

# SAFETY DATA SHEET

## Nickel Nitrate Solution

Version 5.1

US

SDS Number: 300000002050

Revision Date: 04/11/2022

### SECTION 1. IDENTIFICATION

Product name : Nickel Nitrate Solution

Product code : 300000002050

#### **Manufacturer or supplier's details**

Company name of supplier :

Address :

E-mail address of person responsible for the SDS :

#### **Poison Center**

Telephone : +1 800 222 1222

Hours of operation : 24HRS

#### **Supplier**

Emergency telephone number : For transport in Europe, Central- and South America, Israel and Africa (Non-Arabic speaking countries):(+32) 3 213 15 70  
For transport in the Middle East (Israel excluded) & Arabic speaking Africa:(+32) 3 213 33 79  
For transport in the USA and Canada:(+1)-800 424 9300  
For transport in Asian and the Pacific (China excluded):(+65) 62 64 78 36  
For transport in China:(+86) 400 120 60 11

Hours of operation : This telephone number is available 24 hours per day, 7 days per week.

#### **Recommended use of the chemical and restrictions on use**

Recommended use : Catalyst  
Water treatment chemical

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### SECTION 2. HAZARDS IDENTIFICATION

#### **GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

Acute toxicity (Oral) : Category 4

Skin irritation : Category 2

Serious eye damage : Category 1

Respiratory sensitisation : Category 1

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Skin sensitisation	:	Category 1
Germ cell mutagenicity	:	Category 2
Carcinogenicity (Inhalation)	:	Category 1A
Reproductive toxicity	:	Category 1B
Specific target organ toxicity - repeated exposure	:	Category 1
Short-term (acute) aquatic hazard	:	Category 1
Long-term (chronic) aquatic hazard	:	Category 1

### GHS label elements

Hazard pictograms



Signal word : Danger

Hazard statements : H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H318 Causes serious eye damage.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H341 Suspected of causing genetic defects.  
H350 May cause cancer by inhalation.  
H360FD May damage fertility. May damage the unborn child.  
H372 Causes damage to organs through prolonged or repeated exposure.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P260 Do not breathe mist or vapours.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P272 Contaminated work clothing must not be allowed out of the workplace.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P285 In case of inadequate ventilation wear respiratory protection.

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### Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P341 IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.

P305 + P351 + P338 + P310 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.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before reuse.

P391 Collect spillage.

### Storage:

P405 Store locked up.

### Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

### Additional Labelling

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 47 %

### Other hazards

None known.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

Chemical name	CAS-No.	Concentration (% w/w)
nickel dinitrate	13138-45-9	<= 47
cobalt dinitrate	10141-05-6	<= 0.15

## SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.  
Consult a physician.  
Show this safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.

If inhaled : Call a physician or poison control centre immediately.  
Move to fresh air.  
If unconscious, place in recovery position and get medical attention immediately.

In case of skin contact : If on skin, rinse well with water.

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- If on clothes, remove clothes.  
If skin irritation persists, call a physician.  
Wash contaminated clothing before reuse.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.  
Remove contact lenses.  
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
Continue rinsing eyes during transport to hospital.  
Protect unharmed eye.  
Keep eye wide open while rinsing.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.  
Keep respiratory tract clear.  
Do NOT induce vomiting.  
Do not give milk or alcoholic beverages.  
Never give anything by mouth to an unconscious person.  
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Skin contact may provoke the following symptoms:  
Allergic reactions  
Redness  
Inhalation may provoke the following symptoms:  
Shortness of breath  
Asthma  
Ingestion may provoke the following symptoms:  
Stomach/intestinal disorders  
In case of eye contact  
Excessive lachrymation

### SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during fire-fighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Nickel compounds
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

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- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.  
Ensure adequate ventilation.  
Evacuate personnel to safe areas.
- Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Neutralize with chalk, alkali solution or ammonia.  
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

### SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Avoid formation of aerosol.  
Do not breathe vapours/dust.  
Avoid exposure - obtain special instructions before use.  
Avoid contact with skin and eyes.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
Provide sufficient air exchange and/or exhaust in work rooms.  
Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Electrical installations / working materials must comply with the technological safety standards.  
To maintain product quality, do not store in heat or direct sunlight.
- Materials to avoid : Keep away from strong bases.
- Further information on storage stability : Keep in a dry place.  
No decomposition if stored and applied as directed.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
nickel dinitrate	13138-45-9	TWA	1 mg/m <sup>3</sup> (Nickel)	OSHA Z-1

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		TWA (Inhalable particulate matter)	0.1 mg/m <sup>3</sup> (Nickel)	ACGIH
		TWA	0.1 mg/m <sup>3</sup> (Nickel)	OSHA P0
		TWA	0.015 mg/m <sup>3</sup> (Nickel)	NIOSH REL
cobalt dinitrate	10141-05-6	TWA (Inhalable particulate matter)	0.02 mg/m <sup>3</sup> (Cobalt)	ACGIH

### Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
cobalt dinitrate	10141-05-6	Cobalt (Cobalt)	Urine	End of shift at end of work-week	15 µg/l	ACGIH BEI
nickel dinitrate	13138-45-9	Nickel (Nickel)	Urine	End of shift at end of work-week	5 µg/l	ACGIH BEI
		Nickel (Nickel)	Urine	End of shift at end of work-week	30 µg/l	ACGIH BEI

**Engineering measures** : Handle only in a place equipped with local exhaust (or other appropriate exhaust).

### Personal protective equipment

**Respiratory protection** : In the case of dust or aerosol formation use respirator with an approved filter.  
FFP3 (EN149:2001+A1:2009)

In the case of vapour formation use a respirator with an approved filter.  
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

### Hand protection

**Material** : PVC  
**Break through time** : < 240 min  
**Glove thickness** : 1.1 mm  
**Glove length** : Long sleeve gloves

### Eye protection

: Wear face-shield and protective suit for abnormal processing problems.  
Wear safety glasses with side shields or goggles.

### Skin and body protection

: Complete suit protecting against chemicals

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acid-resistant protective clothing  
Impervious clothing  
Footwear protecting against chemicals

Hygiene measures : Avoid contact with skin, eyes and clothing.  
General industrial hygiene practice.  
Wash hands before breaks and immediately after handling the product.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Aqueous solution

Colour : green

Odour : odourless

pH : 2

Boiling point/boiling range : 210 °F / 99 °C

Flash point : does not flash

Flammability (liquids) : The product is not flammable.

Density : 1.4 - 1.55 g/cm<sup>3</sup> (68 - 73 °F / 20 - 23 °C)

Solubility(ies)  
Water solubility : completely soluble

### SECTION 10. STABILITY AND REACTIVITY

Reactivity : Stable at normal ambient temperature and pressure.

Chemical stability : No decomposition if stored and applied as directed.

Possibility of hazardous reactions : Stable under recommended storage conditions.

Conditions to avoid : None known.  
Extremes of temperature and direct sunlight.

Incompatible materials : Strong bases  
Alkali metals  
Alkaline earth metals  
Metals

Hazardous decomposition products : No decomposition if stored normally.

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### SECTION 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

##### Product:

Acute oral toxicity : Acute toxicity estimate: 770 mg/kg  
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: 5.28 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Calculation method

Acute dermal toxicity : Remarks: No data available

##### Components:

##### **nickel dinitrate:**

Acute oral toxicity : LD50 (Rat): 361.9 mg/kg  
Method: OECD Test Guideline 423  
GLP: yes  
Remarks: Based on read across from structural related substance

Acute inhalation toxicity : LC50 (Rat): 2.48 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Remarks: Based on read across from structural related substance  
nickel sulphate

Acute dermal toxicity : Assessment: No data available  
Remarks: data waiving in REACH dossier

##### **cobalt dinitrate:**

Acute oral toxicity : LD50 (Rat, male and female): 691 mg/kg  
Method: OECD Test Guideline 401

Acute inhalation toxicity : Assessment: No data available  
Remarks: data waiving in REACH dossier

Acute dermal toxicity : (Rat, male and female): > 5,000 mg/kg  
Method: OECD Test Guideline 402  
Remarks: Based on read across from structural related substance  
Cobalt acetylacetonate

#### Skin corrosion/irritation

##### Components:

##### **nickel dinitrate:**

Method : OECD Test Guideline 404



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Result : Skin irritation

### **cobalt dinitrate:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation  
GLP : yes

### **Serious eye damage/eye irritation**

#### **Product:**

Result : Irreversible effects on the eye

#### **Components:**

##### **nickel dinitrate:**

Result : Irreversible effects on the eye  
Method : OECD Test Guideline 405

##### **cobalt dinitrate:**

Species : Rabbit  
Result : Corrosive  
Method : OECD Test Guideline 405  
GLP : yes

### **Respiratory or skin sensitisation**

#### **Components:**

##### **nickel dinitrate:**

Species : Humans  
Result : Probability or evidence of skin sensitisation in humans

Species : Humans  
Result : May cause sensitisation by inhalation.  
Remarks : Based on read across from structural related substance

##### **cobalt dinitrate:**

Exposure routes : Dermal  
Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : The product is a skin sensitiser, sub-category 1A.  
Remarks : Based on read across from structural related substance  
Cobalt sulphate

Result : The product is a respiratory sensitiser, sub-category 1B.

### **Germ cell mutagenicity**

#### **Product:**

Genotoxicity in vitro : Remarks: No data available

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### Components:

#### **nickel dinitrate:**

Genotoxicity in vitro : Test Type: Ames test  
Result: negative  
  
Test system: Chinese hamster ovary cells  
Result: positive

Germ cell mutagenicity - Assessment : In vitro tests showed mutagenic effects

#### **cobalt dinitrate:**

Genotoxicity in vitro : Test Type: Ames test  
Test system: Bacteria  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative  
Remarks: Based on read across from structural related substance  
  
Test Type: Chromosome aberration test in vitro  
Test system: Human lymphocytes  
Metabolic activation: no metabolic activation  
Method: OECD Test Guideline 473  
Result: Conflicting results have been seen in different studies.  
Remarks: Based on read across from structural related substance

Genotoxicity in vivo : Test Type: in vivo assay  
Species: Humans  
Application Route: inhalation (dust/mist/fume)  
Exposure time: 8h/d  
Dose: 20µg Co/m<sup>3</sup>  
Result: negative  
Remarks: Based on read across from structural related substance  
No significant adverse effects were reported

Germ cell mutagenicity - Assessment : In vitro tests showed mutagenic effects

### **Carcinogenicity**

#### Product:

Remarks : No data available

### Components:

#### **nickel dinitrate:**

Species : Rat, male and female  
Application Route : Oral

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Exposure time : 104 weeks  
Dose : 10; 30; 50 mg/kg body weight  
Frequency of Treatment : daily  
NOAEL : 11 mg/kg bw/day  
Method : OECD Test Guideline 451  
Result : negative  
GLP : yes  
Remarks : unit expressed as mg metal/kg  
Based on read across from structural related substance

Carcinogenicity - Assessment : Positive evidence from human epidemiological studies (inhalation)

### **cobalt dinitrate:**

Species : Rat, male and female  
Application Route : Inhalation  
: 1.24 mg/m<sup>3</sup>  
Method : OECD Test Guideline 451  
Result : positive  
GLP : yes  
Remarks : Based on read across from structural related substance  
Cobalt

Carcinogenicity - Assessment : Sufficient evidence of carcinogenicity in inhalation studies with animals

**IARC**

Group 1: Carcinogenic to humans nickel dinitrate (Nickel compounds)	13138-45-9
Group 2B: Possibly carcinogenic to humans cobalt dinitrate (Cobalt sulfate and other soluble cobalt(II) salts)	10141-05-6
Group 2B: Possibly carcinogenic to humans cobalt dinitrate (Cobalt and cobalt compounds)	10141-05-6

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP**

Reasonably anticipated to be a human carcinogen cobalt dinitrate (Cobalt and Cobalt Compounds That Release Cobalt Ions)	10141-05-6
Known to be human carcinogen nickel dinitrate (Nickel Compounds)	13138-45-9

### **Reproductive toxicity**

#### **Product:**

Effects on fertility : Remarks: No data available

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### Components:

#### **nickel dinitrate:**

Effects on fertility

: Species: Rat  
Application Route: Oral  
Dose: 0; 1; 2,5; 5;10 milligram per kilogram  
General Toxicity - Parent: NOAEL: 10 mg/kg body weight  
General Toxicity F1: NOAEL: 10 mg/kg body weight  
Method: OECD Test Guideline 416  
Remarks: Based on read across from structural related substance

Species: Rat  
Application Route: inhalation (dust/mist/fume)  
Duration of Single Treatment: 13 Weeks  
General Toxicity - Parent: NOAEL: 0.45 mg/m<sup>3</sup>  
Remarks: unit expressed as mg metal/m<sup>3</sup>  
Based on read across from structural related substance

Reproductive toxicity - Assessment

: Clear evidence of adverse effects on development, based on animal experiments.

#### **cobalt dinitrate:**

Effects on fertility

: Species: Rat, male and female  
Application Route: Oral  
Fertility: NOAEL Mating/Fertility: 30 mg/kg body weight  
Remarks: Based on read across from structural related substance  
cobalt dichloride hexahydrate

Test Type: Pre-/postnatal development  
Species: Rat  
Application Route: Oral  
General Toxicity - Parent: NOAEL: 25 mg/kg body weight  
GLP: yes  
Remarks: Based on read across from structural related substance  
cobalt dichloride hexahydrate

Reproductive toxicity - Assessment

: Clear evidence of adverse effects on sexual function and fertility, based on animal experiments.

### **STOT - single exposure**

#### Product:

Remarks

: No data available

### **STOT - repeated exposure**

#### Product:

Remarks

: No data available

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### Components:

#### **nickel dinitrate:**

Assessment : Causes damage to organs through prolonged or repeated exposure.

### **Repeated dose toxicity**

### Components:

#### **nickel dinitrate:**

Species : Rat, male and female  
NOAEL : 2.2 mg/kg  
LOAEL : 6.7 mg/kg  
Application Route : Oral  
Exposure time : 104 weeks  
Dose : 10; 30; 50  
Method : OECD Test Guideline 451  
GLP : yes  
Remarks : unit expressed as mg metal/kg  
Based on read across from structural related substance

Species : Rat, male and female  
NOAEL : 0,027 mg/m<sup>3</sup>  
LOAEL : 0,056 mg/m<sup>3</sup>  
Application Route : Inhalation  
Exposure time : 104 weeks  
Dose : 0; 0,125; 0,25; 0,5; 1.0  
Method : OECD Test Guideline 453  
GLP : yes  
Target Organs : Lungs  
Remarks : unit expressed as mg metal/kg  
Based on read across from structural related substance

#### **cobalt dinitrate:**

Species : Rat, male and female  
NOAEL : 3 mg/kg  
Application Route : Oral  
Method : OECD Test Guideline 408  
GLP : yes  
Remarks : Based on read across from structural related substance  
cobalt dichloride hexahydrate

Species : Mouse, male and female  
LOAEL : 0,61 mg/m<sup>3</sup>  
Application Route : Inhalation  
Method : OECD Test Guideline 413  
GLP : yes  
Remarks : Based on read across from structural related substance  
Cobalt

Remarks : data waiving in REACH dossier

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### Further information

#### Product:

Remarks : No data available

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Components:

##### **nickel dinitrate:**

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 15.3 mg/l  
Exposure time: 96 h  
Remarks: unit expressed as mg metal/l  
Fresh water  
Based on read across from structural related substance  
Nickel chloride
- Toxicity to daphnia and other aquatic invertebrates : LC50 (Ceriodaphnia dubia (water flea)): 0.013 mg/l  
Exposure time: 48 h  
Remarks: unit expressed as mg metal/l  
Fresh water
- Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (algae)): > 0.0815 - < 0.148 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Fresh water  
Based on read across from structural related substance
- EC50 (Pseudokirchneriella subcapitata (algae)): > 0.0253 - < 0.365 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Fresh water  
Based on read across from structural related substance
- NOEC (Desmodesmus sp.): 0.0225 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: unit expressed as mg metal/l  
Fresh water  
Based on read across from structural related substance
- M-Factor (Acute aquatic toxicity) : 10
- Toxicity to fish (Chronic toxicity) : NOEC (Danio rerio (zebra fish)): 0.04 mg/l  
Exposure time: 8 days  
Remarks: Fresh water
- NOEC (Pimephales promelas (fathead minnow)): 0.057 mg/l  
Exposure time: 32 days

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- Analytical monitoring: yes  
Remarks: Fresh water
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.04 mg/l  
Exposure time: 42 days  
Remarks: Fresh water  
Based on read across from structural related substance Nickel chloride
- NOEC (Daphnia magna (Water flea)): 0.09 mg/l  
Exposure time: 21 DAYS  
Remarks: Fresh water  
Based on read across from structural related substance Nickel acetate
- M-Factor (Chronic aquatic toxicity) : 1
- Toxicity to microorganisms : EC50: 33 mg/l  
Exposure time: 30 min  
Method: ISO 8192  
Remarks: unit expressed as mg metal/l  
Based on read across from structural related substance
- Toxicity to soil dwelling organisms : NOEC (Eisenia fetida (earthworms)): 180 mg/kg  
Exposure time: 21 days  
Remarks: unit expressed as mg metal/kg  
Based on read across from structural related substance
- NOEC: 320 mg/kg  
Exposure time: 28 days  
Remarks: unit expressed as mg metal/kg  
Based on read across from structural related substance
- Plant toxicity : NOEC: 88 mg/kg  
Exposure time: 60 d  
Species: Avena sativa (oats)  
Remarks: unit expressed as mg metal/kg  
Based on read across from structural related substance
- EC10: 34 mg/kg  
Exposure time: 63 d  
Species: Lactuca sativa (lettuce)  
Remarks: unit expressed as mg metal/kg  
Based on read across from structural related substance
- Sediment toxicity : EC10 (Chironomus riparius): 762 mg/kg  
Remarks: unit expressed as mg metal/kg  
Fresh water  
Based on read across from structural related substance
- EC10 (Tubifex tubifex): 1103 mg/kg  
Remarks: unit expressed as mg metal/kg  
Fresh water  
Based on read across from structural related substance

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EC10 (Hyalella azteca): 82 mg/kg  
Remarks: unit expressed as mg metal/kg  
Fresh water  
Based on read across from structural related substance

Toxicity to terrestrial organisms : NOEC (Anas platyrhynchos (Mallard duck)): 800  
Exposure time: 90 days  
Remarks: Based on read across from structural related substance

### **cobalt dinitrate:**

Toxicity to daphnia and other aquatic invertebrates : LC50 (Ceriodaphnia dubia (water flea)): 2.81 mg/l  
Exposure time: 48 h  
Test Type: static test  
GLP: no  
Remarks: Based on read across from structural related substance  
cobalt dichloride hexahydrate  
Fresh water

Toxicity to algae/aquatic plants : EC50 (Lemna minor (duckweed)): 0.2792 mg/l  
Exposure time: 7 DAYS  
Remarks: Fresh water

EC10 (Lemna minor (duckweed)): 0.0152 mg/l  
Exposure time: 7 DAYS  
Remarks: Fresh water

M-Factor (Acute aquatic toxicity) : 10

Toxicity to fish (Chronic toxicity) : EC10 (Pimephales promelas (fathead minnow)): 0.35 mg/l  
Exposure time: 34 d  
Remarks: Based on read across from structural related substance  
cobalt dichloride hexahydrate  
Fresh water

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10 (Mysidopsis bahia (opossum shrimp)): 1.94 mg/l  
Exposure time: 28 d  
Remarks: Based on read across from structural related substance  
cobalt dichloride hexahydrate  
Marine water

M-Factor (Chronic aquatic toxicity) : 10

### **Ecotoxicology Assessment**

Acute aquatic toxicity : Very toxic to aquatic life.



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### Persistence and degradability

No data available

### Bioaccumulative potential

#### Components:

##### **nickel dinitrate:**

Bioaccumulation : Bioconcentration factor (BCF): > 1,631  
Method: field study  
Remarks: terrestrial environment  
Based on read across from structural related substance

Bioconcentration factor (BCF): 270  
Method: field study  
Remarks: Fresh water  
Based on read across from structural related substance

Partition coefficient: n-octanol/water : Remarks: data waiving in REACH dossier

##### **cobalt dinitrate:**

Bioaccumulation : Bioconcentration factor (BCF): 180 - 4,000

### Mobility in soil

No data available

### Other adverse effects

#### Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances  
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : Very toxic to aquatic life with long lasting effects.

#### Components:

##### **nickel dinitrate:**

Results of PBT and vPvB assessment : not applicable for inorganic substances

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## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.  
Do not contaminate ponds, waterways or ditches with chemi-

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cal or used container.  
Send to a licensed waste management company.  
Dispose of as hazardous waste in compliance with local and national regulations.

Contaminated packaging : Empty remaining contents.  
Dispose of contaminated packaging as if unused product.  
Do not re-use empty containers.

### SECTION 14. TRANSPORT INFORMATION

#### International Regulations

##### UNRTDG

UN number : UN 1760  
Proper shipping name : CORROSIVE LIQUID, N.O.S.  
(nickel(ii) nitrate)  
Class : 8  
Packing group : II  
Labels : 8



Marine pollutant : yes

##### IATA-DGR

UN/ID No. : UN 1760  
Proper shipping name : Corrosive liquid, n.o.s.  
(nickel(ii) nitrate)  
Class : 8  
Packing group : II  
Labels : Corrosive



Packing instruction (cargo aircraft) : 855  
Maximum quantity : 30.00 L  
Packing instruction (passenger aircraft) : 851  
Maximum quantity : 1.00 L  
Environmentally hazardous : yes

##### IMDG-Code

UN number : UN 1760  
Proper shipping name : CORROSIVE LIQUID, N.O.S.  
(nickel(ii) nitrate)  
Class : 8  
Packing group : II  
Labels : 8

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EmS Code : F-A, S-B  
Marine pollutant : yes

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

### National Regulations

#### 49 CFR

UN/ID/NA number : UN 1760  
Proper shipping name : Corrosive liquids, n.o.s.  
(nickel(ii) nitrate)  
Class : 8  
Packing group : II  
Labels : CORROSIVE



ERG Code : 154  
Marine pollutant : yes

### Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

## SECTION 15. REGULATORY INFORMATION

### CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Acute toxicity (any route of exposure)  
Respiratory or skin sensitisation  
Germ cell mutagenicity  
Carcinogenicity  
Specific target organ toxicity (single or repeated exposure)  
Serious eye damage or eye irritation  
Reproductive toxicity  
Skin corrosion or irritation

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

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nickel dinitrate	13138-45-9	47 %
cobalt dinitrate	10141-05-6	0.15 %

### Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

nickel dinitrate	13138-45-9	47 %
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This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

### Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

nickel dinitrate	13138-45-9	47 %
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This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307

nickel dinitrate	13138-45-9	47 %
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This product does not contain any priority pollutants related to the U.S. Clean Water Act

### US State Regulations

#### Massachusetts Right To Know

nickel dinitrate	13138-45-9
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#### Pennsylvania Right To Know

water	7732-18-5
nickel dinitrate	13138-45-9

#### Maine Chemicals of High Concern

nickel dinitrate	13138-45-9
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#### Vermont Chemicals of High Concern

cobalt dinitrate	10141-05-6
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#### Washington Chemicals of High Concern

cobalt dinitrate	10141-05-6
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#### California Prop. 65

WARNING: This product can expose you to chemicals including nickel dinitrate, which is/are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

#### California List of Hazardous Substances

nickel dinitrate	13138-45-9
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#### California Permissible Exposure Limits for Chemical Contaminants

nickel dinitrate	13138-45-9
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#### The components of this product are reported in the following inventories:

TSCA : All substances listed as active on the TSCA inventory

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AICC	:	On the inventory, or in compliance with the inventory
DSL	:	All components of this product are on the Canadian DSL
ENCS	:	On the inventory, or in compliance with the inventory
ISHL	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
NZIoC	:	Not in compliance with the inventory
CH INV	:	On the inventory, or in compliance with the inventory
TCSI	:	On the inventory, or in compliance with the inventory
TECI	:	On the inventory, or in compliance with the inventory

### TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

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## SECTION 16. OTHER INFORMATION

### Further information

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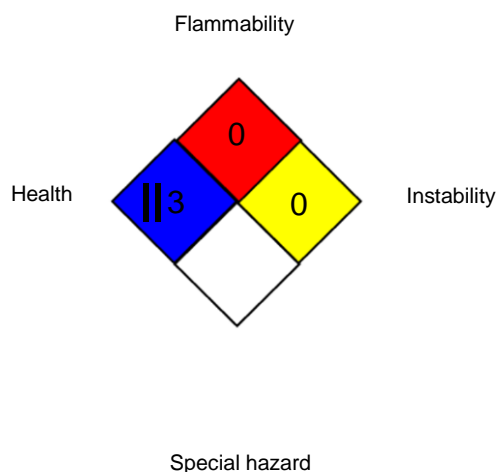
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### NFPA 704:



### HMIS® IV:

HEALTH	*	3
FLAMMABILITY		0
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

### Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	:	ACGIH - Biological Exposure Indices (BEI)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
OSHA P0 / TWA	:	8-hour time weighted average
OSHA Z-1 / TWA	:	8-hour time weighted average

AIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level;

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NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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