1 Identification

Product identifier

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

Stock number: B20922
CAS Number:
14721-18-7
EC number:
238-766-5
Index number:
028-035-00-7
Relevant identified uses of the substance or mixture and uses advised against.
Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Alfa Aesar
Thermo Fisher Scientific Chemicals, 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 business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

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

GHS03 Flame over circle

Ox. Sol. 3 H272 May intensify fire; oxidizer.

GHS08 Health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Carc. 1A H350 May cause cancer.
STOT RE 1 H372 Causes damage to the central nervous system, the lung, the kidneys, the liver and the blood through prolonged or repeated exposure. Route of exposure: Inhalative.

GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.
Hazards not otherwise classified No information known.

Label elements
GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)
Hazard pictograms

GHS03 GHS08

Signal word Danger
Hazard statements
H272 May intensify fire; oxidizer.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
H350 May cause cancer.
H372 Causes damage to the central nervous system, the lung, the kidneys, the liver and the blood 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.
WHMIS classification
C - Oxidizing materials
D1B - Toxic material causing immediate and serious toxic effects
D2A - Very toxic material causing other toxic effects

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

Health (acute effects) = 3
Flammability = 1
Physical Hazard = 3

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

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3 Composition/information on ingredients

Chemical characterization: Substances
CAS# Description:
14721-18-7 Nickel(II) chromate hydrate
Identification number(s):
EC number: 238-766-5
Index number: 028-035-00-7

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 Fire-fighting 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:
Toxic metal oxide fume
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 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.

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
Storage
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.
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/m3
ACGIH TLV	1.5; A5 (metal)
	0.2; A1 (insoluble compounds)
	0.1; A4 (soluble compounds)
Austria	Carcinogen
Denmark TWA	0.5
Finland TWA	0.1 (skin) Carcinogen
France VME	1; C3-Carcinogen

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Product name: Nickel(II) chromate hydrate

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Germany Carcinogen
Hungary 0.005-STEL; Carcinogen (insoluble compounds)
Japan OEL 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-STEL
Sweden NGV 0.5 (dust)
Switzerland MAK-W 0.5; Carcinogen
United Kingdom TWA 0.1
USA PEL 1

Chromium (VI) compounds, as Cr

mg/m3
ACGIH TLV 0.05; Confirmed human carcinogen
Belgium TWA 0.01 (insoluble)
0.05 (water soluble)
Germany MAK 0.1 (production)(water soluble)
0.5 (other applications)(water soluble)
Netherlands MAC-TGG 0.01 (water insoluble)
0.025 (water soluble)
0.05-STEL (water soluble)
Poland TWA 0.025; 0.05-STEL
Sweden TWA 0.02
United Kingdom TWA 0.05
USA PEL 0.1 (CrO3) (ceiling)

14721-18-7 Nickel(II) chromate hydrate (100.0%)

PEL (USA)	Long-term value: 0.005* mg/m³ Ceiling limit value: 0.1** mg/m³ *as Cr(VI) **as CrO3; see 29 CFR 1910.1026
REL (USA)	Long-term value: 0.001 mg/m³ as Cr; See Pocket Guide Apps. A and C
TLV (USA)	Long-term value: 0.01 mg/m³ as Cr

Additional information: No data

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.
Penetration time of glove material (in minutes) Not determined
Eye protection: Safety glasses
Body protection: Protective work clothing.

9 Physical and chemical properties

Information on basic physical and chemical properties
General Information
Appearance:

Form:	Crystalline
Color:	Green
Odor:	Odorless
Odor threshold:	Not determined.
pH-value:	Not applicable.
Change in condition	
Melting point/Melting range:	Not determined
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined
Flash point:	Not applicable
Flammability (solid, gaseous)	Contact with combustible material may cause fire.
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Auto igniting:	Not determined.
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined
Upper:	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.

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Product name: Nickel(II) chromate hydrate

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Other information No further relevant information available.

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 further relevant information available.
Incompatible materials:
Reducing agents
Flammable substances
Organic materials
Metal powders
Hazardous decomposition products: Toxic metal oxide fume

11 Toxicological information

Information on toxicological effects
Acute toxicity: No effects known.
LD/LC50 values that are relevant for classification: No data
Skin irritation or corrosion: May cause irritation
Eye irritation or corrosion: May cause irritation
Sensitization:
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Germ cell mutagenicity: No effects known.
Carcinogenicity:
May cause cancer.
ACGIH A1: Confirmed human carcinogen: Agent is carcinogenic to humans based on epidemiologic studies of, or convincing clinical evidence in, exposed humans.
IARC-3: Not classifiable as to carcinogenicity to humans.
NTP-K: Known to be carcinogenic: sufficient evidence from human studies.
Reproductive toxicity: No effects known.
Specific target organ system toxicity - repeated exposure:
Causes damage to the central nervous system, the lung, the kidneys, the liver and the blood 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:
Chromium (VI) may cause skin ulceration, gastrointestinal irritation with vomiting and diarrhea, kidney and liver damage. Overexposure may be fatal. Dusts are extremely irritating to the eyes, nose, throat and bronchial tubes. May cause cancers of the lungs, nasal cavity, sinuses, stomach and larynx.
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.
Subacute to chronic toxicity: No effects known.
Subacute to chronic toxicity: Chromates may cause ulceration and perforation of the nasal septum, liver and kidney damage, and ulceration of the skin.
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

12 Ecological information

Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability No further relevant information available.
Bioaccumulative potential No further relevant information available.
Mobility in soil No further relevant information available.
Ecotoxical effects:
Remark: Very toxic for aquatic organisms
Additional ecological information:
General notes:
Do not allow material to be released to the environment without proper governmental permits.
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.
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: 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, IMDG, IATA	UN3087
UN proper shipping name	
DOT	Oxidizing solid, toxic, n.o.s. (Nickel(II) chromate hydrate)
IMDG	OXIDIZING SOLID, TOXIC, N.O.S. (Nickel(II) chromate hydrate), MARINE POLLUTANT
IATA	OXIDIZING SOLID, TOXIC, N.O.S. (Nickel(II) chromate hydrate)

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Product name: Nickel(II) chromate hydrate

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Transport hazard class(es)

DOT

Class	5.1 Oxidising substances.
Label	5.1+6.1
Class	5.1 (OT2) Oxidizing substances
Label	5.1+6.1

IMDG

Class	5.1 Oxidising substances.
Label	5.1+6.1

IATA

Class	5.1 Oxidising substances.
Label	5.1+6.1

Packing group **DOT, IMDG, IATA**	III
Environmental hazards: **Marine pollutant (IMDG):**	Environmentally hazardous substance, solid; Marine Pollutant Symbol (fish and tree)
Special precautions for user **EMS Number:**	Warning: Oxidizing substances F-A,S-Q
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
DOT **Marine Pollutant (DOT):** **Remarks:**	 No Special marking with the symbol (fish and tree).
UN "Model Regulation":	UN3087, Oxidizing solid, toxic, n.o.s. (Nickel(II) chromate hydrate), 5.1 (6.1), III

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)
Hazard pictograms

GHS03 GHS08

Signal word Danger
Hazard statements
H272 May intensify fire; oxidizer.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
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H372 Causes damage to the central nervous system, the lung, the kidneys, the liver and the blood 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.
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 must be used by or directly under the supervision of a technically qualified individual as defined by TSCA. This product must not be used for commercial purposes or in formulations for commercial purposes.
This product contains a chemical known to the state of California to cause cancer and/or reproductive toxicity.

SARA Section 313 (specific toxic chemical listings)

14721-18-7	Nickel(II) chromate hydrate

California Proposition 65

Prop 65 - Chemicals known to cause cancer

14721-18-7	Nickel(II) chromate hydrate

Prop 65 - Developmental toxicity Substance is not listed.

Prop 65 - Developmental toxicity, female

14721-18-7	Nickel(II) chromate hydrate

Prop 65 - Developmental toxicity, male

14721-18-7	Nickel(II) chromate hydrate

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.
This product contains chromium 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
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.

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Product name: Nickel(II) chromate hydrate

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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

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 SDS: Global Marketing Department
Date of preparation / last revision 11/24/2015 / -
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
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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
vPvB: very Persistent and very Bioaccumulative
ACGIH: American Conference of Governmental Industrial Hygienists (USA)
OSHA: Occupational Safety and Health Administration (USA)
NTP: National Toxicology Program (USA)
IARC: International Agency for Research on Cancer
EPA: Environmental Protection Agency (USA)