

# Safety Data Sheet

acc. to OSHA HCS

Printing date 08/16/2024

Reviewed on 08/16/2024

## 1 Identification

- **Product identifier**
- **Trade name:** 4L Trace Mineral
- **Article number:** SCI074
- **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](mailto: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

Sensitization - Respiratory 1

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Germ Cell Mutagenicity 2

H341 Suspected of causing genetic defects.

Carcinogenicity 1B

H350 May cause cancer.

Toxic to Reproduction 1B

H360 May damage fertility or the unborn child.

Specific Target Organ Toxicity - Repeated Exposure 1 H372 Causes damage to organs through prolonged or repeated exposure.



GHS05 Corrosion

Eye Damage 1

H318 Causes serious eye damage.



GHS07

Acute Toxicity - Oral 4

H302 Harmful if swallowed.

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



GHS05



GHS07



GHS08

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- **Signal word** *Danger*

- **Hazard-determining components of labeling:**

Zinc Sulfate Heptahydrate  
Cobalt Chloride Hexahydrate  
Manganese Sulfate Monohydrate  
Cupric Sulfate Pentahydrate  
Potassium Iodide

- **Hazard statements**

Harmful if swallowed.  
Causes serious eye damage.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
Suspected of causing genetic defects.  
May cause cancer.  
May damage fertility or the unborn child.  
Causes damage to organs through prolonged or repeated exposure.

- **Precautionary statements**

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Do not breathe dust/fume/gas/mist/vapors/spray.  
Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Wear protective gloves/protective clothing/eye protection/face protection.  
[In case of inadequate ventilation] wear respiratory protection.  
If swallowed: Call a poison center/doctor if you feel unwell.  
Rinse mouth.  
If inhaled: If breathing is difficult, 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.  
Get medical advice/attention if you feel unwell.  
If experiencing respiratory symptoms: Call a poison center/doctor.  
Store locked up.  
Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**



- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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### 3 Composition/information on ingredients

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

- **Dangerous components:**

CAS: 7446-20-0	Zinc Sulfate Heptahydrate	45.314%
CAS: 10034-96-5	Manganese Sulfate Monohydrate	31.72%
CAS: 7791-13-1	Cobalt Chloride Hexahydrate	8.342%
CAS: 7758-99-8	Cupric Sulfate Pentahydrate	8.136%
CAS: 7681-11-0	Potassium Iodide	1.339%

- **Table of Nonhazardous Ingredients**

CAS: 10102-40-6	Sodium Molybdate Dihydrate	5.149%
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### 4 First-aid measures

- **Description of first aid measures**
- **General information:**  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** 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:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture**  
During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Mount respiratory protective device.  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Do not allow product to reach sewage system or any water course.  
Inform respective authorities in case of seepage into water course or sewage system.  
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Use neutralizing agent.  
Dispose contaminated material as waste according to section 13.

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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.

· **Protective Action Criteria for Chemicals**

· **PAC-1:**

CAS: 7446-20-0	Zinc Sulfate Heptahydrate	27 mg/m <sup>3</sup>
CAS: 10034-96-5	Manganese Sulfate Monohydrate	9.2 mg/m <sup>3</sup>
CAS: 7791-13-1	Cobalt Chloride Hexahydrate	0.24 mg/m <sup>3</sup>
CAS: 7758-99-8	Cupric Sulfate Pentahydrate	12 mg/m <sup>3</sup>
CAS: 10102-40-6	Sodium Molybdate Dihydrate	3.8 mg/m <sup>3</sup>
CAS: 7681-11-0	Potassium Iodide	1.3 mg/m <sup>3</sup>

· **PAC-2:**

CAS: 7446-20-0	Zinc Sulfate Heptahydrate	170 mg/m <sup>3</sup>
CAS: 10034-96-5	Manganese Sulfate Monohydrate	15 mg/m <sup>3</sup>
CAS: 7791-13-1	Cobalt Chloride Hexahydrate	25 mg/m <sup>3</sup>
CAS: 7758-99-8	Cupric Sulfate Pentahydrate	32 mg/m <sup>3</sup>
CAS: 10102-40-6	Sodium Molybdate Dihydrate	34 mg/m <sup>3</sup>
CAS: 7681-11-0	Potassium Iodide	100 mg/m <sup>3</sup>

· **PAC-3:**

CAS: 7446-20-0	Zinc Sulfate Heptahydrate	1,000 mg/m <sup>3</sup>
CAS: 10034-96-5	Manganese Sulfate Monohydrate	90 mg/m <sup>3</sup>
CAS: 7791-13-1	Cobalt Chloride Hexahydrate	150 mg/m <sup>3</sup>
CAS: 7758-99-8	Cupric Sulfate Pentahydrate	190 mg/m <sup>3</sup>
CAS: 10102-40-6	Sodium Molybdate Dihydrate	210 mg/m <sup>3</sup>
CAS: 7681-11-0	Potassium Iodide	620 mg/m <sup>3</sup>

## 7 Handling and storage

· **Handling:**

· **Precautions for safe handling**

Thorough dedusting.

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

· **Information about protection against explosions and fires:** Keep respiratory protective device available.

· **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.

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- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.

At this time, the other constituents have no known exposure limits.

<b>CAS: 10034-96-5 Manganese Sulfate Monohydrate</b>	
PEL	Ceiling limit value: 5 mg/m <sup>3</sup> as Mn
REL	Short-term value: 3 mg/m <sup>3</sup> Long-term value: 1 mg/m <sup>3</sup> as Mn
TLV	Long-term value: 0.02 * 0.1 ** mg/m <sup>3</sup> as Mn; A4, *respirable **inhalable fraction
<b>CAS: 7681-11-0 Potassium Iodide</b>	
TLV	Long-term value: 0.01 ppm A4; Skin; *inhalation

- **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.

Store protective clothing separately.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

- **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.

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· **Eye protection:**

Tightly sealed goggles

· **Body protection:** Protective work clothing

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**· **General Information**· **Appearance:**

Form: Solid  
Color: Pale Pink-Red & Blue

· **Odor:** Odorless· **Odor threshold:** Not determined.· **pH-value:** Not applicable.· **Change in condition**

Melting point/Melting range: Undetermined.  
Boiling point/Boiling range: 850 °C (1,562 °F)

· **Flash point:** Not applicable.· **Flammability (solid, gaseous):** Not determined.· **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.

· **Vapor pressure:** Not applicable.· **Density at 20 °C (68 °F):** 2.3328 g/cm<sup>3</sup> (19.46722 lbs/gal)· **Relative density** Not determined.· **Vapor density** Not applicable.· **Evaporation rate** Not applicable.· **Solubility in / Miscibility with**

Water: Soluble.

· **Partition coefficient (n-octanol/water):** Not determined.· **Viscosity:**

Dynamic: Not applicable.  
Kinematic: Not applicable.

· **Solvent content:**

VOC content: 0.00 %

Solids content: 100.0 %

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· **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:**

**ATE (Acute Toxicity Estimate)**

Oral	LD50	985 mg/kg
Inhalative	LC50/4h	18 mg/l

· **Primary irritant effect:**

- **on the skin:** No irritant effect.
- **on the eye:** Strong irritant with the danger of severe eye injury.
- **Sensitization:** Sensitization possible through inhalation.

· **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:  
Harmful  
Irritant

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

CAS: 7791-13-1 Cobalt Chloride Hexahydrate

2B

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **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.

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- **Additional ecological information:**
- **General notes:**  
*Water hazard class 3 (Self-assessment): extremely hazardous for water  
 Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
 Must not reach bodies of water or drainage ditch undiluted or unneutralized.  
 Danger to drinking water if even extremely small quantities leak into the ground.*
- **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

- |  |                 |
|--|-----------------|
| · <b>UN-Number</b>   |                 |
| · <b>DOT, IMDG, IATA</b>   | Not regulated   |
| · <b>UN proper shipping name</b>   |                 |
| · <b>DOT, IMDG, IATA</b>   | Not regulated   |
| · <b>Transport hazard class(es)</b>  |                 |
| · <b>DOT, ADN, IMDG, IATA</b>  |                 |
| · <b>Class</b>   | Not regulated   |
| · <b>Packing group</b>   |                 |
| · <b>DOT, IMDG, IATA</b>   | Not regulated   |
| · <b>Environmental hazards:</b>  | Not applicable. |
| · <b>Special precautions for user</b>  | Not applicable. |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
| · <b>Transport/Additional information:</b>                                       |                 |
| · <b>IATA</b>  |                 |
| · <b>Remarks:</b>  | > 5 kg: Class 9 |
| · <b>UN "Model Regulation":</b>  | Not regulated   |

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## 15 Regulatory information

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

· Sara

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

CAS: 10034-96-5 Manganese Sulfate Monohydrate

CAS: 7791-13-1 Cobalt Chloride Hexahydrate

CAS: 7758-99-8 Cupric Sulfate Pentahydrate

· **TSCA (Toxic Substances Control Act):**

Potassium Iodide

ACTIVE

· **Hazardous Air Pollutants**

CAS: 10034-96-5 Manganese Sulfate Monohydrate

CAS: 7791-13-1 Cobalt Chloride Hexahydrate

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **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:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

CAS: 7446-20-0 Zinc Sulfate Heptahydrate

D, I, II

CAS: 10034-96-5 Manganese Sulfate Monohydrate

D

· **TLV (Threshold Limit Value)**

None of the ingredients is listed.

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

None of the ingredients is listed.

· **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:**

Zinc Sulfate Heptahydrate

Cobalt Chloride Hexahydrate

Manganese Sulfate Monohydrate

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*Cupric Sulfate Pentahydrate*

*Potassium Iodide*

· **Hazard statements**

*Harmful if swallowed.*

*Causes serious eye damage.*

*May cause allergy or asthma symptoms or breathing difficulties if inhaled.*

*Suspected of causing genetic defects.*

*May cause cancer.*

*May damage fertility or the unborn child.*

*Causes damage to organs through prolonged or repeated exposure.*

· **Precautionary statements**

*Obtain special instructions before use.*

*Do not handle until all safety precautions have been read and understood.*

*Do not breathe dust/fume/gas/mist/vapors/spray.*

*Wash thoroughly after handling.*

*Do not eat, drink or smoke when using this product.*

*Wear protective gloves/protective clothing/eye protection/face protection.*

*[In case of inadequate ventilation] wear respiratory protection.*

*If swallowed: Call a poison center/doctor if you feel unwell.*

*Rinse mouth.*

*If inhaled: If breathing is difficult, 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.*

*Get medical advice/attention if you feel unwell.*

*If experiencing respiratory symptoms: Call a poison center/doctor.*

*Store locked up.*

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

· **National regulations:**

· **Information about limitation of use:**

*Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation.*

*Exceptions can be made by the authorities in certain cases.*

· **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:*

· **Date of preparation / last revision**

*Revision 0.0, 08-16-2024: Creation date for SDS. CMC/STN*

*08/16/2024 / -*

· **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)*

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*VOC: Volatile Organic Compounds (USA, EU)**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**Acute Toxicity - Oral 4: Acute toxicity – Category 4**Eye Damage 1: Serious eye damage/eye irritation – Category 1**Sensitization - Respiratory 1: Respiratory sensitisation – Category 1**Germ Cell Mutagenicity 2: Germ cell mutagenicity – Category 2**Carcinogenicity 1B: Carcinogenicity – Category 1B**Toxic to Reproduction 1B: Reproductive toxicity – Category 1B**Specific Target Organ Toxicity - Repeated Exposure 1: Specific target organ toxicity (repeated exposure) – Category 1*

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