Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 02/28/2016 Reviewed on 02/28/2016

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1 Identification

· **Product Identifier**

· **Trade name: Ammonium Hydroxide**
· **CAS Number:**
1336-21-6
· **EC number:**
215-647-6
· **Index number:**
007-001-01-2
· **Relevant identified uses of the substance or mixture and uses advised against:**
· **Product Description**
PC14 Metal surface treatment products, including galvanic and electroplating products

· **Details of the Supplier of the Safety Data Sheet:**
· **Manufacturer/Supplier:**
NuGeneration Technologies, LLC (dba NuGenTec)
1155 Park Avenue, Emeryville, CA 94608
salesteam@nugentec.com www.nugentec.com
1-888-996-8436 or 1-707-820-4080 for product information
· **Emergency telephone number:**
PERS Emergency Response: Domestic and Canada - 1-800-633-8253, International 1-801-629-0667

2 Hazard(s) Identification

· **Classification of the substance or mixture:**

GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

GHS09 Environment

Aquatic Acute 1 H400 Very toxic to aquatic life.

GHS07

Acute Tox. 4 H302 Harmful if swallowed.

· **Label elements:**
· **GHS label elements**
The substance is classified and labeled according to the Globally Harmonized System (GHS).

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Trade name: Ammonium Hydroxide

· **Hazard pictograms:**

GHS05 GHS07 GHS09

· **Signal word:** Danger

· **Hazard statements:**

H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H400 Very toxic to aquatic life.

· **Precautionary statements:**

P260	Do not breathe dusts or mists.
P280	Wear eye protection / face protection.
P273	Avoid release to the environment.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P303+P361+P353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P321	Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P363	Wash contaminated clothing before reuse.
P301+P330+P331	If swallowed: Rinse mouth. Do NOT induce vomiting.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/ international regulations.

· **Unknown acute toxicity:**

0 % of the mixture consists of component(s) of unknown toxicity.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**

Health = 3
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 3
Fire = 0
Reactivity = 0

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· **Hazard(s) not otherwise classified (HNOC):** None known

3 Composition/Information on Ingredients

· **Chemical characterization: Substance**
· **CAS No. Description**
1336-21-6 Ammonium Hydroxide
· **Identification number(s)**
· **EC number:** 215-647-6
· **Index number:** 007-001-01-2

4 First-Aid Measures

· **Description of first aid measures:**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation occurs, consult a doctor.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed:**
No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed:**
No further relevant information available.

5 Fire-Fighting Measures

· **Extinguishing media:**
· **Suitable extinguishing agents:**
CO_2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture:** No further relevant information available.
· **Advice for firefighters:**
· **Protective equipment:**
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.

6 Accidental Release Measures

· **Personal precautions, protective equipment and emergency procedures:**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.

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· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (i.e. sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
Dispose of the collected material according to regulations.
· **Reference to other sections:**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and Storage

· **Handling**
· **Precautions for safe handling:** No special precautions are necessary if used correctly.
· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities:**
· **Storage**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** Keep receptacle tightly sealed.
· **Specific end use(s):** No further relevant information available.

8 Exposure Controls/Personal Protection

· **Additional information about design of technical systems:** No further data; see section 7.

· **Control parameters:**
· **Components with occupational exposure limits:**
· **Additional information:** The lists that were valid during the creation of this SDS were used as basis.

· **Exposure controls:**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing and wash before reuse.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
· **Breathing equipment:** Not required.
· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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Select glove material based on penetration times, rates of diffusion and degradation.

· ***Material of gloves:***
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

· ***Penetration time of glove material:***
The exact break-through time has to be determined and observed by the manufacturer of the protective gloves.

· ***Eye protection:***

Tightly sealed goggles

9 Physical and Chemical Properties

· ***Information on basic physical and chemical properties***
· ***General Information***
· ***Appearance:***

Form:	*Liquid*
Color:	*Colorless*
· ***Odor:***	*No data available*
· ***Odor threshold:***	*Not determined.*
· ***Change in condition***	
Melting point/Melting range:	*-60 °C (-76 °F)*
Boiling point/Boiling range:	*27 °C (81 °F)*
· ***Flash point:***	*None*
· ***Flammability (solid, gaseous):***	*Not applicable.*
· ***Ignition temperature:***	*Not determined*
· ***Decomposition temperature:***	*Not determined.*
· ***Auto igniting:***	*Not determined.*
· ***Danger of explosion:***	*Product does not present an explosion hazard.*
· ***Explosion limits:***	
Lower:	*16 Vol %*
Upper:	*27 Vol %*
· ***Vapor pressure:***	*Not determined.*
· ***Density @ 20 °C (68 °F):***	*0.89 g/cm³ (7.427 lbs/gal)*
· ***Relative density:***	*Not determined.*
· ***Vapor density:***	*Not determined.*

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Trade name: Ammonium Hydroxide

· **Evaporation rate:** Not determined.

· **Solubility in / Miscibility with:**
Water @ 20 °C (68 °F): 571 g/l

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**
Dynamic: Not determined.
Kinematic: Not determined.
· **Other information:** No further relevant information available.

10 Stability and Reactivity

· **Reactivity:** No further relevant information available.
· **Chemical stability:** Stable under normal conditions.
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
· **Possibility of hazardous reactions:** No dangerous reactions known.
· **Conditions to avoid:** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological Information

· **Information on toxicological effects:**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

Oral	LD50	350 mg/kg (RAT) Remarks: Gastrointestinal: Other changes. Liver: Other changes. Kidney, Ureter, Bladder: Other changes.
Inhalative	LC50/96 hours	8.2 mg/l (Pimephales)

· **Primary irritant effect:**
· **On the skin:**
Corrosive effect on skin and mucous membranes.
Corrosive to skin and mucous membranes.
· **On the eye:**
Corrosive effect.
Causes serious eye irritation.
· **Additional toxicological information:**
Swallowing will lead to a corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Carcinogenic categories:**
· **IARC (International Agency for Research on Cancer):** Substance is not listed.
· **NTP (National Toxicology Program):** Substance is not listed.

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Trade name: Ammonium Hydroxide

· **OSHA-Ca (Occupational Safety & Health Administration):** Substance is not listed.

12 Ecological Information

· **Toxicity:**
· **Aquatic toxicity:**
Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.

EC50	0.66 mg/l (daphnia) 0.66 mg/l (Water flea)

· **Persistence and degradability:** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential:** No further relevant information available.
· **Mobility in soil:** No further relevant information available.
· **Ecotoxical effects:**
· **Remark:** Very toxic for fish
· **Additional ecological information:**
· **General notes:**
Do not allow product to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even small quantities leak into the ground.
Poisonous for fish and plankton in water bodies.
Very toxic for aquatic organisms
· **Results of PBT and vPvB assessment:**
· **PBT:** Not applicable.

· **vPvB:**	
1336-21-6	Ammonium Hydroxide

· **Other adverse effects:** No further relevant information available.

13 Disposal Considerations

· **Waste treatment methods:**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Observe all federal, state and local environmental regulations when disposing of this material.

· **Uncleaned packagings**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport Information

· **UN-Number:**
· **DOT, ADR, IMDG, IATA** UN3266

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Trade name: Ammonium Hydroxide

· **UN proper shipping name:**

· **DOT** Corrosive liquid, basic, inorganic, n.o.s. (Ammonium Hydroxide)

· **ADR** UN3266 Corrosive liquid, basic, inorganic, n.o.s. (Ammonium Hydroxide), ENVIRONMENTALLY HAZARDOUS

· **IMDG** CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (Ammonium Hydroxide), MARINE POLLUTANT

· **IATA** CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (Ammonium Hydroxide)

· **Transport hazard class(es):**

· **DOT**

· **Class:** 8 Corrosive substances

· **Label:** 8

· **ADR**

· **Class:** 8 (C5) Corrosive substances

· **Label:** 8

· **IMDG**

· **Class:** 8 Corrosive substances

· **Label:** 8

· **IATA**

· **Class:** 8 Corrosive substances

· **Label:** 8

· **Packing group:**

· **DOT, ADR, IMDG, IATA** II

· **Environmental hazards:** Environmentally hazardous substance, liquid; Marine Pollutant

· **Special marking (ADR):** Symbol (fish and tree)

· **Special precautions for user:** Warning: Corrosive substances

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Trade name: Ammonium Hydroxide

· **Danger code (Kemler):** 80
· **EMS Number:** F-A,S-B
· **Segregation groups:** Ammonium compounds, alkalis
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** Not applicable.

· **Transport/Additional information:**

· **DOT**
· **Quantity limitations:** On passenger aircraft/rail: 1 L
On cargo aircraft only: 30 L

· **ADR**
· **Excepted quantities (EQ):** Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml

· **IMDG**
· **Limited quantities (LQ):** 1L
· **Excepted quantities (EQ):** Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml
· **UN "Model Regulation":** UN 3266 CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (AMMONIUM HYDROXIDE), 8, II, ENVIRONMENTALLY HAZARDOUS

15 Regulatory Information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture:**
· **SARA (Superfund Amendments and Reauthorization):**
· **Section 355 (extremely hazardous substances):** Substance is not listed.
· **Section 313 (Specific toxic chemical listings):** Substance is listed.
· **TSCA (Toxic Substances Control Act):** Substance is listed.
· **California Proposition 65:**
· **Chemicals known to cause cancer:** Substance is not listed.
· **Chemicals known to cause reproductive toxicity for females:** Substance is not listed.
· **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.
· **Chemicals known to cause developmental toxicity:** Substance is not listed.
· **New Jersey Right-to-Know List:** Substance is not listed.
· **New Jersey Special Hazardous Substance List:** Substance is not listed.
· **Pennsylvania Special Hazardous Substance List:** Substance is not listed.

· **Carcinogenic categories:**
· **EPA (Environmental Protection Agency):** Substance is not listed.
· **TLV (Threshold Limit Value established by ACGIH):** Substance is not listed.
· **NIOSH-Ca (National Institute for Occupational Safety and Health):** Substance is not listed.
· **GHS label elements**
The substance is classified and labeled according to the Globally Harmonized System (GHS).

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Trade name: Ammonium Hydroxide

· **Hazard pictograms:**

GHS05 GHS07 GHS09

· **Signal word:** Danger
· **Hazard statements:**
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H400 Very toxic to aquatic life.
· **Precautionary statements:**

P260	Do not breathe dusts or mists.
P280	Wear eye protection / face protection.
P273	Avoid release to the environment.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P303+P361+P353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P321	Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P363	Wash contaminated clothing before reuse.
P301+P330+P331	If swallowed: Rinse mouth. Do NOT induce vomiting.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/ international regulations.

· **National regulations:** Non-Regulated Material
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other Information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

· **Date of preparation / last revision:** 02/28/2016 / 1
· **Abbreviations and acronyms:**
ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association

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ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Tox. 4: Acute toxicity, Hazard Category 4
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1

· *** Data compared to the previous version altered.**

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