

**Material Safety Data Sheet**

acc. to OSHA and ANSI

Printing date 05/24/2010

Reviewed on 05/21/2010

**1 Identification of substance:****Product details:****Product name:** Nickel 1,1,1-trifluoro 2,4-pentanedionate dihydrate**Stock number:** 39449**Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company  
 Johnson Matthey Catalog Company, Inc.  
 30 Bond Street  
 Ward Hill, MA 01835-8099  
 Emergency Phone: (978) 521-6300  
 CHEMTREC: (800) 424-9300  
 Web Site: www.alfa.com

**Information Department:** Health, Safety and Environmental Department**Emergency information:**

During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

**2 Composition/Data on components:****Chemical characterization:****Description: (CAS#)**

Nickel 1,1,1-trifluoro 2,4-pentanedionate dihydrate (CAS#  
 14324-83-5)

**3 Hazards identification****Hazard description:**

T Toxic

**Information pertaining to particular dangers for man and environment**

R 49 May cause cancer by inhalation.

R 36/38 Irritating to eyes and skin.

R 43 May cause sensitization by skin contact.

**Classification system****HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

|            |    |
|------------|----|
| HEALTH     | *2 |
| FIRE       | 1  |
| REACTIVITY | 1  |

Health (acute effects) = \*2

Flammability = 1

Reactivity = 1

**GHS label elements****Danger**

3.6/1A - May cause cancer.

**Warning**

3.1/4 - Harmful if swallowed.

3.2/2 - Causes skin irritation.

3.3/2A - Causes serious eye irritation.

3.4/1 - May cause an allergic skin reaction.

**Prevention:**

Obtain special instructions before use.

**Response:**

IF exposed or concerned: Get medical advice/attention.

**4 First aid measures****After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.  
 Seek immediate medical advice.

**After skin contact**

Immediately wash with water and soap and rinse thoroughly.  
 Seek immediate medical advice.

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**After eye contact**

Rinse opened eye for several minutes under running water. Then consult a doctor.

**After swallowing** Seek immediate medical advice.**5 Fire fighting measures****Suitable extinguishing agents**

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**Special hazards caused by the material, its products of combustion or resulting gases:**

In case of fire, the following can be released:

Hydrogen fluoride (HF)

Carbon monoxide and carbon dioxide

Toxic metal oxide fume

**Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

**6 Accidental release measures****Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

**Measures for environmental protection:**

Do not allow material to be released to the environment without proper governmental permits.

**Measures for cleaning/collecting:**

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

**Additional information:**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

**7 Handling and storage****Handling****Information for safe handling:**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

**Information about protection against explosions and fires:** No special measures required.**Storage****Requirements to be met by storerooms and receptacles:** No special requirements.**Information about storage in one common storage facility:** Store away from oxidizing agents.**Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

**8 Exposure controls and 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.

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

Nickel and inorganic compounds, as Ni

mg/m<sup>3</sup>

ACGIH TLV

1.5, A5-inhalable particulate (metal)

0.2, A1-inhalable particulate (insoluble compounds)

0.1, A4-inhalable particulate (soluble compounds)

Austria

Carcinogen

Denmark TWA

0.5

Finland TWA

0.1 (skin) Carcinogen

France VME

1; C3-Carcinogen

Germany

Carcinogen

Hungary

0.005-STEEL; Carcinogen (insoluble compounds)

Japan

1; 2B-Carcinogen

Korea TLV

1.5

Netherlands MAC-TGG

1; Carcinogen

1 (insoluble compounds)

Norway TWA

0.05

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Poland TWA 0.25  
 Russia 0.05-STEL  
 Sweden NGV 0.5 (dust)  
 Switzerland MAK-W 0.5; Carcinogen  
 United Kingdom TWA 0.1  
 USA PEL 1

**Additional information:** No data**Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

**Breathing equipment:** Use suitable respirator when high concentrations are present.**Protection of hands:** Impervious gloves**Eye protection:** Safety glasses**Body protection:** Protective work clothing.**9 Physical and chemical properties:****General Information**

**Form:** Powder  
**Color:** Green  
**Odor:** Odorless

**Change in condition**

**Melting point/Melting range:** Not determined  
**Boiling point/Boiling range:** Not determined  
**Sublimation temperature / start:** Not determined

**Flash point:** Not applicable**Ignition temperature:** Not determined**Decomposition temperature:** Not determined**Danger of explosion:** Product does not present an explosion hazard.**Explosion limits:**

**Lower:** Not determined  
**Upper:** Not determined

**Vapor pressure:** Not determined**Density:** Not determined**Solubility in / Miscibility with****Water:** Insoluble**10 Stability and reactivity****Thermal decomposition / conditions to be avoided:**

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

**Materials to be avoided:** Oxidizing agents**Dangerous reactions** No dangerous reactions known**Dangerous products of decomposition:**

Hydrogen fluoride

Carbon monoxide and carbon dioxide

Metal oxide fume

Toxic metal oxide fume

**11 Toxicological information****Acute toxicity:****Primary irritant effect:****on the skin:** Irritant to skin and mucous membranes.**on the eye:** Irritating effect.**Sensitization:** Sensitization possible through skin contact.**Subacute to chronic toxicity:**

Nickel and nickel compounds may cause a form of dermatitis known as nickel itch. They may also cause intestinal disorders, convulsions and asphyxia. Airborne nickel contaminated dusts are regarded as carcinogenic to the respiratory tract.

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**Additional toxicological information:**

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

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

NTP-1: Known to be carcinogenic: sufficient evidence from human studies.

ACGIH A1: Confirmed human carcinogen: Agent is carcinogenic to humans based on epidemiologic studies of, or convincing clinical evidence in, exposed humans.

**12 Ecological information:****Additional ecological information:****General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

**13 Disposal considerations****Product:**

**Recommendation** Consult state, local or national regulations to ensure proper disposal.

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

Not a hazardous material for transportation.

**DOT regulations:**

**Hazard class:** None

**Land transport ADR/RID (cross-border)**

**ADR/RID class:** None

**Maritime transport IMDG:**

**IMDG Class:** None

**Marine pollutant:** No

**Air transport ICAO-TI and IATA-DGR:**

**ICAO/IATA Class:** None

**Transport/Additional information:** Not dangerous according to the above specifications.

**15 Regulations****Product related hazard informations:****Hazard symbols:**

T Toxic

**Risk phrases:**

49 May cause cancer by inhalation.

36/38 Irritating to eyes and skin.

43 May cause sensitization by skin contact.

**Safety phrases:**

53 Avoid exposure - obtain special instructions before use.

45 In case of accident or if you feel unwell, seek medical advice immediately.

**National regulations**

This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted to research and development only.

This product contains a chemical known to the state of California to cause cancer or reproductive toxicity.

Some or all of the components of this product are not listed on the Canadian Domestic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL).

**Information about limitation of use:**

For use only by technically qualified individuals.

This product contains nickel and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know act of 1986 and 40CFR372.

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**16 Other information:**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing MSDS:** Health, Safety and Environmental Department.

**Contact:** Zachariah Holt

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

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