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|--|---|------------------------------|
| Nickel Nitrate Solution | | Pricing > |
| Nickel(II) Nitrate Hexahydrate | | Pricing > |
| Linear Formula | Ni(NO ₃) ₂ •6H ₂ O | |
| Pubchem CID | 61630 | |
| MDL Number | MFCD00149805 | |
| EC No. | 236-068-5 | |
| IUPAC Name | nickel(2+); dinitrate; hexahydrate | |
| Beilstein/Reaxys No. | N/A | |
| SMILES | [N+](=O)([O-])[O-].[N+](=O)([O-])[O-].O.O.O.O.O.O.[Ni+2] | |
| Inchl Identifier | InChI=1S/2NO3.Ni.6H2O/c2*2-1(3)4;;;;;;;;;h;;;6*1H2/q2*-1;+2;;;;;;;; | |
| Inchl Key | AOPCKOPZYFFEDA-UHFFFAOYSA-N | |
| Signal Word | Danger | |
| Hazard Statements | H272-H302-H315-H317-H318-H332-H334-H341-H350i-H360-H372-H410 | |
| Hazard Codes | O,T | |
| Risk Codes | 45-8-22-43 | |
| Safety Statements | 53-17-36/37-45 | |
| RTECS Number | QR7300000 | |
| Transport Information | UN 2725 5.1/PG 3 | |
| WGK Germany | 3 | |
| GHS Pictograms | GHS07 Exclamation Point | |
| |  | |
| | GHS03 Oxidizer | |
| |  | |
| | GHS08 Health Hazard | |
| |  | |
| | GHS05 Corrosive | |
| |  | |

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SAFETY DATA SHEET

Date Accessed: 04/16/2024

Date Revised: 01/15/2022

SECTION 1. IDENTIFICATION

Product Identifiers: All applicable American Elements product codes for CAS #13478-00-7

Relevant identified uses of the substance:

Scientific research and development

Supplier details:

American Elements
10884 Weyburn Ave.
Los Angeles, CA 90024
Tel: +1 310-208-0551
Fax: +1 310-208-0351

Emergency telephone number:

Domestic, North America +1 800-424-9300
International +1 703-527-3887

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture in
accordance with 29 CFR 1910 (OSHA HCS)

GHS03 Flame over circle

Ox. Sol. 2 H272 May intensify fire; oxidizer.

GHS08 Health hazard

Resp. Sens. 1 H334 May cause allergy or asthma
symptoms or breathing difficulties if inhaled.

Muta. 2 H341 Suspected of causing genetic defects.

Carc. 1B H350 May cause cancer.

Repr. 1A H360 May damage fertility or the unborn
child.

STOT RE 1 H372 Causes damage to the lung, the
kidneys and the liver through prolonged or repeated
exposure. Route of exposure: Inhalative.

GHS05 Corrosion

Eye Dam. 1 H318 Causes serious eye damage.

GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Skin Sens. 1 H317 May cause an allergic skin
reaction.

Hazards not otherwise classified No data available

GHS label elements, including precautionary
statements

Hazard pictograms



GHS03 GHS05 GHS07 GHS08

Signal word Danger

Hazard statements

H272 May intensify fire; oxidizer.

H302+H332 Harmful if swallowed or if inhaled.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H334 May cause allergy or asthma symptoms or

breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H360 May damage fertility or the unborn child.
H372 Causes damage to the lung, the kidneys and the liver through prolonged or repeated exposure.
Route of exposure: Inhalative.
Precautionary statements
P221 Take any precaution to avoid mixing with combustibles.
P273 Avoid release to the environment.
P201 Obtain special instructions before use.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
WHMIS classification
C - Oxidizing material
D2A - Very toxic material causing other toxic effects
Classification system
HMIS ratings (scale 0-4)
(Hazardous Materials Identification System)
HEALTH
FIRE
REACTIVITY
2
0
1
Health (acute effects) = 2
Flammability = 0
Physical Hazard = 1
Other hazards
Results of PBT and vPvB assessment
PBT: N/A
vPvB: N/A

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
CAS No. / Substance Name:
13478-00-7 Nickel(II) nitrate hexahydrate
Identification number(s):
EC number: 236-068-5
Index number: 028-012-00-1

SECTION 4. FIRST AID MEASURES

Description of first aid measures
If inhaled:

Supply patient with fresh air. If not breathing, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

In case of skin contact:

Immediately wash with soap and water; rinse thoroughly.

Seek immediate medical advice.

In case of eye contact:

Rinse opened eye for several minutes under running water. Consult a physician.

If swallowed:

Seek medical treatment.

Information for doctor

Most important symptoms and effects, both acute and delayed:

No data available

Indication of any immediate medical attention and special treatment needed:

No data available

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing agents Product is not flammable. Use fire-fighting measures that suit the surrounding fire.

For safety reasons unsuitable extinguishing agents

Halocarbon extinguisher

Special hazards arising from the substance or mixture

This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

If this product is involved in a fire, the following can be released:

Nitrogen oxides (NO_x)

Toxic metal oxide fume

Advice for firefighters

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Environmental precautions: Do not allow material to be released to the environment without official

permits.

Methods and materials for containment and cleanup:

Dispose of contaminated material as waste according to section 13.

Ensure adequate ventilation.

Prevention of secondary hazards:

Acts as an oxidizing agent on organic materials such as wood, paper and fats

Keep away from combustible material.

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.

SECTION 7. HANDLING AND STORAGE

Handling

Precautions for safe handling

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Open and handle container with care.

Information about protection against explosions and fires:

Substance/product can reduce the ignition temperature of flammable substances.

This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility:

Store away from flammable substances.

Store away from reducing agents.

Do not store with organic materials.

Store away from metal powders.

Store away from water/moisture.

Further information about storage conditions:

This product is hygroscopic.

Store under dry inert gas.

Keep container tightly sealed.

Store in cool, dry conditions in well-sealed containers.

Protect from humidity and water.

Specific end use(s) No data available

SECTION 8. EXPOSURE

CONTROLS/PERSONAL PROTECTION

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters

Components with limit values that require monitoring at the workplace:

13478-00-7 Nickel(II) nitrate hexahydrate (100.0%)

PEL (USA) Long-term value: 1 mg/m³
as Ni

TLV (USA) Long-term value: 0.1 mg/m³
as Ni

Additional information: No data

Exposure controls

Personal protective equipment

Follow typical protective and hygienic practices for handling chemicals.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

Breathing equipment: Use suitable respirator when high concentrations are present.

Recommended filter device for short term use:

Use a respirator with type P100 (USA) or P3 (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if airpurifying

respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

Protection of hands:

Impervious gloves

Inspect gloves prior to use.

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Material of gloves Nitrile rubber, NBR

Penetration time of glove material (in minutes) No data available

Eye protection: Tightly sealed goggles

Body protection: Protective work clothing.

SECTION 9. PHYSICAL AND CHEMICAL

PROPERTIES

Information on basic physical and chemical properties

Appearance:

Form: Flakes

Color: Green

Odor: Odorless

Odor threshold: No data available.

pH: N/A

Melting point/Melting range: 56.7 °C (134 °F)

Boiling point/Boiling range: 137 °C (279 °F)

Sublimation temperature / start: No data available

Flash point: N/A

Flammability (solid, gas) Contact with combustible material may cause fire.

Ignition temperature: No data available

Decomposition temperature: No data available

Autoignition: No data available.

Danger of explosion: No data available.

Explosion limits:

Lower: No data available

Upper: No data available

Vapor pressure: N/A

Density at 20 °C (68 °F): 2.05 g/cm³ (17.107 lbs/gal)

Relative density No data available.

Vapor density N/A

Evaporation rate N/A

Solubility in / Miscibility with

Water at 20 °C (68 °F): 2380 g/l

Partition coefficient (n-octanol/water): No data available.

Viscosity:

Dynamic: N/A

Kinematic: N/A

Other information No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity May intensify fire; oxidizer.

Chemical stability Stable under recommended storage conditions.

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Possibility of hazardous reactions

Reacts with reducing agents

Reacts with flammable substances

Conditions to avoid No data available

Incompatible materials:

Reducing agents

Bases

Flammable substances

Water/moisture

Organic materials
Metal powders
Hazardous decomposition products:
Nitrogen oxides
Toxic metal oxide fume

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity:

Harmful if inhaled.

Harmful if swallowed.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.

LD/LC50 values that are relevant for classification:

Oral LD50 1620 mg/kg (rat)

Skin irritation or corrosion: Causes skin irritation.

Eye irritation or corrosion: Causes serious eye damage.

Sensitization:

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

May cause an allergic skin reaction.

Germ cell mutagenicity: Suspected of causing genetic defects.

Carcinogenicity:

May cause cancer.

IARC-1: Carcinogenic to humans: sufficient evidence of carcinogenicity.

NTP-K: Known to be carcinogenic: sufficient evidence from human studies.

Reproductive toxicity: May damage fertility or the unborn child.

Specific target organ system toxicity - repeated exposure:

Causes damage to the lung, the kidneys and the liver through prolonged or repeated exposure. Route of exposure: Inhalative.

Specific target organ system toxicity - single exposure: No effects known.

Aspiration hazard: No effects known.

Subacute to chronic toxicity: No effects known.

Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Aquatic toxicity: No data available
Persistence and degradability No data available
Bioaccumulative potential No data available
Mobility in soil No data available
Ecotoxical effects:
Remark: Very toxic for aquatic organisms
Additional ecological information:
Do not allow material to be released to the environment without official permits.
Do not allow product to reach groundwater, water courses, or sewage systems, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
May cause long lasting harmful effects to aquatic life.
Avoid transfer into the environment.
Very toxic for aquatic organisms
Results of PBT and vPvB assessment
PBT: N/A
vPvB: N/A
Other adverse effects No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Recommendation Consult official regulations to ensure proper disposal.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

SECTION 14. TRANSPORT INFORMATION

UN-Number
DOT, IMDG, IATA UN2725
UN proper shipping name
DOT RQ Nickel nitrate
IMDG NICKEL NITRATE, MARINE POLLUTANT
IATA NICKEL NITRATE
Transport hazard class(es)
DOT
Class 5.1 Oxidising substances.
Label 5.1
Class 5.1 (O2) Oxidizing substances
Label 5.1
IMDG
Class 5.1 Oxidising substances.
Label 5.1
IATA
Class 5.1 Oxidising substances.

Label 5.1
Packing group
DOT, IMDG, IATA III
Environmental hazards: Environmentally hazardous
substance, solid; Marine Pollutant
Marine pollutant (IMDG): Symbol (fish and tree)
Special precautions for user Warning: Oxidizing
substances
Transport in bulk according to Annex II of
MARPOL73/78 and the IBC Code N/A
Transport/Additional information:
DOT
Hazardous substance: 100 lbs, 45.4 kg
Marine Pollutant (DOT): No
Remarks: Special marking with the symbol (fish and
tree).
UN "Model Regulation": UN2725, Nickel nitrate, 5.1,
III

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental
regulations/legislation specific for the substance or
mixture
GHS label elements, including precautionary
statements
Hazard pictograms
GHS03 GHS05 GHS07 GHS08
Signal word Danger
Hazard statements
H272 May intensify fire; oxidizer.
H302+H332 Harmful if swallowed or if inhaled.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H334 May cause allergy or asthma symptoms or
breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H360 May damage fertility or the unborn child.
H372 Causes damage to the lung, the kidneys and
the liver through prolonged or repeated exposure.
Route of exposure: Inhalative.
Precautionary statements
P221 Take any precaution to avoid mixing with
combustibles.
P273 Avoid release to the environment.
P201 Obtain special instructions before use.
P308+P313 IF exposed or concerned: Get medical
advice/attention.
P501 Dispose of contents/container in accordance
with local/regional/national/international regulations.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings)

13478-00-7 Nickel(II) nitrate hexahydrate

California Proposition 65

Prop 65 - Chemicals known to cause cancer

13478-00-7 Nickel(II) nitrate hexahydrate

Prop 65 - Developmental toxicity Substance is not listed.

Prop 65 - Developmental toxicity, female Substance is not listed.

Prop 65 - Developmental toxicity, male Substance is not listed.

Information about limitation of use: For use only by technically qualified individuals.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.

Substance is not listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.
