

# SAFETY DATA SHEET

## 1 PRODUCT AND COMPANY IDENTIFICATION

**Product name:** Ammonium Hydroxide 29%

**Product No.:** 9731-14, 9731-03, 9731-23

**Manufacturer:**

Avantor Performance Materials, Inc.  
3477 Corporate Parkway, Suite 200  
Center Valley, PA 18034

**Telephone:**

Customer Service: 855-282-6867

**Contact Person:**

**Emergency telephone:**

24 Hour Emergency: 908-859-2151  
Chemtrec: 800-424-9300

## 2 HAZARDS IDENTIFICATION

**Emergency Overview:**

**Appearance:**

**Color:** Colorless  
**Form :** Liquid  
**Odor:** Odorless

**Signal words** DANGER!

**Potential Health Effects:**

**General** Corrosive Causes severe skin and eye burns. Harmful if swallowed. Causes digestive tract burns.

**Inhalation:** Harmful if inhaled.

**Skin:** Causes severe skin burns.

**Eye:** May cause chemical eye burns.

**Ingestion:** Harmful if swallowed. May cause burns of the gastrointestinal tract if swallowed.

**Routes of Exposure:** Skin and/or eye contact., Inhalation, Ingestion

**OSHA Regulatory Status** This product is hazardous according to OSHA 29CFR 1910.1200.

**Environment:** This material is a strongly alkaline aqueous solution, and this property may cause adverse environmental effects. Expected to be very toxic to aquatic organisms. May cause long-term adverse effects in the environment.

### 3 COMPOSITION / INFORMATION ON INGREDIENTS

**General information:**

**Hazardous Component(s):**

Chemical name	CAS-No.	Concentration
AMMONIA	7664-41-7	15 - 35%
WATER	7732-18-5	65 - 85%

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

### 4 FIRST AID MEASURES

- General:** Get medical advice/attention if you feel unwell. If medical advice is needed, have product container or label at hand.
- Inhalation:** Move to fresh air. Call a physician or poison control center immediately. Apply artificial respiration if victim is not breathing. If breathing is difficult, give oxygen.
- Skin contact:** Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.
- Eye contact:** Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately.
- Ingestion:** Do NOT induce vomiting. Call a physician or poison control center immediately.
- Notes to the physician:**
- Treatment:** Symptoms may be delayed.

### 5 FIRE-FIGHTING MEASURES

- Extinguishing media:** The product is non-combustible. Use fire-extinguishing media appropriate for surrounding materials.
- Unsuitable extinguishing media:** None known.
- Unusual Fire & Explosion Hazards:** Exposure to fire can generate toxic fumes. In fire or if heated, pressure increase may rupture container.
- Special fire fighting procedures:** Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.
- Protective Measures:** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

### 6 ACCIDENTAL RELEASE MEASURES

- Personal precautions:** See Section 8 of the MSDS for Personal Protective Equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away. Keep upwind. Ventilate closed spaces before entering them.

- Environmental precautions:** Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.
- Spill Cleanup Methods:** Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Dike far ahead of larger spill for later recovery and disposal.
- Notification Procedures:** Inform authorities if large amounts are involved.

## 7 HANDLING AND STORAGE

- Handling:** Wash hands thoroughly after handling. Do not get in eyes, on skin, on clothing. See Section 8 of the MSDS for Personal Protective Equipment. Do not breathe mist or vapor. Use only with adequate ventilation.
- Storage:** Keep container tightly closed. Store in a well-ventilated place. Do not store in metal containers.

## 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Exposure limits

Chemical name	Type	Exposure Limit values	Source
AMMONIA	TWA	25 ppm	US. ACGIH Threshold Limit Values (2011)
	STEL	35 ppm	US. ACGIH Threshold Limit Values (2011)
AMMONIA	PEL	50 ppm    35 mg/m <sup>3</sup>	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	STEL	35 ppm    27 mg/m <sup>3</sup>	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

- Protective Measures:** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.
- Respiratory Protection:** In case of inadequate ventilation use suitable respirator.
- Eye protection:** Wear safety glasses with side shields (or goggles) and a face shield.
- Skin and Body Protection:** Wear suitable protective clothing and gloves.
- Hygiene measures:** Do not get in eyes. Observe good industrial hygiene practices. Wash contaminated clothing before reuse. Do not get this material in contact with skin. Wash hands before breaks and immediately after handling the product. Provide eyewash station and safety shower.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

<b>Physical State:</b>	Liquid
<b>Form:</b>	Liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	Odorless
<b>Odor Threshold:</b>	No data available.
<b>pH:</b>	13.8
<b>Freezing point:</b>	-74.4 °C
<b>Boiling Point:</b>	27.2 °C
<b>Flash Point:</b>	Not applicable
<b>Evaporation Rate:</b>	No data available.
<b>Flammability (solid, gas):</b>	No data available.
<b>Flammability Limit - Upper (%)-:</b>	No data available.
<b>Flammability Limit - Lower (%)-:</b>	No data available.
<b>Vapor pressure:</b>	No data available.
<b>Vapor density (air=1):</b>	No data available.
<b>Relative density:</b>	0.9
<b>Solubility(ies)</b>	
<b>Solubility in Water:</b>	Soluble
<b>Solubility (other):</b>	No data available.
<b>Partition coefficient (n-octanol/water):</b>	No data available.
<b>Autoignition Temperature:</b>	No data available.
<b>Decomposition Temperature:</b>	No data available.
<b>Viscosity:</b>	No data available.
<b>Explosive properties:</b>	No data available.
<b>Oxidizing properties:</b>	No data available.

## 10 STABILITY AND REACTIVITY

<b>Stability:</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions:</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid:</b>	Excessive heat.
<b>Incompatible materials:</b>	Strong oxidizing agents. Acids. Metals. Halogens.
<b>Hazardous decomposition products:</b>	Nitrogen Oxides

## 11 TOXICOLOGICAL INFORMATION

<b>Product:</b>	
<b>Acute Toxicity (Oral):</b>	LD 50 (Rat): 350 mg/kg
<b>Inhalation:</b>	Severely irritating to respiratory system.
<b>Ingestion:</b>	Harmful if swallowed.
<b>Skin corrosion/irritation:</b>	Causes severe skin burns.

<b>Serious eye damage/eye irritation:</b>	Causes serious eye damage.
<b>Respiratory sensitizer/Skin sensitizer:</b>	Not a skin sensitizer.
<b>Carcinogenicity:</b>	This substance has no evidence of carcinogenic properties.
<b>Mutagenesis:</b>	No mutagenic components identified
<b>Reproductive toxicity:</b>	No components toxic to reproduction
<b>Other effects:</b>	None known.

## 12 ECOLOGICAL INFORMATION

<b>General information:</b>	Not Applicable
<b>Ecotoxicity:</b>	Expected to be very toxic to aquatic organisms.
<b>Product:</b>	
<b>Acute toxicity(Fish):</b>	LC 50 (Western mosquitofish ( <i>Gambusia affinis</i> ), 96 h): 15 mg/l
<b>Chronic Toxicity(Fish):</b>	No data available.
<b>Acute toxicity(Aquatic invertebrates):</b>	LC 50 (Water flea ( <i>Daphnia magna</i> ), 48 h): 0.66 mg/l
<b>Chronic Toxicity(Aquatic invertebrates):</b>	No data available.
<b>Acute toxicity(Aquatic plants):</b>	No data available.
<b>Persistence and degradability:</b>	Expected to be readily biodegradable.
<b>Bioaccumulative potential:</b>	No data available on bioaccumulation.
<b>Mobility:</b>	The product is water soluble and may spread in water systems.

## 13 DISPOSAL CONSIDERATIONS

<b>Disposal methods:</b>	Discharge, treatment, or disposal may be subject to national, state, or local laws.
<b>Uncleaned Empty Packaging:</b>	Since emptied containers retain product residue, follow label warnings even after container is emptied.

## 14 TRANSPORT INFORMATION

### DOT

UN number: UN 2672  
 Proper Shipping Name: Ammonia solutions  
 Transport hazard class(es): 8  
 Subsidiary risk label: –  
 Packing group: III  
 Label(s): 8  
 Marine Pollutant: Not Regulated

### IMDG - International Maritime Dangerous Goods Code

UN number: UN 2672  
 UN proper shipping name: AMMONIA SOLUTION  
 Transport hazard class(es): 8  
 Subsidiary risk label: –  
 Packing group: III  
 Label(s): 8  
 Marine Pollutant: Not Regulated  
 EmS No.: F-A; S-B

### IATA

UN number: UN 2672  
 Proper Shipping Name: Ammonia solution  
 Transport hazard class(es): 8  
 Subsidiary risk label: –  
 Packing group: III  
 Label(s): 8

## 15 REGULATORY INFORMATION

### Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EU EINECS List:	On or in compliance with the inventory
EU ELINCS List:	Not in compliance with the inventory.
Japan (ENCS) List:	On or in compliance with the inventory
EU No Longer Polymers List:	Not in compliance with the inventory.
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Switzerland Consolidated Inventory:	Not in compliance with the inventory.
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

### US Regulations

- **CERCLA Hazardous Substance List (40 CFR 302.4):**  
 AMMONIA Reportable quantity: 100 lbs.
- **Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3):**  
 AMMONIA Reportable quantity: 100 lbs.

• **Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):**

AMMONIA Threshold quantity: 10000 lbs  
AMMONIA Threshold quantity: 20000 lbs

**SARA Title III**

• **Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):**

Chemical name	RQ	Threshold Planning Quantity
AMMONIA	100 lbs.	500 lbs.

• **Section 311/312 (40 CFR 370):**

Acute (Immediate)  Chronic (Delayed)  Fire  Reactive  Pressure Generating

• **Section 313 Toxic Release Inventory (40 CFR 372):**

Chemical name	CAS-No.	Reporting threshold for other users	Reporting threshold for manufacturing and processing
AMMONIA	7664-41-7	10000 lbs	25000 lbs.

**State Regulations**

• **California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):**

No ingredient regulated by CA Prop 65 present.

• **Massachusetts Right-To-Know List:**

AMMONIA Listed

• **New Jersey Right-To-Know List:**

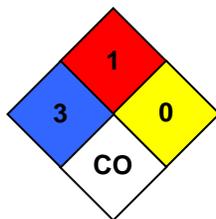
AMMONIA Listed  
WATER Listed  
AMMONIUM HYDROXIDE Listed

• **Pennsylvania Right-To-Know List:**

AMMONIA Listed  
WATER Listed

**16 OTHER INFORMATION**

**NFPA Hazard ID**



Flammability  
 Health  
 Reactivity  
 Special hazard.

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe  
COR: Corrosive

**Revision Information:**

**Issue date:** 10-18-2013

**SDS No.:**

**Disclaimer:**

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