

Section 1. Identification

Product Identifier: Alum-N8
Other Means of Identification: Organic Acid Salt
Product Type: Liquid
Recommended Uses and: Acid replacement
Restrictions on use: Do not use with chlorates, nitrates, hypochlorites or alkaline materials. Do not mix directly with dehydrating agents such as acetic anhydride or concentrated sulfuric acid.

Supplier's Details: Enzo's Cleaning Solutions
2003 Superior Street
Sandusky, OH 44870

Tel: 419-502-0007

Emergency Telephone: Infotrac, U.S.: 1-800-535-5053 International: +1-352-323-3500
Number

Section 2. Hazards Identification

OSHA/HCS Status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the Substance or mixture
CORROSIVE TO METALS – Category 1
ACUTE TOXICITY – Category 4
SKIN CORROSION/IRRITATION – Category 1C
SERIOUS EYE DAMAGE/EYE IRRITATION – Category 1
REPRODUCTIVE TOXICITY – Category 1B

GHS Label Elements

Hazard pictograms:



Signal Word: Danger

Hazard Statements: May be corrosive to metals.
Harmful if swallowed
Causes severe skin burns and serious eye damage
May damage fertility or the unborn child (route of exposure: oral)

Precautionary Statements

Prevention: Keep only in original container. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dusts or mists. Wear protective gloves, clothing and eye or face protection. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.

Response: Absorb spillage to prevent material damage. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse Mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. IF IN EYES: Rinse cautiously 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 exposed or concerned: Get medical advice/attention.

Storage: Store in corrosive resistant containers such as fiberglass, polyethylene, polypropylene or containers with a resistant inner liner. Store locked up.

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazards Not Otherwise Classified None Known

Section 3. Composition/Information on Ingredients

Substance/mixture: Mixture

Chemical Name	%	CAS Number
Organic acid salt	Proprietary	-
Proprietary ingredient 2	Proprietary	-
Proprietary ingredient 3	Proprietary	-

The chemical identity and exact percentage of the composition has been withheld as it is a trade secret.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Section 4. First Aid Measures

Description of Necessary First Aid Measures

Eye Contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin Contact: Flush contaminated skin with plenty of water. Continue to rinse for at least 20 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most Important Symptoms/Effects, Acute and Delayed

Potential Acute Health Effects

Eye Contact: Causes serious eye damage.

Inhalation: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin Contact: Causes severe skin burns.

Ingestion: Harmful if swallowed. Irritating to mouth, throat and stomach. May damage fertility or the unborn child.

Over Exposure Signs/Symptoms

Eye Contact: Adverse symptoms may include the following:
Pain or irritation
Watering
Redness

Inhalation: No known significant effects or critical hazards.

Skin Contact: Adverse symptoms may include the following:
Pain or irritation
Redness

Ingestion: Harmful if swallowed. Irritating to mouth, throat and stomach
May damage fertility or the unborn child

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary

Notes to Physician: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific Treatments: No specific treatment

Protection of First Aiders: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

<h2>Section 5. Fire-Fighting Measures</h2>
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Extinguishing Media

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing: None known

media

Specific Hazards Arising from the chemical: Heating above 110°C results in an exothermic decomposition with release of CO₂ gas and potentially hydrofluoric acid.

Hazardous thermal decomposition products: Decomposition products may include the following materials:
 carbon dioxide
 carbon monoxide
 nitrogen oxides
 hydrofluoric acid
 metalloid fluorides
 hydrogen cyanide
 hydrogen gas

Special protective actions for fire-fighters: No special measures are required.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

For non-emergency Personnel: No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental Precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and Materials for Containment and Cleaning Up

Spill: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and Storage

Precautions for Safe Handling

Protective Measures: Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly

closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Advice on General:
occupational hygiene**

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

**Conditions for Safe:
Storage, including any
Incompatibilities**

Store below 35°C (95°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure Controls/ Personal Protection

Control Parameters

Occupational Exposure:
Limits None

**Appropriate Engineering:
Controls**

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

**Environmental Exposure:
Controls**

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual Protection Measures

Hygiene Measures:

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/Face Protection:

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin Protection

Hand Protection:

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body Protection:

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other Skin Protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory Protection: Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and Chemical Properties

Appearance

Physical State:	Liquid. [Clear with some sediment]
Color:	Colorless to Amber
Odor:	Mild acrid odor
Odor Threshold:	Not available
pH:	<1 typical [25g APW in 30g DI Water]
Melting/Freezing Point:	<-30°C
Boiling Point/Range:	100°C (212°F)
Flash Point:	>93.3°C (>200°F)
Evaporation Rate:	>1 (Butyl acetate = 1)
Flammability (solid, gas):	Not available
Lower and Upper Explosive: (flammable) Limits	Not available
Vapor Pressure:	<0.013kPa (<0.1mmHg) [room temperature]
Vapor Density:	>1 [Air = 1]
Relative Density:	1.301-1.381
Solubility:	Easily soluble in the following materials: water
Partition Coefficient: n-octanol/water	Not available
Auto-Ignition Temperature:	Not available
Decomposition Temperature:	Not available
Viscosity:	Not available

Section 10. Stability and Reactivity

Reactivity: No specific test data related to reactivity available for this product or its ingredients

Chemical Stability: This product is stable up to 95°C (203°F)

Possibility of Hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to Avoid: Do not heat above 110°C as this will result in an exothermic decomposition with rapid release of CO₂ gas and potentially hydrofluoric acid.

Incompatible Materials: Reactive or incompatible with the following materials: oxidizing materials, aluminum and zinc. This material may be extremely hazardous in contact with chlorates and nitrates. Contact with hypochlorites (eg. Chlorine bleach, sulfides or cyanides) will liberate toxic gases. Contact with alkaline materials (eg. Aqua ammonia) will generate heat and may product noxious gas. Do not mix directly with dehydrating agents such as acetic

anhydride or concentrated sulfuric acid. High concentrations of this product will react with carbonate scales which may carry vapor and so care must be taken to avoid inhalation.

Hazardous Decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Product/Ingredient Name	Result	Species	Dose	Exposure
APW	LD50 Oral	Rat	798.1 mg/kg	-

Irritation/Corrosion

Corrosive to the skin (OECD 404)

Sensitization

There is no data available

Carcinogenicity

No components are listed as carcinogens by IARC, ACGIH, OSHA or NTP above the threshold of 0.1%

Specific Target Organ Toxicity (single exposure)

There is no data available

Specific Target Organ Toxicity (repeated exposure)

There is no data available

Aspiration Hazard

There is no data available

Information on the likely routes of exposure: Dermal contact. Eye contact. Inhalation. Ingestion.

Potential Acute Health Effects

- Eye contact:** Causes serious eye damage
- Inhalation:** Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin Contact:** Causes severe skin burns.
- Ingestion:** Harmful if swallowed. Irritating to mouth, throat and stomach. May damage fertility or the unborn child.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye Contact:** Adverse symptoms may include the following:
Pain or irritation
Watering
Redness
- Inhalation:** No known significant effects or critical hazards.
- Skin Contact:** Adverse symptoms may include the following:
Pain or irritation
redness
- Ingestion:** Harmful if swallowed. Irritating to mouth, throat and stomach. May damage fertility or the unborn child.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects: No known significant effects or critical hazards.

Potential delayed effects: No known significant effects or critical hazards.

Long term exposure

Potential immediate effects: No known significant effects or critical hazards.

Potential delayed effects: No known significant effects or critical hazards.

Potential chronic health effects

General: No known significant effects or critical hazards.

Carcinogenicity: No known significant effects or critical hazards.

Mutagenicity: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

Developmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates There is no data available.

Section 12. Ecological Information

Toxicity There is no data available

Persistence and Degradability: There is no data available

Bioaccumulative Potential: There is no data available

Mobility in Soil

**Soil/water partition coefficient:
(K_{oc})** Not available

Other adverse effects: No known significant effects or critical hazards.

Section 13. Disposal Considerations

Disposal Methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport Information

	DOT / TDG	IMDG	IATA
UN Number	1760	1760	1760
UN Proper Shipping Name	Corrosive liquid N.O.S. (acid salts)	Corrosive liquid N.O.S. (acid salts)	Corrosive liquid N.O.S. (acid salts)
Transport Hazard Class(es)	8	8	8

Packing Group	III	III	III
Environmental Hazards	No	No	No
Additional Information			

Transport in bulk according: Not available

To Annex II of MARPOL 73/78 and the IBC Code

Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory Information

United States – Patent No. 8,389,453

U.S. Federal Regulations: **United States Inventory (TSCA):** All components are listed or exempted

Clean Air Act Section 112: Not listed

(b) Hazardous Air Pollutants (HAPS)

Clean Air Act Section 602: Not listed

Class I Substances

Clean Air Act Section 602: Not listed

Class II Substances

DEA List I Chemicals: Not listed

(Precursor Chemicals)

DEA List II Chemicals: Not listed

(Essential Chemicals)

SARA 302/304

Composition/Information on Ingredients

Not listed

SARA 311/312

Classification: Immediate (acute) health hazard

Composition/Information on Ingredients

Name	%	Fire Hazard	Sudden Release of Pressure	Reactive	Immediate (acute) Health Hazard	Delayed (chronic) Health Hazard
Organic Acid Salt	proprietary	No	No	No	Yes	No
Proprietary ingredient 2	proprietary	No	No	No	Yes	No
Proprietary ingredient 3	proprietary	No	No	No	Yes	No

International Lists

National Inventory

Australia (AICS): At least one component is not listed.

Canada (DSL): All components are listed or exempted.

China (IECSC): At least one component is not listed.

Europe (EINECS): At least one component is not listed.

Japan (ENCS): At least one component is not listed.
New Zealand (NZIoC): At least one component is not listed.
Philippines (PICCS): At least one component is not listed.
Republic of Korea (KECL): At least one component is not listed.
Taiwan (NECI): At least one component is not listed.

Section 16. Other Information

History

Date of issue mm/dd/yyyy: 12/03/2014
Date of previous issue: None
Version: 1
Revised Section(s): Not applicable
Prepared by: Win Manuco Ltd.

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