



**Advanced Calibration Designs**  
**Ammonium Hydroxide Solution**  
(Revised September 03, 2010)

**Material Safety Data Sheet**  
Emergency Phone: (800) 424-9300  
International Emergency Phone: 703-527-3887

**Section 1 - Identification**

Product Code: 525-0001-01  
Product Name: QCV Ammonia Solution  
Used in Part Number: 525-0001-12  
Synonyms: Ammonium Hydroxide Solution  
Chemical Family: Inorganic base in water  
CAS #: 7664-38-2 in 7732-18-5  
Molecular Formula:  $\text{NH}_4\text{OH}$

**Section 2 - Ingredients**

Chemical	CAS #	%	OSHA/PEL	ACGIH TLV
Ammonia	7664-41-7	0.1 < x < 10	50 ppm	Not established
Water	7732-18-5	Remainder	None	None

**Section 3 - Physical Data**

Boiling Point: 38°C (100°F).  
% Volatiles: N/A  
Solubility in Water: Miscible.  
Specific Gravity ( $\text{H}_2\text{O} = 1$ ): .89.  
Freezing / Melting Point: -77°C (-106°F).  
Evaporation Rate  
(butyl acetate = 1): N/A  
Vapor Density (air = 1): Not determined  
Vapor Pressure: Not determined  
Appearance and Odor: Colorless solution with an intense, pungent odor.  
Other: N/A



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### Section 4 - Fire and Explosion Hazard Data

Flash Point (°F):	N/A
Autoignition Temperature:	N/A
Extinguishing Media:	Noncombustible. Use extinguishing agent appropriate to surrounding fire. For safety reasons do not use Halogenated extinguisher.
Special Fire Fighting Procedures:	Wear self-contained breathing apparatus and protective clothing to prevent inhalation and contact with skin and eyes.

### Section 5 - Health Data

OSHA (PEL):	NH <sub>3</sub>	50 ppm
	H <sub>2</sub> O	None
ACGIH (TLV):	NH <sub>3</sub>	Not determined
	H <sub>2</sub> O	None

#### ANIMAL TOXICITY

LDLO unr-man:	N/A
LD50: Oral - rat	N/A
Skin - rabbit	N/A
Carcinogenicity:	No

#### EFFECTS OF EXPOSURE

##### Acute Effects

Ingestion:	Harmful. Material may cause nausea and vomiting after ingestion. If swallowed in concentrated amounts, swelling of the lips, mouth, and larynx, and oral or esophageal burns may occur.
Skin Contact:	May cause irritation. In concentrated amounts may cause liquifaction necrosis and burns.
Eye Contact:	Corrosive, redness, pain, blurred vision and severe deep burns in concentrated amounts.
Inhalation:	Bronchospasm, laryngitis, trachetis, wheezing, dyspnea, chest pain, laryngeal stridor may be noted. Mucosal burns to the tracheobronchial tree, pulmonary edema, and associate hypoxemia frequently occur following exposure to concentrated, industrial strength ammonia.
Medical Conditions, if any, aggravated by the chemical:	None identified.
Other health hazards:	N/A.
Most likely routes of entry:	Ingestion, inhalation, eye contact, skin contact.



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### Section 5 - Health Data (continued)

#### Chronic Effects

Ingestion: Material can cause tissue damage to mucous membranes, gastro-intestinal and respiratory mucosa.  
Skin Contact: May cause severe irritation or tissue damage.  
Eye Contact: May cause severe irritation or tissue damage.  
Inhalation: May cause severe irritation or tissue damage.  
Other: N/A

#### **EMERGENCY AND FIRST AID PROCEDURES**

Ingestion: Seek immediate medical attention. Do NOT induce vomiting. If conscious, give water, milk, or lemon juice.  
Skin Contact: Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.  
Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes. Seek medical attention.  
Inhalation: Remove individual to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek immediate medical attention.

### Section 6 - Reactivity

Incompatibility: Halogens, oxidizing agents, acids, alkali and alkaline earth metals, and reactive organic and inorganic chemicals.  
Hazardous Decomposition Products: Decomposition will not occur if used and stored according to specifications. When heated to decomposition can emit nitrogen oxides and ammonia.  
Stability: Stable  
Hazardous Polymerization: Will not occur.  
Other: None

### Section 7 - Environmental Information

Spill and Leak Procedures: Avoid breathing vapors or contact with eyes, skin, or clothing. Wear self-contained breathing apparatus and full protective clothing. Ensure adequate ventilation. Do not allow material to be released to the environment without proper governmental permits. Absorb liquid with appropriate material (sand, kiatomite, acid binders, universal binders, sawdust.)  
Waste Disposal: Dispose in accordance with all applicable federal, state, and local environmental regulations.



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### Section 8 - Protection Information

Ventilation Requirement: Use general or local exhaust ventilation to meet TLV requirements.  
Respiratory Protection: Use suitable respirator in accordance with exposure of concern.  
Protective Gloves: Rubber gloves.  
Eye/Face Protection: Safety goggles and appropriate protective clothing are recommended.

### Section 9 - Special Precautions

Handling and Storage: Keep container tightly closed. Store in cool dry place. Do not store together with acids.  
Other Precautions: None

### Section 10 - Transportation Information - U.S. Department of Transportation

Per 49CFR: 172.101 with exception 173.4.  
Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s., ammonium hydroxide, 5.0N Standardized solution.  
Hazardous Class: 9.  
Packaging Group: III  
UN#: 3082  
Reportable Quantity: 10,000 lbs.

### Section 11 - Comments

This data is offered in good faith as typical values and not as a product specification. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.