



Safety Data Sheet
According to the (US) Hazard Communication Standard (29 CFR 1910.1200)

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name Buffer Solution for Nitrates
NCL Catalog Number N-27B
Product Description Laboratory chemical, APHA for Nitrate, for use with Nitrate ISE.
Supplier NCL of Wisconsin, Inc. PO Box 8, Birnamwood, WI 54414
Telephone: 1-800-648-7836 Fax: 715-449-2454
Email: nclabs@nclabs.com Emergency Contact: 1-800-424-9300 (Chemtrec)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

GHS Classification

Eye Irritation Category 2A
Reproductive Toxicity Category 2
Aquatic Acute Category 1
Aquatic Chronic Category 1



Signal Word Warning

Hazard Statements

H319 Causes serious eye irritation.
H361 Suspected of damaging fertility or the unborn child.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P264 Wash exposed skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P391 Collect spillage.
P405 Store locked up.
P501 Dispose of contents/container to comply with local, state and federal regulations.

Other Hazards Not Contributing to the Classification

None under normal conditions.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Identity Not applicable

Common Name Not applicable

Mixture

Name	CAS #	Approximate %
Water	7732-18-5	>95
Aluminum Sulfate	10043-01-3	<2
Silver Sulfate	10294-26-5	<1
Boric Acid	10043-35-3	<1
Sulfamic Acid	5329-14-6	<1

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General First Aid Measures	Never give anything by mouth to an unconscious person. Seek medical advice if you feel unwell.
If Inhaled	Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician if you feel unwell.
In Case of Skin Contact	Remove all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician if you feel unwell.
In Case of Eye Contact	Rinse carefully with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician if you feel unwell.
If Swallowed	Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor if you feel unwell.

Most Important Symptoms/Effects Acute and Delayed

No additional information.

Indication of Immediate Medical Attention and Special Treatment Needed

Seek medical attention if exposed.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media	Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable Extinguishing Media	Do not use a heavy water stream.

Special Hazards Arising from the Chemical

No additional information.

Special Protective Actions for Fire-Fighters

Wear self-contained breathing apparatus and protective clothing. Cool tanks/drums with water spray/remove them to safety.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions	Use personal protective equipment (see section 8). Evacuate area of non-essential personnel. Eliminate ignition sources. Ventilate area.
Environmental Precautions	Prevent entry to sewers and public waters. Keep containers closed. Wash contaminated clothing before reuse.
Methods and Materials for Containment and Cleaning Up	Collect spillage with inert absorbent material. Collect spillage. Store away from other materials. Ensure compliance with federal, state and local regulations.

SECTION 7: HANDLING AND STORAGE

Handling and Storage

Precautions for Safe Handling	Avoid contact with eyes and skin. Avoid breathing vapors. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.
Conditions for Safe Storage Including any Incompatibilities	Keep in original container tightly closed, stored in a cool, dry, ventilated area.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Aluminum Sulfate (10043-01-3)		
USA OSHA	OSHA PEL (TWA)	2 mg/m ³
USA ACGIH	ACGIH TLV (TWA)	2 mg/m ³
Silver Sulfate (10294-26-5)		
USA OSHA	OSHA PEL (TWA)	0.01 mg/m ³
USA ACGIH	ACGIH TLV (TWA)	0.01 mg/m ³

Appropriate Engineering Controls

Material should be handled or transferred in a fume hood or with equivalent ventilation. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide adequate general and local exhaust ventilation.

Individual Protection Measures**Skin Protection**

Avoid all unnecessary exposure.

Protective gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure to prevent skin contact.

Eye Protection

Use chemical safety goggles and/or a full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye-wash fountain and quick-drench facilities in work area.

Respiratory Protection

Wear appropriate mask.

Other Information

Do not eat, drink or smoke during use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Color	Colorless
Odor	Odorless
Odor Threshold	Not determined
pH	3.0 – 4.0
Melting Point/Freezing Point	-6°C
Initial Boiling Point and Boiling Range	100°C
Flash Point	Not determined
Evaporation Rate	Not determined
Flammability (Solid, Gas)	Not determined
Upper/Lower Flammability/Explosive Limits	Not determined
Vapor Pressure	Not determined
Vapor Density	Not determined
Relative Density	Not determined
Density	Not determined
Solubility	Soluble in water
Partition Coefficient: n-octanol/water	Not determined
Auto-Ignition Temperature	Not determined
Decomposition Temperature	Not determined
Viscosity	Not determined

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Not available.
Chemical Stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	No data available
Conditions to Avoid	No data available
Incompatible Materials	Potassium, acetic anhydride, acetylene, ammonia, and hydrogen peroxide
Hazardous Decomposition Products	When heated to decomposition, can emit toxic gases, carbon dioxide, and carbon monoxide.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity	Not classified
Boric Acid (10043-35-3)	
LD50 oral rat	2660 mg/kg
Aluminum Sulfate (10043-01-3)	
LD50 oral rat	>9000 mg/kg
Sulfamic Acid (5329-14-6)	

LD50 oral rat	3160 mg/kg
LD50 oral mouse	1312 mg/kg
LD50 oral guinea pig	1050 mg/kg
Skin Corrosion/Irritation	Not classified
Serious Eye Damage/Irritation	Causes serious eye irritation.
Respiratory or Skin Sensitization	Not classified
Germ Cell Mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive Toxicity	Suspected of damaging fertility or the unborn child.
Specific Target Organ Toxicity (Single Exposure)	Not classified
Specific Target Organ Toxicity (Repeated Exposure)	Not classified
Aspiration Hazard	Not classified
Potential Adverse Human Health Effects and Symptoms	Not classified
Chronic Symptoms	Not classified

SECTION 12: ECOLOGICAL INFORMATION

Toxicity Very toxic to aquatic life with long lasting effects.

Sulfamic Acid (5329-14-6)	
LC50 fish	70.3 mg/l: 96 h (Pimephales promelas)
Silver Sulfate (10294-26-5)	
EC10 fish	0.00019 mg/l: 217 d (Salmo trutta)
EC50 Daphnia and other aquatic invertebrates	0.004 mg/l: 48 h
Boric Acid (10043-35-3)	
LC50 fish	279 mg/l: 96 h (Ptychogeiulus Lucius)
LC50 fish	1021 mg/l: 96 h (Lepomis macrochirus (Bluegill))
LC50 Daphnia and other aquatic invertebrates	53.2 mg/l: 21 d (Daphnia magna)
EC50 Daphnia and other aquatic invertebrates	133 mg/l: 48 h (Daphnia magna)

Persistence and Degradability No data available
Bioaccumulative Potential Silver Sulfate: 8 d at 15°C, Oncorhynchus mykiss (rainbow trout)
Mobility in Soil No data available
Other Adverse Effects Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Methods of Disposal

Disposal Recommendations Dispose of contents/containers in accordance with local, state and federal regulations.
Ecology-Waste Materials Avoid release to the surrounding environment.

SECTION 14: TRANSPORT INFORMATION

UN Number Not applicable
UN Shipping Name Not applicable
Transport Hazard Class(es) Not applicable
Packing Group Not applicable
Environmental Hazards Not applicable
Transport in Bulk Not applicable
Special Precautions Not applicable

SECTION 15: REGULATORY INFORMATION

Boric Acid (10043-35-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Aluminum Sulfate (10043-01-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Silver Sulfate (10294-26-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Sulfamic Acid (5329-14-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

SECTION 16: OTHER INFORMATION

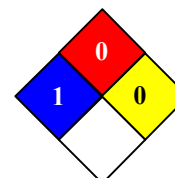
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NFPA Hazards

Health Hazard 1: Exposure would cause irritation with any minor residual injury.

Fire Hazard 0: Materials that will not burn under typical fire conditions.

Reactivity/Instability 0: Normally stable, even under fire exposure conditions, and is not reactive with water.



HMIS III Rating

Health 1: Irritation or minor reversible injury possible.

Flammability 0: Materials that will not burn.

Physical Hazard 0: Materials that are normally stable, even under fire conditions.

Personal Protection A

N-27B	
Health	1
Flammability	0
Physical Hazard	0
Personal Protection	A

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END OF SAFETY DATA SHEET