. tetrafluoroethylene. GIVE LESS RESISTANCE: PVC. GIVE POOR RESISTANCE: natural rubber. polyethylene. PVA.
Hand protection	: Gloves.

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Eye protection	: Safety glasses.
Skin and body protection	: Head/neck protection. Corrosion-proof clothing.
Respiratory protection	: Gas mask with filter type K. High vapour/gas concentration: self-contained respirator.
Thermal hazard protection	: None necessary.
Other information	: Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Color	: Colorless
Odor	: Irritating/pungent odor
Odor threshold	: 5 - 50 ppm
pH	: 11.7 (3.5 %)
pH solution	: 3.5 %
Melting point	: No data available
Freezing point	: No data available
Boiling point	: 27 °C
Flash point	: Not applicable
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: 0.88 - 0.91
Relative vapor density at 20 °C	: No data available
Specific gravity / density	: 0.89
Molecular mass	: 35.05 g/mol
Solubility	: Water: Complete
Log Pow	: -1.3
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

Minimum ignition energy	: Not applicable
VOC content	: Not applicable
Other properties	: Clear. Physical properties depending on the concentration. Volatile. Substance has basic reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

On heating: release of toxic/corrosive/combustible gases/vapors (ammonia). On burning: release of toxic and corrosive gases/vapors (nitrous vapors). Concentrated solution violent to explosive reaction with many compounds e.g.: with (some) halogens compounds, with (strong) oxidizers and with (some) acids.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reacts vigorously with strong oxidizers and acids.

10.4. Conditions to avoid

High temperature. Incompatible materials. Direct sunlight. Extremely high or low temperatures.

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10.5. Incompatible materials

May react violently with acids. Strong acids. Strong bases.

10.6. Hazardous decomposition products

Gaseous ammonia. fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Inhalation; Skin and eye contact

Acute toxicity : Oral: Harmful if swallowed. Inhalation:vapour: Harmful if inhaled.

Ammonium Hydroxide, ACS (1336-21-6)	
LD50 oral rat	350 mg/kg
ATE US (oral)	350.000 mg/kg body weight
ATE US (vapors)	10.714 mg/l/4h
Water (7732-18-5)	
LD50 oral rat	≥ 90000 mg/kg
ATE US (oral)	90000.000 mg/kg body weight
Ammonia (7664-41-7)	
ATE US (gases)	700.000 ppmV/4h
ATE US (vapors)	3.000 mg/l/4h
ATE US (dust, mist)	0.500 mg/l/4h

Skin corrosion/irritation : Causes severe skin burns and eye damage.

pH: 11.7 (3.5 %)

Serious eye damage/irritation : Causes serious eye damage.

pH: 11.7 (3.5 %)

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/injuries after inhalation : Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Nausea. Headache. EXPOSURE TO HIGH CONCENTRATIONS: Possible edema of the upper respiratory tract. Possible inflammation of the respiratory tract. Possible laryngeal spasm/edema. FOLLOWING SYMPTOMS MAY APPEAR LATER: Risk of lung edema. Risk of pneumonia. Respiratory difficulties. Possible esophageal perforation.

Symptoms/injuries after skin contact : Caustic burns/corrosion of the skin.

Symptoms/injuries after eye contact : Irritation of the eye tissue. Permanent eye damage.

Symptoms/injuries after ingestion : Risk of aspiration pneumonia. Nausea. Vomiting. AFTER ABSORPTION OF LARGE QUANTITIES: Blue/grey discoloration of the skin. Blood in stool. Blood in vomit. Possible esophageal perforation. FOLLOWING SYMPTOMS MAY APPEAR LATER: Shock.

Chronic symptoms : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Coughing. Irritation of the respiratory tract. Irritation of the eye tissue. Redness of the eye tissue. Possible inflammation of the respiratory tract. Respiratory difficulties. Affection of the nasal septum.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Dangerous for the environment.

Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).

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Ecology - water : Water pollutant (surface water). Affects the self-cleaning capacity of surface water. Ground water pollutant. Maximum concentration in drinking water: 0.50 mg/l (ammonium) (Directive 98/83/EC). Highly toxic to fishes. Toxic to invertebrates (Daphnia). May cause eutrophication. Highly toxic to plankton. pH shift. Inhibition of activated sludge.

Ammonium Hydroxide, ACS (1336-21-6)	
LC50 fish 1	0.16 - 1.1 mg/l (LC50; 96 h)
EC50 Daphnia 1	2.08 mg/l (LC50; 48 h)

12.2. Persistence and degradability

Ammonium Hydroxide, ACS (1336-21-6)	
Persistence and degradability	Readily biodegradable in water. Ozonation in water. Biodegradable in the soil. No test data on mobility of the components available. Ozonation in the air.

Water (7732-18-5)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Ammonium Hydroxide, ACS (1336-21-6)	
Log Pow	-1.3
Bioaccumulative potential	Bioaccumulation: not applicable.

Water (7732-18-5)	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle/reuse. Remove for physico-chemical/biological treatment. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery. Use appropriate containment to avoid environmental contamination.

Additional information : LWCA (the Netherlands): KGA category 02. Hazardous waste according to Directive 2008/98/EC.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN2672 Ammonia solutions (relative density between 0.880 and 0.957 at 15 degrees C in water, with more than 10 percent but not more than 35 percent ammonia), 8, III

UN-No.(DOT) : UN2672

Proper Shipping Name (DOT) : Ammonia solutions
relative density between 0.880 and 0.957 at 15 degrees C in water, with more than 10 percent but not more than 35 percent ammonia

Transport hazard class(es) (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136

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Hazard labels (DOT) : 8 - Corrosive



Packing group (DOT) : III - Minor Danger

Dangerous for the environment : Yes

Marine pollutant : Yes



DOT Packaging Non Bulk (49 CFR 173.xxx) : 203

DOT Packaging Bulk (49 CFR 173.xxx) : 241

DOT Special Provisions (49 CFR 172.102) : IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672)

IP8 - Ammonia solutions may be transported in rigid or composite plastic IBCs (31H1, 31H2 and 31HZ1) that have successfully passed, without leakage or permanent deformation, the hydrostatic test specified in 178.814 of this subchapter at a test pressure that is not less than 1.5 times the vapor pressure of the contents at 55 C (131 F)

T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3)

TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling

DOT Packaging Exceptions (49 CFR 173.xxx) : 154

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel

DOT Vessel Stowage Other : 40 - Stow "clear of living quarters", 52 - Stow "separated from" acids, 85 - Under deck stowage must be in mechanically ventilated space

Other information : No supplementary information available.

TDG

No additional information available

Transport by sea

UN-No. (IMDG) : 2672

Class (IMDG) : 8 - Corrosive substances

EmS-No. (1) : F-A

EmS-No. (2) : S-B

Air transport

UN-No. (IATA) : 2672

Class (IATA) : 8 - Corrosives

Packing group (IATA) : III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

Ammonium Hydroxide, ACS (1336-21-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313

RQ (Reportable quantity, section 304 of EPA's List of Lists)	1000 lb
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Water (7732-18-5)

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

Ammonia (7664-41-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313

RQ (Reportable quantity, section 304 of EPA's List of Lists) 1000 lb

SARA Section 302 Threshold Planning Quantity (TPQ) 500 lb

15.2. International regulations

CANADA

Ammonium Hydroxide, ACS (1336-21-6)

WHMIS Classification Class E - Corrosive Material

Water (7732-18-5)

WHMIS Classification Uncontrolled product according to WHMIS classification criteria

Ammonia (7664-41-7)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

Ammonia (7664-41-7)

Listed on the Canadian IDL (Ingredient Disclosure List)

15.3. US State regulations

No additional information available

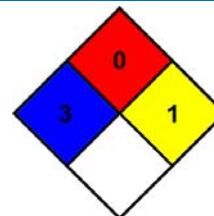
SECTION 16: Other information

Revision date : 12/29/2015
Training advice : Users of breathing apparatus must be trained.
Other information : None.

Full text of H-phrases: see section 16:

H221	Flammable gas
H280	Contains gas under pressure; may explode if heated
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H331	Toxic if inhaled
H332	Harmful if inhaled
H400	Very toxic to aquatic life

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.



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HMIS III Rating

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

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 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.

Personal Protection : H

H - Splash goggles, Gloves, Synthetic apron, Vapor respirator

SDS US LabChem

Information in this SDS is from available published sources and is believed to be accurate. No warranty, express or implied, is made and LabChem Inc assumes no liability resulting from the use of this SDS. The user must determine suitability of this information for his application.