

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/22/2024

Reviewed on 05/22/2024

1 Identification

- **Product identifier**
- **Trade name:** Nickel Nitrate, Reagent Grade, Crystal nickel(II) nitrate
- **Article number:** N3550
- **CAS Number:** 13478-00-7
- **EC number:** 236-068-5
- **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
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**



GHS03 Flame over circle

Oxidizing Solids 2

H272 May intensify fire; oxidizer.



GHS08 Health hazard

Sensitization - Respiratory 1

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

Carcinogenicity 1A

H350 May cause cancer.

Toxic to Reproduction 1A

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

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Acute Toxicity - Oral 4

H302 Harmful if swallowed.

Acute Toxicity - Inhalation 4

H332 Harmful if inhaled.

Skin Irritation 2

H315 Causes skin irritation.

· **Label elements**

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

· **Hazard pictograms**



· **Signal word** *Danger*

· **Hazard statements**

May intensify fire; oxidizer.

Harmful if swallowed or if inhaled.

Causes skin irritation.

Causes serious eye damage.

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

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.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Keep/Store away from clothing/combustible materials.

Take any precaution to avoid mixing with combustibles.

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

Wash thoroughly after handling.

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

Use only outdoors or in a well-ventilated area.

Contaminated work clothing must not be allowed out of the workplace.

Avoid release to the environment.

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

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

If on skin: Wash with plenty of water.

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).

Rinse mouth.

If skin irritation or rash occurs: Get medical advice/attention.

Take off contaminated clothing.

In case of fire: Use CO₂, powder or water spray to extinguish.

Collect spillage.

Store locked up.

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

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- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 3
Fire = 3
Reactivity = 0

The substance possesses oxidizing properties.

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



Health = *3
Fire = 3
Reactivity = 0

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

3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**
CAS: 13478-00-7 Nickel Nitrate, Reagent Grade, Crystal
- **Identification number(s)**
- **EC number: 236-068-5**

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. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. 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.
- **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** No further relevant information available.

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- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** 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.
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:** 1.5 mg/m³
 - **PAC-2:** 53 mg/m³
 - **PAC-3:** 320 mg/m³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
- **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:** Not required.
- **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 skin.

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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.

· **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

· **Body protection:** Protective work clothing

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:	Crystalline
Color:	Dark green
Odor:	Characteristic
Odor threshold:	Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

Melting point/Melting range:	56 °C (132.8 °F)
Boiling point/Boiling range:	Undetermined.

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Product is not flammable.

· **Decomposition temperature:** Not determined.

· **Ignition temperature:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

Lower: Not determined.

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Upper:	Not determined.
· Vapor pressure:	Not applicable.
· Density at 20 °C (68 °F):	2.05 g/cm ³ (17.10725 lbs/gal)
· Relative density	Not determined.
· Vapor density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with Water:	Not determined.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· 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:**

Oral	LD50	500 mg/kg (ATE)
Inhalative	LC50/4h	1.5 mg/l (ATE)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Strong irritant with the danger of severe eye injury.
- **Sensitization:** Sensitization possible through inhalation.
- **Additional toxicological information:**
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer) 1**
- **NTP (National Toxicology Program) K**
- **OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed.**

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.

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- **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:**

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.

14 Transport information

- **UN-Number**

- **DOT, IMDG, IATA**

UN2725

- **UN proper shipping name**

- **DOT**

- **IMDG, IATA**

Nickel nitrate

NICKEL NITRATE

- **Transport hazard class(es)**

- **DOT**



- **Class**

5.1 Oxidizing substances

- **Label**

5.1

- **IMDG**



- **Class**

5.1 Oxidizing substances

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· Label	5.1
· IATA	
	
· Class	5.1 Oxidizing substances
· Label	5.1
· Packing group	III
· DOT, IMDG, IATA	III
· Environmental hazards:	Environmentally hazardous substance, solid
· Marine pollutant:	No Symbol (fish and tree)
· Special precautions for user	Warning: Oxidizing substances
· Hazard identification number (Kemler code):	50
· EMS Number:	F-A,S-Q
· Stowage Category	A
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· UN "Model Regulation":	UN 2725 NICKEL NITRATE, 5.1, III

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**
- **Section 355 (extremely hazardous substances):** Substance is not listed.
- **Section 313 (Specific toxic chemical listings):** Substance is listed.
- **TSCA (Toxic Substances Control Act):**
- **Hazardous Air Pollutants** Substance is not listed.
- **Proposition 65**
- **Chemicals known to cause cancer:** Substance is listed.
- **Chemicals known to cause reproductive toxicity for females:** Substance is not listed.
- **Chemicals known to cause reproductive toxicity for males:** Substance is listed.
- **Chemicals known to cause developmental toxicity:** Substance is listed.
- **Carcinogenic categories**
- **EPA (Environmental Protection Agency)** Substance is not listed.
- **TLV (Threshold Limit Value)** Substance is not listed.
- **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is listed.
- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS03 GHS05 GHS07 GHS08

- **Signal word** *Danger*

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· **Hazard statements**

May intensify fire; oxidizer.
Harmful if swallowed or if inhaled.
Causes skin irritation.
Causes serious eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
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.
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Keep/Store away from clothing/combustible materials.
Take any precaution to avoid mixing with combustibles.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing must not be allowed out of the workplace.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Call a poison center/doctor if you feel unwell.
If on skin: Wash with plenty of water.
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).
Rinse mouth.
If skin irritation or rash occurs: Get medical advice/attention.
Take off contaminated clothing.
In case of fire: Use CO₂, powder or water spray to extinguish.
Collect spillage.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

· **Additional classification according to Decree on Hazardous Materials:**

Carcinogenic hazardous material group I (extremely dangerous).
Carcinogenic hazardous material group II (very dangerous).
Carcinogenic hazardous material group III (dangerous).

· **Information about limitation of use:**

Workers are not allowed to be exposed to this hazardous material. 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.

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- **Department issuing SDS:** Environment protection department.
- **Contact:**
Date of Preparation / Last Revision:
- **Date of preparation / last revision**
Revision 1.2, 05/22/2024: Reviewed SDS for accuracy. MH/STN
Creation date for SDS 10-29-2014. STN
05/22/2024
- **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
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
Oxidizing Solids 2: Oxidizing solids – Category 2
Acute Toxicity - Oral 4: Acute toxicity – Category 4
Skin Irritation 2: Skin corrosion/irritation – Category 2
Eye Damage 1: Serious eye damage/eye irritation – Category 1
Sensitization - Respiratory 1: Respiratory sensitisation – Category 1
Carcinogenicity 1A: Carcinogenicity – Category 1A
Toxic to Reproduction 1A: Reproductive toxicity – Category 1A
Specific Target Organ Toxicity - Repeated Exposure 1: Specific target organ toxicity (repeated exposure) – Category 1
- *** Data compared to the previous version altered.**

US