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(II) chloride hydrate, Puratronic®

Stock number: 10815

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(II) chloride hydrate (CAS# 69098-15-3)
Identification number(s):
EINECS Number: 231-743-0
Index number: 028-011-00-6

3 Hazards identification

Hazard description:

T Toxic
N Dangerous for the environment

Information pertaining to particular dangers for man and environment
R 49 May cause cancer by inhalation.
R 61 May cause harm to the unborn child
R 23/25 Also toxic by inhalation and if swallowed.
R 38 Irritating to skin.
R 42/43 May cause sensitization by inhalation and skin contact.
R 48/23 Also toxic: danger of serious damage to health by prolonged exposure through inhalation.
R 68 Possible risk of irreversible effects.
R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
Classification system
HMIS ratings (scale 0-4)
(Hazardous Materials Identification System)

HEALTH	2
FIRE	0
REACTIVITY	1

Health (acute effects) = 2
Flammability = 0
Reactivity = 1

GHS label elements

Danger

3.1/3 - Toxic if swallowed.
3.1/3 - Toxic if inhaled.
3.2/2 - Causes skin irritation.
3.4/1 - May cause an allergic skin reaction.

Danger

3.4/1 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
3.6/1A - May cause cancer.
3.7/1B - May damage fertility or the unborn child.
3.9/1 - Causes damage to organs through prolonged or repeated exposure.
3.5/2 - Suspected of causing genetic defects.

(Contd. on page 2)

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 05/24/2010 Reviewed on 05/21/2010

Product name: Nickel(II) chloride hydrate, Puratronic®

(Contd. of page 1)

Warning

4.1/1 - Very toxic to aquatic life.
4.1/1 - Very toxic to aquatic life with long lasting effects.
Prevention:
Avoid release to the environment.
Obtain special instructions before use.
Response:
IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.

4 First aid measures

General information
Immediately remove any clothing soiled by the product.
In case of irregular breathing or respiratory arrest provide artificial respiration.
After inhalation
Supply fresh air and to be sure call for a doctor.
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
Do not induce vomiting; immediately call for medical help.
Seek immediate medical advice.

5 Fire fighting measures

Suitable extinguishing agents
Product is not flammable. Use fire fighting measures that suit the surrounding fire.
Special hazards caused by the material, its products of combustion or resulting gases:
In case of fire, the following can be released:
Hydrogen chloride (HCl)
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.
Open and handle container with care.
Information about protection against explosions and fires: The product is not flammable

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.

(Contd. on page 3)

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 05/24/2010 Reviewed on 05/21/2010

Product name: Nickel(II) chloride hydrate, Puratronic®

(Contd. of page 2)

Store away from strong bases.
Store away from water/moisture.
Further information about storage conditions:
This product is hygroscopic.
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Protect from humidity and water.

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/m3
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-STEL; 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-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.
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:	Crystalline aggregrates
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

(Contd. on page 4)

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 05/24/2010 Reviewed on 05/21/2010

Product name: Nickel(II) chloride hydrate, Puratronic®

(Contd. of page 3)

Vapor pressure:	Not determined
Density:	Not determined
Solubility in / Miscibility with Water at 20°C (68°F):	2540 g/l
pH-value (100 g/l) at 20°C (68°F):	4.9

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:
Bases
Oxidizing agents
Water/moisture
Dangerous reactions No dangerous reactions known
Dangerous products of decomposition:
Hydrogen chloride (HCl)
Toxic metal oxide fume

11 Toxicological information

Acute toxicity:

LD/LC50 values that are relevant for classification:		
Oral	LD50	186 mg/kg (rat) (IUCLID datasheet)

Primary irritant effect:
on the skin: Irritant to skin and mucous membranes.
on the eye: Irritating effect.
Sensitization: Sensitization possible through skin contact.
Other information (about experimental toxicology):
Reproductive effects have been observed on tests with laboratory animals.
Mutagenic effects have been observed on tests with laboratory animals.
Mutagenic effects have been observed on tests with human and/or animal DNA cells.
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.
Subacute to chronic toxicity:
The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:
Sense Organs and Special Senses (Olfaction) - effect, not otherwise specified.
Endocrine - hyperglycemia.
Endocrine - other changes.
Liver - other changes.
Behavioral - somnolence (general depressed activity).
Gastrointestinal - hypermotility, diarrhea.
Gastrointestinal - alteration in gastric secretion.
Nutritional and Gross Metabolic - weight loss or decreased weight gain.
Nutritional and Gross Metabolic - changes in metals, not otherwise specified.
Brain and Coverings - other degenerative changes.
Blood - changes in serum composition (e.g. TP, bilirubin, cholesterol).
Reproductive - Effects on Newborn - viability index (e.g., # alive at day 4 per # born live).
Biochemical - Metabolism (Intermediary) - amino acids (including renal excretion).
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:

Ecotoxical 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.

(Contd. on page 5)

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 05/24/2010 Reviewed on 05/21/2010

Product name: Nickel(II) chloride hydrate, Puratronic®

(Contd. of page 4)

Also poisonous for fish and plankton in water bodies.
Do not allow material to be released to the environment without proper governmental permits.
Very toxic for aquatic organisms

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.
Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

DOT regulations:

Hazard class:	6.1
Identification number:	UN3288
Packing group:	III
Hazardous substance:	100 lbs, 45.4 kg
Proper shipping name (technical name):	TOXIC SOLID, INORGANIC, N.O.S. (Nickel(II) chloride hydrate)
Label	6.1
Remarks:	Special marking with the symbol (fish and tree).

Land transport ADR/RID (cross-border)

ADR/RID class:	6.1 (T5) Toxic substances
Danger code (Kemler):	60
UN-Number:	3288
Packaging group:	III
Special marking:	Symbol (fish and tree)
Description of goods:	3288 TOXIC SOLID, INORGANIC, N.O.S. (Nickel(II) chloride hydrate, Puratronic®)

Maritime transport IMDG:

IMDG Class:	6.1
UN Number:	3288
Label	6.1
Packaging group:	III
Marine pollutant:	Yes (P) Symbol (fish and tree)
Proper shipping name:	TOXIC SOLID, INORGANIC, N.O.S. (Nickel(II) chloride hydrate)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class:	6.1
UN/ID Number:	3288
Label	6.1
Packaging group:	III

(Contd. on page 6)

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 05/24/2010 Reviewed on 05/21/2010

Product name: Nickel(II) chloride hydrate, Puratronic®

(Contd. of page 5)

Proper shipping name: TOXIC SOLID, INORGANIC, N.O.S. (Nickel(II) chloride hydrate)

UN "Model Regulation": UN3288, TOXIC SOLID, INORGANIC, N.O.S., 6.1, III
Environmental hazards: Environmentally hazardous substance, solid; Marine Pollutant

15 Regulations

Product related hazard informations:

Hazard symbols:
T Toxic
N Dangerous for the environment

Risk phrases:
49 May cause cancer by inhalation.
61 May cause harm to the unborn child
23/25 Also toxic by inhalation and if swallowed.
38 Irritating to skin.
42/43 May cause sensitization by inhalation and skin contact.
48/23 Also toxic: danger of serious damage to health by prolonged exposure through inhalation.
68 Possible risk of irreversible effects.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Safety phrases:
53 Avoid exposure - obtain special instructions before use.
45 In case of accident or if you feel unwell, seek medical advice immediately.
60 This material and its container must be disposed of as hazardous waste.
61 Avoid release to the environment. Refer to special instructions/Safety data sheets

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

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.

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)
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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent