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## Safety Data Sheet Clear Ammonia

### 1. IDENTIFICATION

Synonyms aqua ammonia 5-10% or ammonium hydroxide 5-10%  
 CAS# 1336-21-6  
 Europe EC # 215-647-6  
 Material Use cleaner

**IN AN EMERGENCY CALL: INFOTRAC 1-800-535-5053**

### 2. HAZARD IDENTIFICATION

|                      |                               |                                      |                              |
|----------------------|-------------------------------|--------------------------------------|------------------------------|
| GHS Class (Category) | skin irritant (2)             | eye irritant (2A)                    | aquatic acute (2)            |
| Signal Words         | WARNING                       | WARNING                              |                              |
| Hazard Statements    | causes skin irritation (H315) | causes serious eye irritation (H319) | toxic to aquatic life (H401) |



#### GHS Precautionary Statements for Labeling

P262, P264 Do not get in eyes. Wash thoroughly after handling.  
 P270, P280 Do not eat, drink or smoke when using this product. Wear protective gloves of butyl.  
 P273 Avoid release to the environment.

### 3. COMPOSITION

|   | CAS NUMBER | %      | TLV ppm    | LD <sub>50</sub> (mg/kg) ORAL | LD <sub>50</sub> (mg/kg) SKIN | LC <sub>50</sub> ppm INHALATION |
|---|------------|--------|------------|-------------------------------|-------------------------------|---------------------------------|
| Ammonium Hydroxide                          | 1336-21-6  | 5-10%  | 25         | 350                           | not known                     | >2000                           |
| Tetrasodium Ethylenediaminetetraacetic Acid | 64-02-8    | 0-1%   | not listed | >1780                         | >5000                         | not known                       |
| Water                                       | 7732-18-5  | 90-95% | not toxic  | 90,000                        | not toxic                     | not toxic                       |

### 4. FIRST AID

SKIN: Wash with plenty of water. Remove contaminated clothing and do not reuse until laundered. Seek medical help promptly if there is persistent itching or redness in the affected area.  
 EYES: Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if irritation persists.  
 INHALATION: Remove from contaminated area promptly. **CAUTION: Rescuer must not endanger himself!** If victim's breathing stops, administer artificial respiration and seek medical aid promptly.  
 INGESTION: Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

**NOTE: Corrosive substance: apply first aid immediately!** Inadvertent inhalation of vomited material may seriously damage the lungs. The stomach should only be emptied under medical supervision, after the installation of an airway to protect the lungs.

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## 5. FLAMMABILITY & FIRE-FIGHTING

|                            |  |
|----------------------------|--|
| Flash Point                | cannot burn  |
| Autoignition Temperature   | ammonia gas ignites above 650°C / 1200°F ( <i>after decomposing to H<sub>2</sub> &amp; N<sub>2</sub></i> ) |
| Flammable Limits           | not flammable  |
| Combustion Products        | NO <sub>2</sub> , ammonium nitrate   |
| Firefighting Precautions   | as for substances sustaining fire; firefighters must wear SCBA   |
| Static Charge Accumulation | cannot accumulate a static charge on agitation or pumping  |

## 6. ACCIDENTAL RELEASE MEASURES

|                 |  |
|-----------------|--|
| Leak Precaution | dike to control spillage and prevent environmental contamination   |
| Handling Spill  | ventilate contaminated area; recover free liquid with explosion-proof pumps; absorb residue on an inert sorbent, pick up using non-sparking plastic or aluminium shovel, & store in closed containers for disposal |

## 7. HANDLING & STORAGE

Store in a cool environment. Ensure that containers, empty or full, are tightly sealed if not in use. Wear suitable gloves (see Part 10) before using.

Avoid breathing product vapor. Use with adequate ventilation. If dealing with a spill, arrange good ventilation of premises and wear suitable gloves. Avoid all contact with skin and wash work clothes frequently. An eye bath should be available near the workplace.

## 8. EXPOSURE CONTROL & PERSONAL PROTECTION

|             |  |            |            |
|-------------|--|------------|------------|
| ACGIH TLV   | 25ppm  | ACGIH STEL | 35ppm      |
| OSHA PEL    | 35ppm  | OSHA STEL  | not listed |
| Ventilation | no special mechanical ventilation required, but ensure good natural ventilation                              |            |            |
| Hands       | butyl or neoprene gloves are best – <i>other types also protect; consult supplier to confirm suitability</i> |            |            |
| Eyes        | safety glasses with side shields – <i>always protect the eyes</i>  |            |            |
| Clothing    | no special protective clothing required  |            |            |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

|  |   |
|--|---|
| Odor & Appearance  | clear, colorless, liquid with strong, penetrating odor of ammonia |
| Odor Threshold   | 17ppm   |
| Vapor Pressure   | 75mmHg / 10kPa (20°C / 68°F)                                      |
| Evaporation Rate   | not known – <i>somewhat faster than water</i>                     |
| Vapor Density (air = 1)  | 0.6   |
| Boiling Point  | 74°C / 166°F  |
| Freezing Point   | -9.5°C / 15°F   |
| Specific Gravity   | 0.99 (20/20°C)  |
| Water Solubility   | complete  |
| Log P <sub>o/w</sub> ( <i>Octanol/H<sub>2</sub>O Partition Coefficient</i> ) | 0.23 ( <i>ammonium hydroxide</i> )                                |
| Viscosity  | 1.1centipoise (20°C / 68°F)                                       |
| pH   | 11-12 – <i>strongly alkaline</i>                                  |
| Molecular Weight   | 17grams/mole ( <i>ammonia</i> ), 18grams/mole ( <i>water</i> )    |

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## 10. REACTIVITY

|                           |   |
|---------------------------|---|
| Dangerously Reactive With | acids, strong oxidizers   |
| Also Reactive With        | may corrode aluminum, copper, lead, nickel, silver, tin, zinc and some alloys |
| Chemical Stability        | stable; will not polymerize   |
| Decomposes in Presence of | not known   |
| Decomposition Products    | none apart from Hazardous Combustion Products                                 |
| Mechanical Impact         | not sensitive   |

## 11. TOXICITY INFORMATION

### ***i. ACUTE EXPOSURE***

|                                     |  |
|-------------------------------------|--|
| Skin Contact                        | may irritate if not removed promptly                               |
| Skin Absorption                     | no; toxic effects unlikely by this route                           |
| Eye Contact                         | may be severely irritating, may damage eyes if not rinsed promptly |
| Inhalation                          | may irritate respiratory system                                    |
| Ingestion                           | irritating to mouth, throat & stomach                              |
| Calculated LD <sub>50</sub> (oral)  | 4670mg/kg (rat)  |
| LD <sub>50</sub> (skin)             | not known – <i>no data available</i>                               |
| Calc. LC <sub>50</sub> (inhalation) | 27,000ppm (rat), 28,450 & 32,550ppm (mouse)                        |

### ***ii. CHRONIC EXPOSURE***

|                      |   |
|----------------------|---|
| General              | prolonged or repeated exposure to dilute solutions may cause dermatitis               |
| Sensitizing          | not a sensitizer  |
| Carcinogen/Tumorigen | not known to be a tumorigen or a carcinogen in humans or animals                      |
| Reproductive Effect  | no known effect on humans or animals  |
| Mutagen              | not known to be a mutagen or teratogen in humans or animals                           |
| Synergistic With     | ingestion of 0.01% ammonia may speed the progress of stomach cancer from other causes |

## 12. ECOLOGICAL INFORMATION

|                                    |  |
|------------------------------------|--|
| Bioaccumulation                    | cannot a bioaccumulate   |
| Biodegradation                     | taken up by plant life; decomposed by soil bacteria – rate not known   |
| Abiotic Degradation                | reacts with atmospheric carbon dioxide, neutralising to ammonium carbonate   |
| Mobility in soil, water            | water soluble; moves readily in soil and water   |
| <b>Aquatic Toxicity</b>            |  |
| LC <sub>50</sub> (Fish, 96hr)      | 0.45mg/litre (Oncorhynchus kisutch), 3.4mg/litre (Lepomis macrochirus),<br>1-2mg/litre (Ictalurus punctatus, 168hr)  |
| EC <sub>50</sub> (Crustacea, 48hr) | 0.66mg/litre (Daphnia magna)   |
| EC <sub>50</sub> (Algae)           | no data – <i>at modest concentration, ammonia is a fertilizer which will promote plant growth; at higher concentrations, ammonia raises pH to toxic values</i> |
| EC <sub>50</sub> (Bacteria)        | not known  |

## 13. DISPOSAL CONSIDERATIONS

|                |   |
|----------------|---|
| Waste Disposal | harmless to sewage treatment facility; flush into sewage with water   |
| Containers     | <b>Drums</b> should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use.<br><b>Pails</b> must be vented and thoroughly dried prior to crushing and recycling.<br><b>IBCs</b> (intermediate bulk containers): polyethylene bottle must be pressure tested & recertified at 30 months. Replace at 60 months (5 years). Steel containers must be inspected, pressure tested & recertified every 5 years.<br><b>Warning: never cut, drill, weld or grind on or near this container, even if empty.</b> |

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**14. TRANSPORT INFORMATION****USA 49 CFR & Canada/International TDG**

|                               |   |
|-------------------------------|---|
| Product Identification Number | <b>UN – not regulated for transport</b> |
| Shipping Name                 | <b>not regulated for transport</b>      |
| Classification                | <b>not regulated for transport</b>      |
| <b>Marine Pollution</b>       | <b>not a marine pollutant</b>           |
| <b>ERAP Required</b>          | <b>No</b>                               |

**15. REGULATIONS**

|                      |                     |
|----------------------|---------------------|
| <b>Canada DSL</b>    | <b>on inventory</b> |
| <b>U.S.A. TSCA</b>   | <b>on inventory</b> |
| <b>Europe EINECS</b> | <b>on inventory</b> |

**U.S.A. Regulations:**

**Immediately Dangerous to Life or Health:** 300 ppm /Ammonia/

**Allowable Tolerances:** Residues of ammonium hydroxide are exempted from the requirement of a tolerance when used as a solvent, cosolvent, neutralizer, or solubilizing agent in accordance with good agricultural practices as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops or to raw agricultural commodities after harvest.

**Clean Water Act Requirements:** Designated as a hazardous substance under section 311(b)(2)(A) of the Federal Water Pollution Control Act and further regulated by the Clean Water Act Amendments of 1977 and 1978. These regulations apply to discharges of this substance.

**CERCLA Reportable Quantities:** Persons in charge of vessels or facilities are required to notify the National Response Center (NRC) immediately, when there is a release of this designated hazardous substance, in an amount equal to or greater than its reportable quantity of 1000 lb or 454 kg. The toll free number of the NRC is (800) 424-8802; In the Washington D.C. metropolitan area (202) 426-2675. The rule for determining when notification is required is stated in 40 CFR 302.4 (section IV. D.3.b).

**FIFRA Requirements:** Residues of ammonium hydroxide are exempted from the requirement of a tolerance when used as a solvent, cosolvent, neutralizer, or solubilizing agent in accordance with good agricultural practices as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops or to raw agricultural commodities after harvest.

**FDA Requirements:** Ammonium hydroxide used as a general purpose food additive in animal drugs, feeds, and related products is generally recognized as safe when used in accordance with good manufacturing or feeding practice. Substance added directly to human food affirmed as generally recognized as safe.

**16. OTHER INFORMATION**

**Date of Preparation** August 2014

**Date of Revision** -

Prepared for Tomco-Harwel, by **Peter Bursztyn**

*With data from the Registry of Toxic Effects of Chemical Substances (RTECS), Hazardous Substance Data Base (HSDB), Cheminfo (CCOHS), OSHA, IUCLID Datasheets (European Chemical Substance Information System - ESIS), & others sources (below if used), as required/available*

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