



ICP Analytical Mixture 17

High-Purity Standards

Catalogue number: ICP-AM-17
Version No: 2.2
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Chemwatch Hazard Alert Code: 4

Issue Date: 04/21/2016
Print Date: 04/21/2016
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S.GHS.U.S.A.EN

SECTION 1 IDENTIFICATION

Product Identifier

Product name	ICP Analytical Mixture 17
Synonyms	Not Available
Proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s
Other means of identification	ICP-AM-17

Recommended use of the chemical and restrictions on use

Relevant identified uses	INTEGRITY CHECK: Product contains BOTH an acid and a base as ingredients.
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Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	High-Purity Standards
Address	PO Box 41727 SC 29423 United States
Telephone	843-767-7900
Fax	843-767-7906
Website	highpuritystandards.com
Email	Not Available

Emergency phone number

Association / Organisation	INFOTRAC
Emergency telephone numbers	800-535-5053
Other emergency telephone numbers	Not Available

SECTION 2 HAZARD(S) IDENTIFICATION

Classification of the substance or mixture

Classification	Skin Corrosion/Irritation Category 1B, Serious Eye Damage Category 1, Metal Corrosion Category 1, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation)
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Label elements

GHS label elements	
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SIGNAL WORD **DANGER**

Hazard statement(s)

H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H290	May be corrosive to metals.
H335	May cause respiratory irritation.

Continued...

Hazard(s) not otherwise specified

Not Applicable

Precautionary statement(s) Prevention

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
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Precautionary statement(s) Response

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
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Precautionary statement(s) Storage

P405	Store locked up.
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Precautionary statement(s) Disposal

P501	Dispose of contents/container in accordance with local regulations.
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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**Substances**

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
7429-90-5	0.1	<u>aluminium</u>
7440-70-2	0.1	<u>calcium</u>
7439-89-6	0.1	<u>iron</u>
7439-95-4	0.1	<u>magnesium</u>
7722-76-1	0.1	<u>ammonium phosphate, monobasic</u>
7440-09-7	0.1	<u>potassium</u>
7440-23-5	0.1	<u>sodium</u>
7697-37-2	5	<u>nitric acid</u>
7732-18-5	Balance	<u>water</u>

SECTION 4 FIRST-AID MEASURES**Description of first aid measures**

Eye Contact	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ Immediately hold eyelids apart and flush the eye continuously with running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▶ Transport to hospital or doctor without delay. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> ▶ Immediately flush body and clothes with large amounts of water, using safety shower if available. ▶ Quickly remove all contaminated clothing, including footwear. ▶ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. ▶ Transport to hospital, or doctor.
Inhalation	<ul style="list-style-type: none"> ▶ If fumes or combustion products are inhaled remove from contaminated area. ▶ Lay patient down. Keep warm and rested. ▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▶ Transport to hospital, or doctor, without delay. ▶ Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema. ▶ Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs). ▶ As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested. ▶ Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered. <p>This must definitely be left to a doctor or person authorised by him/her. (ICSC13719)</p>
Ingestion	<ul style="list-style-type: none"> ▶ For advice, contact a Poisons Information Centre or a doctor at once. ▶ Urgent hospital treatment is likely to be needed. ▶ If swallowed do NOT induce vomiting. ▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▶ Observe the patient carefully. ▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▶ Transport to hospital or doctor without delay.

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

For acute or short term repeated exposures to strong acids:

- ▶ Airway problems may arise from laryngeal edema and inhalation exposure. Treat with 100% oxygen initially.
- ▶ Respiratory distress may require cricothyroidotomy if endotracheal intubation is contraindicated by excessive swelling
- ▶ Intravenous lines should be established immediately in all cases where there is evidence of circulatory compromise.
- ▶ Strong acids produce a coagulation necrosis characterised by formation of a coagulum (eschar) as a result of the desiccating action of the acid on proteins in specific tissues.

INGESTION:

- ▶ Immediate dilution (milk or water) within 30 minutes post ingestion is recommended.
- ▶ **DO NOT attempt to neutralise the acid since exothermic reaction may extend the corrosive injury.**
- ▶ Be careful to avoid further vomit since re-exposure of the mucosa to the acid is harmful. Limit fluids to one or two glasses in an adult.
- ▶ Charcoal has no place in acid management.
- ▶ Some authors suggest the use of lavage within 1 hour of ingestion.

SKIN:

- ▶ Skin lesions require copious saline irrigation. Treat chemical burns as thermal burns with non-adherent gauze and wrapping.
- ▶ Deep second-degree burns may benefit from topical silver sulfadiazine.

EYE:

- ▶ Eye injuries require retraction of the eyelids to ensure thorough irrigation of the conjunctival cul-de-sacs. Irrigation should last at least 20-30 minutes. **DO NOT use neutralising agents or any other additives.** Several litres of saline are required.
- ▶ Cycloplegic drops, (1% cyclopentolate for short-term use or 5% homatropine for longer term use) antibiotic drops, vasoconstrictive agents or artificial tears may be indicated dependent on the severity of the injury.
- ▶ Steroid eye drops should only be administered with the approval of a consulting ophthalmologist).

[Ellenhorn and Barceloux: Medical Toxicology]

SECTION 5 FIRE-FIGHTING MEASURES

Extinguishing media

- ▶ There is no restriction on the type of extinguisher which may be used.
- ▶ Use extinguishing media suitable for surrounding area.

Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.
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Special protective equipment and precautions for fire-fighters

Fire Fighting	
Fire/Explosion Hazard	<ul style="list-style-type: none"> ▶ Non combustible. When aluminium oxide dust is dispersed in air, firefighters should wear protection against inhalation of dust particles, which can also contain hazardous substances from the fire absorbed on the alumina particles.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Minor Spills	<ul style="list-style-type: none"> ▶ Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material. ▶ Clean up all spills immediately.
Major Spills	

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> ▶ Avoid all personal contact, including inhalation.
Other information	<ul style="list-style-type: none"> ▶ Store in original containers.

Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> ▶ DO NOT use aluminium or galvanised containers ▶ Check regularly for spills and leaks ▶ Lined metal can, lined metal pail/ can. For low viscosity materials <ul style="list-style-type: none"> ▶ Drums and jericans must be of the non-removable head type.
Storage incompatibility	For aluminas (aluminium oxide): <ul style="list-style-type: none"> ▶ Incompatible with hot chlorinated rubber. ▶ Inorganic acids are generally soluble in water with the release of hydrogen ions. ▶ Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

|| OCCUPATIONAL EXPOSURE LIMITS (OEL)

|| INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Levels (PELs) - Table Z1	aluminium	Aluminum, metal / Aluminum, metal-Respirable fraction	15 mg/m3 / 5 mg/m3	Not Available	Not Available	Total dust; (as Al) / (as Al)
US OSHA Permissible Exposure Levels (PELs) - Table Z3	aluminium	Inert or Nuisance Dust	5 mg/m3 / 15 mg/m3 / 15 mppcf / 50 mppcf	Not Available	Not Available	Respirable fraction;All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by this limit, which is the same as the Particulates Not Otherwise Regulated (PNOR) limit in Table Z-1. / Total dust;All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by this limit, which is the same as the Particulates Not Otherwise Regulated (PNOR) limit in Table Z-1.
US ACGIH Threshold Limit Values (TLV)	aluminium	Aluminum metal and insoluble compounds	1 mg/m3	Not Available	Not Available	TLV® Basis: Pneumoconiosis; LRT irr; neurotoxicity
US NIOSH Recommended Exposure Limits (RELs)	aluminium	Aluminium, Aluminum metal, Aluminum powder, Elemental aluminum	10 (total), 5 (resp) mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Levels (PELs) - Table Z3	iron	Inert or Nuisance Dust	5 mg/m3 / 15 mg/m3 / 15 mppcf / 50 mppcf	Not Available	Not Available	Respirable fraction;All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by this limit, which is the same as the Particulates Not Otherwise Regulated (PNOR) limit in Table Z-1. / Total dust;All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by this limit, which is the same as the Particulates Not Otherwise Regulated (PNOR) limit in Table Z-1.
US OSHA Permissible Exposure Levels (PELs) - Table Z3	magnesium	Inert or Nuisance Dust	5 mg/m3 / 15 mg/m3 / 15 mppcf / 50 mppcf	Not Available	Not Available	Respirable fraction;All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by this limit, which is the same as the Particulates Not Otherwise Regulated (PNOR) limit in Table Z-1. / Total dust;All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by this limit, which is the same as the Particulates Not Otherwise Regulated (PNOR) limit in Table Z-1.
US OSHA Permissible Exposure Levels (PELs) - Table Z1	nitric acid	Nitric acid	5 mg/m3 / 2 ppm	Not Available	Not Available	Not Available
US ACGIH Threshold Limit Values (TLV)	nitric acid	Nitric acid	2 ppm	4 ppm	Not Available	TLV® Basis: URT & eye irr; dental erosion
US NIOSH Recommended Exposure Limits (RELs)	nitric acid	Aqua fortis, Engravers acid, Hydrogen nitrate, Red fuming nitric acid (RFNA), White fuming nitric acid (WFNA)	5 mg/m3 / 2 ppm	10 mg/m3 / 4 ppm	Not Available	Not Available

EMERGENCY LIMITS


Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
aluminium	Aluminum	3 mg/m3	33 mg/m3	200 mg/m3
calcium	Calcium	30 mg/m3	330 mg/m3	2000 mg/m3
iron	Iron	1 mg/m3	11 mg/m3	110 mg/m3
magnesium	Magnesium	0.016 mg/m3	0.17 mg/m3	1 mg/m3
ammonium phosphate, monobasic	Ammonium dihydrogen phosphate; (Monoammonium phosphate)	12 mg/m3	130 mg/m3	790 mg/m3
potassium	Potassium	2.3 mg/m3	25 mg/m3	150 mg/m3
sodium	Sodium	13 mg/m3	140 mg/m3	870 mg/m3
nitric acid	Nitric acid	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
aluminium	Not Available	Not Available
calcium	Not Available	Not Available
iron	Not Available	Not Available
magnesium	Not Available	Not Available
ammonium phosphate, monobasic	Not Available	Not Available
potassium	Not Available	Not Available
sodium	Not Available	Not Available
nitric acid	100 ppm	25 ppm
water	Not Available	Not Available

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard.
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Personal protection	
Eye and face protection	<ul style="list-style-type: none"> Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure.
Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none"> Elbow length PVC gloves When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> Overalls.
Thermal hazards	Not Available

Respiratory protection

Type AE-P Filter of sufficient capacity.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

Appearance	Not Available		
Physical state	Liquid	Relative density (Water = 1)	Not Available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Available	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Available
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water (g/L)	Miscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> Contact with alkaline material liberates heat
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION**Information on toxicological effects**

Inhaled	The material can cause respiratory irritation in some persons. Corrosive acids can cause irritation of the respiratory tract, with coughing, choking and mucous membrane damage. The material has NOT been classified by EC Directives or other classification systems as "harmful by inhalation".
Ingestion	Ingestion of acidic corrosives may produce burns around and in the mouth, the throat and oesophagus. The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion".
Skin Contact	Skin contact with acidic corrosives may result in pain and burns; these may be deep with distinct edges and may heal slowly with the formation of scar tissue. Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions. Though considered non-harmful, slight irritation may result from contact because of the abrasive nature of the aluminium oxide particles. Open cuts, abraded or irritated skin should not be exposed to this material

Continued...

	Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.
Eye	If applied to the eyes, this material causes severe eye damage. Direct eye contact with acid corrosives may produce pain, tears, sensitivity to light and burns.
Chronic	Repeated or prolonged exposure to acids may result in the erosion of teeth, swelling and/or ulceration of mouth lining. Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Animal testing shows long term exposure to aluminium oxides may cause lung disease and cancer, depending on the size of the particle.

ICP Analytical Mixture 17	TOXICITY	IRRITATION
	Not Available	Not Available

aluminium	TOXICITY	IRRITATION
	Oral (rat) LD50: >2000 mg/kg ^[1]	Not Available

calcium	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >2500 mg/kg ^[1]	Not Available
	Oral (rat) LD50: >2000 mg/kg ^[1]	

iron	TOXICITY	IRRITATION
	Oral (rat) LD50: 7500 mg/kg ^[1]	Nil reported [Patty]

magnesium	TOXICITY	IRRITATION
	Oral (rat) LD50: >2000 mg/kg ^[1]	Nil reported [Manufacturer]

ammonium phosphate, monobasic	TOXICITY	IRRITATION
	dermal (rat) LD50: >5000 mg/kg ^[1]	Not Available
	Oral (rat) LD50: >1000 mg/kg ^[1]	

potassium	TOXICITY	IRRITATION
	Not Available	Not Available

sodium	TOXICITY	IRRITATION
	Not Available	Not Available

nitric acid	TOXICITY	IRRITATION
	Inhalation (rat) LC50: 0.13 mg/L/4h ^[2]	* DuPont
	Inhalation (rat) LC50: 2500 ppm/1h * ^[2]	Nil reported

water	TOXICITY	IRRITATION
	Oral (rat) LD50: >90000 mg/kg ^[2]	Not Available

Legend: 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

ICP Analytical Mixture 17	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. for acid mists, aerosols, vapours Data from assays for genotoxic activity in vitro suggest that eukaryotic cells are susceptible to genetic damage when the pH falls to about 6.5.
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CALCIUM	The solid may react violently on contact with wet skin tissue, i.e. eyes, mouth, causing chemical and thermal burns. The acute effects include burns, ulceration, or tissue death, severe eye damage (corneal burns or opacification), and probable blindness. Inhalation of dust or fumes (especially from a fire involving calcium) will cause shortness of breath, nausea, headache, nose and respiratory tract irritation and in extreme, pneumonitis
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NITRIC ACID	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. for acid mists, aerosols, vapours Data from assays for genotoxic activity in vitro suggest that eukaryotic cells are susceptible to genetic damage when the pH falls to about 6.5. The material may produce severe irritation to the eye causing pronounced inflammation. The material may produce respiratory tract irritation, and result in damage to the lung including reduced lung function. The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Oral (?) LD50: 50-500 mg/kg * [Various Manufacturers]
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ALUMINIUM & WATER	No significant acute toxicological data identified in literature search.		
CALCIUM & POTASSIUM	No significant acute toxicological data identified in literature search.		
	Asthma-like symptoms may continue for months or even years after exposure to the material ceases.		
AMMONIUM PHOSPHATE, MONOBASIC & SODIUM	Asthma-like symptoms may continue for months or even years after exposure to the material ceases.		
	No significant acute toxicological data identified in literature search.		
Acute Toxicity	☒	Carcinogenicity	☒
Skin Irritation/Corrosion	✔	Reproductivity	☒
Serious Eye Damage/Irritation	✔	STOT - Single Exposure	☒
Respiratory or Skin sensitisation	☒	STOT - Repeated Exposure	☒
Mutagenicity	☒	Aspiration Hazard	☒

Legend: ✘ – Data available but does not fill the criteria for classification
 ✔ – Data required to make classification available
 ☒ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
aluminium	BCF	360	Algae or other aquatic plants	9mg/L	4
aluminium	EC50	120	Fish	0.000051mg/L	5
aluminium	LC50	96	Fish	0.078-0.108mg/L	2
aluminium	EC50	48	Crustacea	0.7364mg/L	2
aluminium	EC50	96	Algae or other aquatic plants	0.0054mg/L	2
aluminium	NOEC	72	Algae or other aquatic plants	>=0.004mg/L	2
calcium	EC50	24	Crustacea	6934mg/L	5
calcium	EC50	48	Crustacea	49.1mg/L	2
calcium	NOEC	336	Crustacea	32mg/L	2
iron	BCF	24	Crustacea	0.000002mg/L	4
iron	EC50	96	Algae or other aquatic plants	3.7mg/L	4
iron	LC50	96	Fish	0.05mg/L	2
iron	NOEC	504	Fish	0.52mg/L	2
iron	EC50	48	Crustacea	5.11mg/L	2
iron	EC50	504	Crustacea	4.49mg/L	2
magnesium	LC50	96	Fish	541mg/L	2
magnesium	EC50	48	Crustacea	344mg/L	2
magnesium	EC50	72	Algae or other aquatic plants	>12mg/L	2
magnesium	NOEC	72	Algae or other aquatic plants	>=12mg/L	2
ammonium phosphate, monobasic	LC50	96	Fish	>85.9mg/L	2
ammonium phosphate, monobasic	EC50	72	Algae or other aquatic plants	>97.1mg/L	2
ammonium phosphate, monobasic	NOEC	72	Algae or other aquatic plants	3.57mg/L	2
potassium	EC50	24	Crustacea	400mg/L	5
sodium	EC50	48	Crustacea	1640mg/L	4
sodium	EC50	504	Crustacea	1020mg/L	4
nitric acid	NOEC	2160	Fish	97.8mg/L	2
nitric acid	EC50	48	Crustacea	490mg/L	2
nitric acid	EC50	96	Crustacea	39mg/L	2
water	EC50	384	Crustacea	199.179mg/L	3
water	EC50	96	Algae or other aquatic plants	8768.874mg/L	3
water	LC50	96	Fish	897.520mg/L	3

Legend:

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Ecotoxicity:

The tolerance of water organisms towards pH margin and variation is diverse. Prevent, by any means available, spillage from entering drains or water courses.

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
ammonium phosphate, monobasic	HIGH	HIGH
water	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
ammonium phosphate, monobasic	LOW (LogKOW = -0.7699)
water	LOW (LogKOW = -1.38)

Mobility in soil

Ingredient	Mobility
ammonium phosphate, monobasic	HIGH (KOC = 1)
water	LOW (KOC = 14.3)

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	
	▶ Recycle wherever possible.

SECTION 14 TRANSPORT INFORMATION

Labels Required

	
Marine Pollutant	NO

Land transport (DOT)

UN number	3264				
Packing group	II				
UN proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s				
Environmental hazard	Not Applicable				
Transport hazard class(es)	<table border="1"> <tr> <td>Class</td> <td>8</td> </tr> <tr> <td>Subrisk</td> <td>Not Applicable</td> </tr> </table>	Class	8	Subrisk	Not Applicable
Class	8				
Subrisk	Not Applicable				
Special precautions for user	<table border="1"> <tr> <td>Hazard Label</td> <td>8</td> </tr> <tr> <td>Special provisions</td> <td>B2, IB2, T11, TP2, TP27</td> </tr> </table>	Hazard Label	8	Special provisions	B2, IB2, T11, TP2, TP27
Hazard Label	8				
Special provisions	B2, IB2, T11, TP2, TP27				

Air transport (ICAO-IATA / DGR)

UN number	3264								
Packing group	II								
UN proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s. *								
Environmental hazard	Not Applicable								
Transport hazard class(es)	<table border="1"> <tr> <td>ICAO/IATA Class</td> <td>8</td> </tr> <tr> <td>ICAO / IATA Subrisk</td> <td>Not Applicable</td> </tr> <tr> <td>ERG Code</td> <td>8L</td> </tr> </table>	ICAO/IATA Class	8	ICAO / IATA Subrisk	Not Applicable	ERG Code	8L		
ICAO/IATA Class	8								
ICAO / IATA Subrisk	Not Applicable								
ERG Code	8L								
Special precautions for user	<table border="1"> <tr> <td>Special provisions</td> <td>A3A803</td> </tr> <tr> <td>Cargo Only Packing Instructions</td> <td>855</td> </tr> <tr> <td>Cargo Only Maximum Qty / Pack</td> <td>30 L</td> </tr> <tr> <td>Passenger and Cargo Packing Instructions</td> <td>851</td> </tr> </table>	Special provisions	A3A803	Cargo Only Packing Instructions	855	Cargo Only Maximum Qty / Pack	30 L	Passenger and Cargo Packing Instructions	851
Special provisions	A3A803								
Cargo Only Packing Instructions	855								
Cargo Only Maximum Qty / Pack	30 L								
Passenger and Cargo Packing Instructions	851								

Passenger and Cargo Maximum Qty / Pack	1 L
Passenger and Cargo Limited Quantity Packing Instructions	Y840
Passenger and Cargo Limited Maximum Qty / Pack	0.5 L

Sea transport (IMDG-Code / GGVSee)

UN number	3264		
Packing group	II		
UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.		
Environmental hazard	Not Applicable		
Transport hazard class(es)	IMDG Class	8	
	IMDG Subrisk	Not Applicable	
Special precautions for user	EMS Number	F-A, S-B	
	Special provisions	274	
	Limited Quantities	1 L	

Transport in bulk according to Annex II of MARPOL and the IBC code

Source	Product name	Pollution Category	Ship Type
IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk	Nitric acid (70% and over) Nitric acid (less than 70%)	Y; Y	2 2

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

ALUMINIUM(7429-90-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs	US - Washington Permissible exposure limits of air contaminants
US - Alaska Limits for Air Contaminants	US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants
US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)	US ACGIH Threshold Limit Values (TLV)
US - California Permissible Exposure Limits for Chemical Contaminants	US ACGIH Threshold Limit Values (TLV) - Carcinogens
US - Hawaii Air Contaminant Limits	US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)
US - Michigan Exposure Limits for Air Contaminants	US EPCRA Section 313 Chemical List
US - Minnesota Permissible Exposure Limits (PELs)	US NIOSH Recommended Exposure Limits (RELs)
US - Oregon Permissible Exposure Limits (Z-1)	US OSHA Permissible Exposure Levels (PELs) - Table Z1
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	US OSHA Permissible Exposure Levels (PELs) - Table Z3
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	

CALCIUM(7440-70-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

IRON(7439-89-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs	US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants
US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)	US - Washington Permissible exposure limits of air contaminants
US - California Permissible Exposure Limits for Chemical Contaminants	US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants
US - Hawaii Air Contaminant Limits	US OSHA Permissible Exposure Levels (PELs) - Table Z3
US - Michigan Exposure Limits for Air Contaminants	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US - Oregon Permissible Exposure Limits (Z-1)	

MAGNESIUM(7439-95-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs	US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants
US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)	US - Washington Permissible exposure limits of air contaminants
US - California Permissible Exposure Limits for Chemical Contaminants	US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants
US - Hawaii Air Contaminant Limits	US OSHA Permissible Exposure Levels (PELs) - Table Z3
US - Michigan Exposure Limits for Air Contaminants	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US - Oregon Permissible Exposure Limits (Z-1)	

AMMONIUM PHOSPHATE, MONOBASIC(7722-76-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

POTASSIUM(7440-09-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS

International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
SODIUM(7440-23-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS	
International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
NITRIC ACID(7697-37-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS	
International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft	US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants
US - Alaska Limits for Air Contaminants	US - Washington Permissible exposure limits of air contaminants
US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELS)	US - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values
US - California Permissible Exposure Limits for Chemical Contaminants	US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants
US - Hawaii Air Contaminant Limits	US ACGIH Threshold Limit Values (TLV)
US - Idaho - Limits for Air Contaminants	US EPCRA Section 313 Chemical List
US - Michigan Exposure Limits for Air Contaminants	US NIOSH Recommended Exposure Limits (RELS)
US - Minnesota Permissible Exposure Limits (PELs)	US OSHA Permissible Exposure Levels (PELs) - Table Z1
US - Oregon Permissible Exposure Limits (Z-1)	US SARA Section 302 Extremely Hazardous Substances
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	
WATER(7732-18-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS	
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory	

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SECTION 311/312 HAZARD CATEGORIES

Immediate (acute) health hazard	YES
Delayed (chronic) health hazard	NO
Fire hazard	NO
Pressure hazard	NO
Reactivity hazard	NO

US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)

Name	Reportable Quantity in Pounds (lb)	Reportable Quantity in kg
Sodium	10	4.54
Nitric acid	1000	454

State Regulations

US. CALIFORNIA PROPOSITION 65

None Reported

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (sodium; calcium; potassium; magnesium; ammonium phosphate, monobasic; water; aluminium; iron; nitric acid)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	N (sodium; calcium; potassium; magnesium; water; aluminium; iron)
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
Legend:	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

Other information

Ingredients with multiple cas numbers

Name	CAS No
calcium	7440-70-2, 8047-59-4

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit,
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index

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