

**Safety Data Sheet**  
According to OSHA and ANSI

Printing date 01/31/2013

Reviewed on 02/22/2010

**1 Identification of the substance/mixture and of the company/undertaking****Product identifier****Product name:** Nickel(II) phosphate hydrate**Stock number:** 39478**CAS Number:**

27176-17-6

**EC number:**

233-844-5

**Index number:**

028-032-00-0

**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

**Information Department:** Health, Safety and Environmental Department**Emergency telephone number:**

During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

**2 Hazards identification****Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

GHS08 Health hazard

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

Carc. 1B H350 May cause cancer.

STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.



GHS07

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

**Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

T; Toxic

R49-48/23: May cause cancer by inhalation. Toxic: danger of serious damage to health by prolonged exposure through inhalation.



Xn; Sensitizing

R42/43: May cause sensitization by inhalation and skin contact.



N; Dangerous for the environment

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Information concerning particular hazards for human and environment:** Not applicable**Label elements****Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the CLP regulation.

**Hazard pictograms**

GHS08

**Signal word** Danger**Hazard statements**

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

(Contd. on page 2)

USA

# Safety Data Sheet

## According to OSHA and ANSI

Printing date 01/31/2013

Reviewed on 02/22/2010

**Product name: Nickel(II) phosphate hydrate**

(Contd. of page 1)

H317 May cause an allergic skin reaction.

H350 May cause cancer.

H372 Causes damage to organs through prolonged or repeated exposure.

**Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P285 In case of inadequate ventilation wear respiratory protection.

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

P321 Specific treatment (see on this label).

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazard description:****WHMIS classification**

D2A - Very toxic material causing other toxic effects

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

HEALTH	1
FIRE	0
REACTIVITY	1

Health (acute effects) = 1

Flammability = 0

Reactivity = 1

**Other hazards****Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

### 3 Composition/information on ingredients

**Chemical characterization: Substances****CAS# Description:**

27176-17-6 Nickel(II) phosphate hydrate

**Identification number(s):**

EC number: 233-844-5

Index number: 028-032-00-0

### 4 First aid measures

**Description of 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.

**After eye contact**

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

**After swallowing** Seek medical treatment.**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 Firefighting measures

**Extinguishing media****Suitable extinguishing agents**

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

**Special hazards arising from the substance or mixture**

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

Phosphorus oxides

Toxic metal oxide fume

(Contd. on page 3)

USA

**Safety Data Sheet**  
According to OSHA and ANSI

Printing date 01/31/2013

Reviewed on 02/22/2010

**Product name: Nickel(II) phosphate hydrate**

(Contd. of page 2)

**Advice for firefighters****Protective equipment:**

Wear self-contained respirator.  
Wear fully protective impervious suit.

**6 Accidental release measures****Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

**Environmental precautions:**

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

**Methods and material for containment and cleaning up:**

Dispose contaminated material as waste according to item 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.

**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:** The product is not flammable

**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 container tightly sealed.

Store in cool, dry conditions in well sealed containers.

**Specific end use(s)** No further relevant information available.

**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:**

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

**Additional information:** No data

(Contd. on page 4)

USA

# Safety Data Sheet

## According to OSHA and ANSI

Printing date 01/31/2013

Reviewed on 02/22/2010

**Product name: Nickel(II) phosphate hydrate**

(Contd. of page 3)

**Exposure controls****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.

Store protective clothing separately.

Maintain an ergonomically appropriate working environment.

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

**Protection of hands:**

Impervious gloves

Check protective gloves prior to each use for their proper condition.

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

**Eye protection:** Safety glasses

**Body protection:** Protective work clothing.

## 9 Physical and chemical properties

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

<b>Form:</b>	Powder
<b>Color:</b>	Green
<b>Odor:</b>	Odorless
<b>Odor threshold:</b>	Not determined.

**pH-value:** Not applicable.

**Change in condition**

<b>Melting point/Melting range:</b>	Not determined
<b>Boiling point/Boiling range:</b>	Not determined
<b>Sublimation temperature / start:</b>	Not determined

<b>Flash point:</b>	Not applicable
<b>Flammability (solid, gaseous)</b>	Not determined.
<b>Ignition temperature:</b>	Not determined
<b>Decomposition temperature:</b>	Not determined
<b>Auto igniting:</b>	Not determined.

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

**Explosion limits:**

<b>Lower:</b>	Not determined
<b>Upper:</b>	Not determined

**Vapor pressure:** Not applicable.

**Density:** Not determined.

**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.

**Other information** No further relevant information available.

## 10 Stability and reactivity

**Reactivity****Chemical stability****Thermal decomposition / conditions to be avoided:**

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

**Possibility of hazardous reactions** No dangerous reactions known

**Incompatible materials:****Bases**

Alkali metals

Alkaline earth metals

**Hazardous decomposition products:**

Phosphorus oxides (e.g. P2O5)

(Contd. on page 5)

USA

**Safety Data Sheet**  
According to OSHA and ANSI

Printing date 01/31/2013

Reviewed on 02/22/2010

**Product name: Nickel(II) phosphate hydrate**

Toxic metal oxide fume

(Contd. of page 4)

**11 Toxicological information****Information on toxicological effects****Acute toxicity:****Primary irritant effect:****on the skin:** May cause irritation**on the eye:** May cause irritation**Sensitization:**

Sensitization possible through inhalation.

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.

**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.

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****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.**Ecotoxicological effects:****Remark:** Very toxic for aquatic organisms**Additional ecological information:****General notes:**

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

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

May cause long lasting harmful effects to aquatic life.

Very toxic for aquatic organisms

**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** Consult state, local or national regulations to ensure proper disposal.**Uncleaned packagings:****Recommendation:** Disposal must be made according to official regulations.**Recommended cleansing agent:** Water, if necessary with cleansing agents.**14 Transport information****UN-Number**

DOT, ADR, IMDG, IATA

UN3077

**UN proper shipping name**

DOT, IATA

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,  
N.O.S. (Nickel(II) phosphate hydrate)**ADR**3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,  
N.O.S. (Nickel(II) phosphate hydrate)**IMDG**ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,  
N.O.S. (Nickel(II) phosphate hydrate), MARINE  
POLLUTANT

(Contd. on page 6)

- USA -

**Safety Data Sheet**  
According to OSHA and ANSI

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Reviewed on 02/22/2010

Product name: Nickel(II) phosphate hydrate

(Contd. of page 5)

**Transport hazard class(es)**

DOT, IMDG, IATA



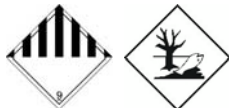
Class

9 Miscellaneous dangerous substances and articles.

Label

9

ADR



Class

9 (M7) Miscellaneous dangerous substances and articles

Label

9

**Packing group**

DOT, ADR, IMDG, IATA

III

**Environmental hazards:****Marine pollutant:**

Yes (P)

Symbol (fish and tree)

**Special marking (ADR):**

Symbol (fish and tree)

**Special marking (IATA):**

Symbol (fish and tree)

**Special precautions for user**

Warning: Miscellaneous dangerous substances and articles

**Danger code (Kemler):**

90

**EMS Number:**

F-A,S-F

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

**Transport/Additional information:**

DOT

**Remarks:**

Special marking with the symbol (fish and tree).

**UN "Model Regulation":**

UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Nickel(II) phosphate hydrate), 9, III

**15 Regulatory information**

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

**National regulations**

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

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

**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.

**Other regulations, limitations and prohibitive regulations**

**Substances of very high concern (SVHC) according to REACH, Article 57**

Substance is not listed.

**REACH - Pre-registered substances** Substance is not listed.

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

**16 Other information**

(Contd. on page 7)

USA

**Safety Data Sheet**  
According to OSHA and ANSI

Printing date 01/31/2013

Reviewed on 02/22/2010

**Product name: Nickel(II) phosphate hydrate**

(Contd. of page 6)

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 C. Holt  
Global EHS Manager

**Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
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)  
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
IATA: International Air Transport Association  
P: Marine Pollutant  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
HMIS: Hazardous Materials Identification System (USA)  
WHMIS: Workplace Hazardous Materials Information System (Canada)

USA