Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2024 Reviewed on 12/13/2017

1 Identification

· **Product identifier**

· **Trade name: Multi Element AA Standard 100ppm**
each: Al,Ca,Cu,K,Fe,Na,Ni,P,Si,V, Zn,As

· **Article number:** ND366

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Aqua Solutions, Inc.
6913 Highway 225
DEER PARK, TX 77536
USA
800-256-2586

· **Information department:**
Technical Coordinator
Sherman Nelson shermann@aquasolutions.org
· **Emergency telephone number:**
Chemtrec: 800-424-9300
Canutec: 613-996-6666

2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS08 Health hazard

Carcinogenicity 2 H351 Suspected of causing cancer. Route of exposure: Inhalation.

GHS05 Corrosion

Skin Corrosion 1A H314 Causes severe skin burns and eye damage.
Eye Damage 1 H318 Causes serious eye damage.

GHS07

Sensitization - Skin 1 H317 May cause an allergic skin reaction.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**

GHS05 GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**
Nitric Acid
Nickel Metal

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2024 Reviewed on 12/13/2017

Trade name: Multi Element AA Standard 100ppm
each: Al,Ca,Cu,K,Fe,Na,Ni,P,Si,V, Zn,As

(Contd. of page 1)

· **Hazard statements**
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Suspected of causing cancer. Route of exposure: Inhalation.
· **Precautionary statements**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dusts or mists.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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/doctor.
IF exposed or concerned: Get medical advice/attention.
Specific treatment (see on this label).
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 3
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 3
Fire = 0
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**		
CAS: 7697-37-2	Nitric Acid	5.0%
CAS: 7803-55-6	Ammonium Metavanadate	0.1%
CAS: 7440-02-0	Nickel Metal	0.1%
CAS: 16919-19-0	Ammonium hexafluorosilicate	0.1%

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2024 Reviewed on 12/13/2017

Trade name: Multi Element AA Standard 100ppm
each: Al,Ca,Cu,K,Fe,Na,Ni,P,Si,V, Zn,As

(Contd. of page 2)

· **Table of Nonhazardous Ingredients**

CAS: 7440-50-8	copper	0.1%
CAS: 7783-28-0	Ammonium Phosphate Dibasic	0.1%
CAS: 471-34-1	Calcium Carbonate	0.1%
CAS: 7429-90-5	aluminum powder (stabilized)	0.1%
CAS: 7439-89-6	Iron Metal	0.1%
CAS: 7757-79-1	Potassium Nitrate	0.1%
CAS: 7631-99-4	Sodium Nitrate	0.1%
CAS: 7440-66-6	Zinc Metal	0.09%
CAS: 1327-53-3	Arsenic Trioxide	0.01%
CAS: 7732-18-5	Water	93.9%

4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:**
Immediately call a doctor.
Drink copious amounts of water and provide fresh air. Immediately call a doctor.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** No special measures required.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:** Dilute with plenty of water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2024 Reviewed on 12/13/2017

Trade name: Multi Element AA Standard 100ppm
each: Al,Ca,Cu,K,Fe,Na,Ni,P,Si,V, Zn,As

(Contd. of page 3)

Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** Keep receptacle tightly sealed.
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see section 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
CAS: 7697-37-2 Nitric Acid	
PEL	Long-term value: 5 mg/m³, 2 ppm
REL	Short-term value: 10 mg/m³, 4 ppm Long-term value: 5 mg/m³, 2 ppm
TLV	Short-term value: 10 mg/m³, 4 ppm Long-term value: 5.2 mg/m³, 2 ppm
CAS: 7440-02-0 Nickel Metal	
PEL	Long-term value: 1 mg/m³
REL	Long-term value: 0.015 mg/m³ as Ni; See Pocket Guide App. A
TLV	Long-term value: 1.5* mg/m³ elemental, *inhalable fraction

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Trade name: Multi Element AA Standard 100ppm
each: Al,Ca,Cu,K,Fe,Na,Ni,P,Si,V, Zn,As

(Contd. of page 4)

· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:**

Tightly sealed goggles

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Liquid
Color:	Light green
· **Odor:**	Odorless
· **Odor threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
· **Flash point:**	Not applicable.
· **Flammability (solid, gaseous):**	Not applicable.
· **Decomposition temperature:**	Not determined.
· **Ignition temperature:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not determined.
Upper:	Not determined.

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2024 Reviewed on 12/13/2017

Trade name: Multi Element AA Standard 100ppm
each: Al,Ca,Cu,K,Fe,Na,Ni,P,Si,V, Zn,As

(Contd. of page 5)

· **Vapor pressure at 20 °C (68 °F):**	23 hPa (17.3 mm Hg)
· **Density:**	Not determined.
· **Relative density**	Not determined.
· **Vapor density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with Water:**	Fully miscible.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Organic solvents:	0.0 %
Water:	93.9 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
CAS: 7803-55-6 Ammonium Metavanadate		
Oral	LD50	160 mg/kg (rat)

· **Primary irritant effect:**
· **on the skin:** Caustic effect on skin and mucous membranes.
· **on the eye:** Strong caustic effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2024 Reviewed on 12/13/2017

Trade name: Multi Element AA Standard 100ppm
each: Al,Ca,Cu,K,Fe,Na,Ni,P,Si,V, Zn,As

(Contd. of page 6)

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
CAS: 7440-02-0	Nickel Metal	1
CAS: 1327-53-3	Arsenic Trioxide	1

· **NTP (National Toxicology Program)**		
CAS: 7440-02-0	Nickel Metal	R
CAS: 1327-53-3	Arsenic Trioxide	K

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:** Must not reach bodies of water or drainage ditch undiluted or unneutralized.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number**	
· **DOT, IMDG, IATA**	UN1760
· **UN proper shipping name**	
· **DOT**	Corrosive liquids, n.o.s. (Nitric acid)
· **IMDG, IATA**	CORROSIVE LIQUID, N.O.S. (NITRIC ACID)

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2024 Reviewed on 12/13/2017

Trade name: Multi Element AA Standard 100ppm
each: Al,Ca,Cu,K,Fe,Na,Ni,P,Si,V, Zn,As

(Contd. of page 7)

· **Transport hazard class(es)**

· **DOT**

· **Class**	8 Corrosive substances
· **Label**	8

· **IMDG, IATA**

· **Class**	8 Corrosive substances
· **Label**	8
· **Packing group**	
· **DOT, IMDG, IATA**	II
· **Environmental hazards:**	
· **Marine pollutant:**	No
· **Special precautions for user**	Warning: Corrosive substances
· **Hazard identification number (Kemler code):**	80
· **EMS Number:**	F-A,S-B
· **Segregation groups**	Acids
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **UN "Model Regulation":**	UN1760, Corrosive liquids, n.o.s. (Nitric acid), 8, II

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.

· **Sara**

· **Section 355 (extremely hazardous substances):**	
CAS: 7697-37-2	Nitric Acid
CAS: 1327-53-3	Arsenic Trioxide

· **Section 313 (Specific toxic chemical listings):**	
CAS: 7697-37-2	Nitric Acid
CAS: 7440-50-8	copper
CAS: 7803-55-6	Ammonium Metavanadate
CAS: 7440-02-0	Nickel Metal
CAS: 7440-66-6	Zinc Metal
CAS: 1327-53-3	Arsenic Trioxide

(Contd. on page 9)

Safety Data Sheet
acc. to OSHA HCS

Trade name: Multi Element AA Standard 100ppm
each: Al,Ca,Cu,K,Fe,Na,Ni,P,Si,V, Zn,As

(Contd. of page 8)

· **TSCA (Toxic Substances Control Act):**
Nitric Acid
copper
Ammonium Phosphate Dibasic
Ammonium Metavanadate
Calcium Carbonate
Iron Metal
Nickel Metal
Potassium Nitrate
Sodium Nitrate
Ammonium hexafluorosilicate
Zinc Metal
Arsenic Trioxide

· **Proposition 65**

· **Chemicals known to cause cancer:**

CAS: 7440-02-0	Nickel Metal

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

CAS: 1327-53-3	Arsenic Trioxide

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

CAS: 7440-50-8	copper	D
CAS: 7440-66-6	Zinc Metal	D, I, II
CAS: 1327-53-3	Arsenic Trioxide	A

· **TLV (Threshold Limit Value)**

CAS: 7440-02-0	Nickel Metal	A5
CAS: 1327-53-3	Arsenic Trioxide	A1

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

CAS: 7440-02-0	Nickel Metal

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**

GHS05 GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**
Nitric Acid
Nickel Metal

(Contd. on page 10)

Safety Data Sheet
acc. to OSHA HCS

Trade name: Multi Element AA Standard 100ppm
each: Al,Ca,Cu,K,Fe,Na,Ni,P,Si,V, Zn,As

(Contd. of page 9)

· **Hazard statements**
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Suspected of causing cancer. Route of exposure: Inhalation.
· **Precautionary statements**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dusts or mists.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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/doctor.
IF exposed or concerned: Get medical advice/attention.
Specific treatment (see on this label).
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Environment protection department.
· **Contact:**
· **Date of preparation / last revision**
Revision 1.2, 05/23/2024: Reviewed SDS for accuracy. MH/STN
Creation date for SDS 07-30-2014. LS
05/23/2024
· **Abbreviations and acronyms:**
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Skin Corrosion 1A: Skin corrosion/irritation – Category 1A
Eye Damage 1: Serious eye damage/eye irritation – Category 1
Sensitization - Skin 1: Skin sensitisation – Category 1
Carcinogenicity 2: Carcinogenicity – Category 2