

## Comparison of Ammonia Sources

	Ammonia Anhydrous	Ammonium Hydroxide, 19%	Ammonium Sulfate, 40%
Formula	NH <sub>3</sub>	NH <sub>4</sub> OH	(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
Form	Gas	Liquid	Liquid
% Active	100.0	40.0	40.0
% NH <sub>3</sub>	100.0	19.0	10.3
% N	82.3	15.6	8.5
Toxic Vapors	Yes	Yes	No
SARA Title III	Yes	Yes	No
CERCLA Reportable	Yes	Yes	No
DOT Regulated	Yes, UN 1005	Yes, UN 2672	No
Reportable Quantity	100 lbs	1,000 lbs	None
Safety	Toxic, Volatile	Toxic, Volatile	Non-toxic, non-volatile
Odor	Ammonia Odor	Ammonia Odor	No Ammonia Odor
Stability	Stable under pressure	Unstable, scrubbed	Stable indefinitely
N Equivalent -lbs*	1.00	5.26 (.68 gal)	9.63 (.95 gal)
N Equivalent -gal**	NA	1.00	1.40
Density (lbs/gal)	NA	7.75	10.1

\* lbs required to provide same Nitrogen equivalent as 1.0 lb of anhydrous ammonia

\*\* gallons required to provide same Nitrogen equivalent as 1.0 gal of 19% aqueous ammonia

# AS 4000

Ammonium Sulfate Solution

# **DUMONT**

- ANSI/NSF Standard 60 Certified
- Reduces disinfection byproducts

- Non-toxic, non-volatile, odor free
- Stable strength indefinitely

## Usage

AS4000 is a 40% aqueous solution of ammonium sulfate used as a source of ammonia in the formation of chloramines to disinfect treated water. Proper dosage reduces disinfection byproducts including THM's.

## Description

Appearance	Clear, Pale Yellow Liquid
% (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	40%
% NH <sub>3</sub>	10.3%
% N	8.5%
Specific Gravity	1.20 - 1.23
pH	4.0 - 7.0

## Application

This product should be applied using a metering pump, fed neat from the storage vessel without dilution. Dosage is dependent upon the free chlorine residual (not dosage). The accepted ratio of Cl<sub>2</sub>:N is 4:1 for formation of monochloramines which provides the most effective disinfection of drinking water. For optimal results the water pH should be maintained between 7.0 – 8.5.

## Handling

AS4000 is a non-regulated, non-hazardous product. Avoid contact with skin or eyes and wash affected areas with water if contact is made. Refer to the MSDS for more detailed instructions.

## Shipping

AS4000 is packaged in drums and totes. It is also available in bulk tanker loads and in smaller quantities through our Mini-Bulk service.

## Customer Service

Dumont can provide a complete chemical feed program to meet your water quality needs including equipment and set up. We deliver all chemicals used for drinking water systems and most are available through our Mini-Bulk service. For complete details on all of our products and services, please contact:

# **DUMONT**

381 S. Central Ave. Oviedo, FL 32765  
Ph: 800-330-1369 Fax: 800-524-9315

[www.dumontchemicals.com](http://www.dumontchemicals.com)

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# Material Safety Data Sheet

Provided by:  
The Dumont Company  
381 S. Central Ave.  
Oviedo, FL 32765  
Phone (800) 330 1369/Fax (800) 524 9315

## I. Chemical Product Identification

**Product Name:** AS 4000 **CAS Number** N/A  
**Synonyms:** Ammonium Sulfate Solution  
**Chemical Name:** Ammonium Sulfate Solution  
**Emergency Phone:** 800 330 1369 **Date of Issue** 8/30/2006

## II. Composition

Components	Percent	TLV-TWA
Inorganic Salt Solution	20.0 - 40.0	N/A
Water	60.0 - 80.0	N/A

## III. Health Hazards

**Eye contact:** Possible irritation if exposed due to individual sensitivity.  
**Skin Contact:** Possible irritation of exposed tissue due to individual sensitivity.  
**Inhalation:** May cause irritation to nose, throat and respiratory tract.  
**Ingestion:** May cause sore throat, abdominal pain, vomiting or diarrhea.  
**Chronic Health Effects:** No known chronic health effects.

## IV. First Aid Procedures

**Eye Contact:** Immediately flush eyes with water for at least 20 minutes. If irritation persists, consult a physician.  
**Skin Contact:** Immediately flush skin with water for at least 20 minutes. Avoid spreading material on unaffected skin.  
**Inhalation:** Remove to fresh air. Get medical attention for irritation or discomfort.  
**Ingestion:** If conscious, give plenty of water and induce vomiting. Get medical attention.

## V. Personal Protection Information

<b>Respiratory Protection:</b>	Wear a mask if aerosols are present.
<b>Ventilation:</b>	Area should be well ventilated
<b>Skin Protection:</b>	Wear gloves and other protection if skin is sensitive or a reaction occurs.
<b>Eye/Face Protection:</b>	Wear safety glasses, goggles or face shield. Contact lenses should not be worn.
<b>Other Protection:</b>	Eye bath and safety shower
<b>Work Practices:</b>	Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing and wash thoroughly before reuse. Shower after work using plenty of soap and water.

## VI. Fire and Explosion Hazard

<b>Flash Point:</b>	Non-flammable
<b>Extinguishing Media:</b>	Use water spray or water flooding
<b>Special Fire Fighting Procedures:</b>	Protective clothing and a self-contained breathing apparatus should be worn by fire fighting personnel.
<b>Unusual Fire and Explosion Hazards:</b>	Dried material decomposes @ 455 F with emission of ammonia and sulfur trioxide. Explosion may occur if mixed with strong oxidizer.

## VII. Measures for Accidental Release

<b>In case of release or spill:</b>	Contain as much spilled material as possible. Collect material and store in a dry area. Follow Federal, State and Local regulations for disposal.
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## VIII. Handling and Storage

Keep container tightly closed when not in use. Store in a cool, dry, well-ventilated area, away from heat and incompatible materials esp any strong oxidizers. Protect containers from physical damage.

## IX. Physical Data

<b>Boiling Point (°C):</b>	>100C	<b>Vapor Pressure (mmHG):</b>	N/A
<b>Solubility (H<sub>2</sub>O):</b>	Infinite	<b>Vapor Density (Air=1):</b>	N/A
<b>pH Neat:</b>	4.0—7.0	<b>Specific Gravity (H<sub>2</sub>O=1):</b>	1.10 - 1.30
<b>Appearance/Odor:</b>	Clear, odorless liquid	<b>Evaporation Rate:</b>	N/A

## X. Reactivity

<b>Stability:</b>	Stable at room temperature.
<b>Incompatibility:</b>	Ammonium nitrate; Potassium chlorate, nitrite or alloy; strong oxidizers
<b>Decomposition/Byproducts:</b>	Ammonia and sulfur trioxide at >455F.
<b>Hazardous Polymerization:</b>	Will not occur

**XI. Waste Disposal Method**

Not a RCRA hazardous waste. Dispose of according to all Federal, State and local regulations.

**XII. Transport Information**

**USA DOT Hazard Class:** Not regulated

**HMIS Hazard Rating**

<b>Health: 1</b>		<b>Fire: 0</b>		<b>Reactivity: 0</b>
0 - Least	1 - Slight	2 - Moderate	3 - High	4 - Extreme

**XIII. Other Information**

**SARA Title III/CERCLA:** Not regulated

**Maximum Use Level for Potable Water (Standard 60):** 60.0

**TSCA (Toxic Substance Control Act), 40 CFR 710:** N/A

Sources of the raw materials used in this mixture assure that all chemical ingredients present are in compliance with Section 8(b) Chemical Substance Inventory, or are otherwise in compliance with TSCA.

**Disclaimer of Warranty**

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### Drinking Water Treatment Chemicals

[See General Information for Drinking Water Treatment Chemicals](#)

**DUMONT CO INC**  
381 S CENTRAL AVE  
OVIEDO, FL 32765 USA

MH46303

#### ANSI/NSF STANDARD 60

Plant at: Plant 1 USA

Trade Dsg	Category	Max Use Level (mg/L)
<b>Ammonium Sulfate</b>		
AS 1000	Disinfection and Oxidation	25
AS 4000	Disinfection and Oxidation	60
<b>Blended Phosphates</b>		
PT1025	Corrosion and Scale Control	37.0
PT1034	Corrosion and Scale Control	28.0
PT1224	Corrosion and Scale Control	38.0
PT1233	Corrosion and Scale Control	29.0
PT1524	Corrosion and Scale Control	38.0
PT1532	Corrosion and Scale Control	29.0
PT2024	Corrosion and Scale Control	37.0
PT2032	Corrosion and Scale Control	28.0
PT2523	Corrosion and Scale Control	38.0
PT2536	Corrosion and Scale Control	32.0
PT3024	Corrosion and Scale Control	36.0
PT3030	Corrosion and Scale Control	40.0
PT3032	Corrosion and Scale Control	27.0
PT3034	Corrosion and Scale Control	28.0
PT4030	Corrosion and Scale Control	48.0
PT4036	Corrosion and Scale Control	32.0
PT5024	Corrosion and Scale Control	32.0
PT5027	Corrosion and Scale Control	28.0
PT5032	Corrosion and Scale Control	25.0
PT5036	Corrosion and Scale Control	22.0
PT6030	Corrosion and Scale Control	52.7

PT6036	Corrosion and Scale Control	40.0
PT7035	Corrosion and Scale Control	23.0
PT7036	Corrosion and Scale Control	35.0
PT7528	Corrosion and Scale Control	47.0
PT7529	Corrosion and Scale Control	24.0
PT7541	Corrosion and Scale Control	18.0
PT8028	Corrosion and Scale Control	25.0
PT8031	Corrosion and Scale Control	56.3
PT8037	Corrosion and Scale Control	19.0
PT8529	Corrosion and Scale Control	23.0
PT8539	Corrosion and Scale Control	18.0
PT9030	Corrosion and Scale Control	22.0
PT9031	Corrosion and Scale Control	21.0
PT9040	Corrosion and Scale Control	17.0
PT9041	Corrosion and Scale Control	16.0
<b>Dry OrthoPhosphates</b>		
OT5757C	Corrosion and Scale Control	16.0
OT6565C	Corrosion and Scale Control	15.0
<b>Dry Polyphosphate</b>		
PT5757C	Corrosion and Scale Control	17.4
PT7171C	Corrosion and Scale Control	14.0
PT7777C	Corrosion and Scale Control	12.9
PT8585C	Corrosion and Scale Control	12.0
PT8989C	Corrosion and Scale Control	10.7
<b>Fluosilicic Acid</b>		
HFS 2300	Fluoridation	5.2
HFS 4000	Fluoridation	3
<b>Miscellaneous Blended Phosphates</b>		
OT1414T	Corrosion and Scale Control	55.0
OT2525	Corrosion and Scale Control	20.0
OT2727T	Corrosion and Scale Control	30
OT3535	Corrosion and Scale Control	20.0
OT3737	Corrosion and Scale Control	20.0
PT1717	Corrosion and Scale Control	65.6
PT2727	Corrosion and Scale Control	40.0
PT3029T	Corrosion and Scale Control	30
PT3434	Corrosion and Scale Control	32.4
PT3535	Corrosion and Scale Control	28.9
PT3737	Corrosion and Scale Control	25.4
PT5033	Corrosion and Scale Control	30.0
PT7030	Corrosion and Scale Control	30

PT7032	Corrosion and Scale Control	30
PT7032T	Corrosion and Scale Control	30
PT8032	Corrosion and Scale Control	30
<b>Phosphoric Acid</b>		
OT3636	Corrosion and Scale Control	20.0
OT7272	Corrosion and Scale Control	12.0
OT8282	Corrosion and Scale Control	12.0
<b>Sodium Hydroxide</b>		
SH 2500	pH Adjustment	200
SH 5000	pH Adjustment	100
<b>Zinc Orthophosphate</b>		
ZO 0216*	Corrosion and Scale Control	35.0
ZO 0333*	Corrosion and Scale Control	24.0
ZO 0440*	Corrosion and Scale Control	20.0
ZO 0535*	Corrosion and Scale Control	25.0
ZO 0550*	Corrosion and Scale Control	15.0
ZO 0630*	Corrosion and Scale Control	25.0
ZO 0636*	Corrosion and Scale Control	25.0
ZO 0721*	Corrosion and Scale Control	25.0
ZO 0728*	Corrosion and Scale Control	25.0
ZO 0808*	Corrosion and Scale Control	25.0
ZO 0824*	Corrosion and Scale Control	24.9
ZO 0848*	Corrosion and Scale Control	20.0
ZO 0918*	Corrosion and Scale Control	22.2
ZO 0945*	Corrosion and Scale Control	20.0
ZO 1010*	Corrosion and Scale Control	20.0
ZO 106h*	Corrosion and Scale Control	20.0
ZO 1144*	Corrosion and Scale Control	18.2
ZO 115h*	Corrosion and Scale Control	18.2
ZO 1200*	Corrosion and Scale Control	15.0
ZO 1201*	Corrosion and Scale Control	16.7
ZO 1236*	Corrosion and Scale Control	16.7
ZO 1339*	Corrosion and Scale Control	15.4
ZO 151h*	Corrosion and Scale Control	12.0
ZO 1632*	Corrosion and Scale Control	12.5
ZO 2121*	Corrosion and Scale Control	9.5
ZO 2401*	Corrosion and Scale Control	8.3
ZO 2511*	Corrosion and Scale Control	10.5
ZO 2709*	Corrosion and Scale Control	7.4
ZO 2901*	Corrosion and Scale Control	6.8
ZO 3000*	Corrosion and Scale Control	6.0

ZO 3636C*	Corrosion and Scale Control	5.0
ZO 3h35*	Corrosion and Scale Control	25.0
ZO 4h45*	Corrosion and Scale Control	18.0
ZO 7h37*	Corrosion and Scale Control	20.0
<b>Zinc Sulfate</b>		
ZO1212	Corrosion and Scale Control	16.0

\* - Based upon an evaluation of health effects data, the level of zinc in the finished drinking water shall not exceed 2 mg/L.

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