NICKEL CHLORIDE-6-HYDRATE

SECTION 1. IDENTIFICATION

Product name : NICKEL CHLORIDE-6-HYDRATE

Product code : 1665037

Manufacturer or supplier's details

Company name of supplier : Atotech Deutschland GmbH

Address : Erasmusstrasse 20
Berlin 10553
Germany

Telephone : +4930349850

Company name of supplier : Atotech USA

Address : 1750 OVERVIEW DRIVE
ROCK HILL 29730
USA

Telephone : +18038173500

Prepared by
Product Safety Department (PSD): product-safety@atotech.com

Inquiries
Questions about content of Safety Data Sheets: product-safety@atotech.com

Emergency telephone : CHEMTREC +18004249300

Transport Medical : Rocky Mountain Poison Control Center: 303-623-5716

Recommended use of the chemical and restrictions on use

Recommended use : Plating agents and metal surface treating agents
Surface treatment

Restrictions on use : For industrial use only.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) : Category 3

Acute toxicity (Inhalation) : Category 3

Skin irritation	:	Category 2
Respiratory sensitization	:	Category 1
Skin sensitization	:	Category 1
Germ cell mutagenicity	:	Category 2
Carcinogenicity	:	Category 1A
Reproductive toxicity	:	Category 1B
Specific target organ systemic toxicity - repeated exposure	:	Category 1

GHS Label element

Hazard pictograms :

Signal Word : Danger

Hazard Statements : H301 + H331 Toxic if swallowed or if inhaled.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H360 May damage fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.

Precautionary Statements : **Prevention:**
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ eye protection/ face protection.
P285 In case of inadequate ventilation wear respiratory protection.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P309 + P311 IF exposed or if you feel unwell: Call a POISON CENTER or doctor/ physician.
Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Chemical nature : Solid

Substance name : Nickel(II) chloride hexahydrate

CAS-No. : 7791-20-0

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
Nickel(II) chloride hexahydrate	7791-20-0	>= 80 - <= 100

This product may contain component (s) that are not listed under disclosure. All components not listed, do not contain hazardous materials above deminimus disclosure limits as defined by OSHA, NIOSH, ACGIH or Canadian WHMIS regulations and or guidelines. Please refer to other sections of the MSDS for information on safety, health and environmental guidelines and precautions.

SECTION 4. FIRST AID MEASURES

General advice : Call a physician or poison control center immediately.
Show this material safety data sheet to the doctor in attendance.

If inhaled : Call a physician or poison control center immediately.
Move to fresh air.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes.
Take off contaminated clothing and shoes immediately.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 5 minutes.
If eye irritation persists, consult a specialist.

If swallowed : If swallowed, call a poison control center or doctor immediately.
Never give anything by mouth to an unconscious person.
Do not induce vomiting without medical advice.

Most important symptoms and effects, both acute and delayed : Toxic if swallowed or if inhaled.
Causes skin irritation.
May cause an allergic skin reaction.
May cause allergy or asthma symptoms or breathing difficul-

ties if inhaled.
Suspected of causing genetic defects.
May cause cancer.
May damage fertility or the unborn child.
Causes damage to organs through prolonged or repeated exposure.

Protection of first-aiders	:	First Aid responders should pay attention to self-protection and use the recommended protective clothing No artificial respiration, mouth-to-mouth or mouth to nose. Use suitable instruments/apparatus.
Notes to physician	:	For specialist advice physicians should contact the Poison Control Center.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	No information available.
Hazardous combustion products	:	Nickel compounds hydrogen chloride gas
Specific extinguishing methods	:	Use a water spray to cool fully closed containers. 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 fire-fighters	:	Exposure to decomposition products may be a hazard to health. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust).
Environmental precautions	:	Should not be released into the environment. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	:	Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).

Shovel or sweep up.
Keep in suitable, closed containers for disposal.
Clean contaminated floors and objects thoroughly while observing environmental regulations.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Handle in accordance with good industrial hygiene and safety practice.
In case of insufficient ventilation, wear suitable respiratory equipment.
Avoid breathing dust.

Conditions for safe storage : Keep containers tightly closed in a dry, cool and well-ventilated place.
Keep locked up or in an area accessible only to qualified or authorized persons.

Recommended storage temperature : -5 - 40 °C

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Nickel(II) chloride hexahydrate	7791-20-0	TWA	1 mg/m3 (Nickel)	OSHA Z-1
		TWA (Inhalable fraction)	0.1 mg/m3 (Nickel)	ACGIH
		TWA	0.1 mg/m3 (Nickel)	OSHA P0
		TWA	0.015 mg/m3 (Nickel)	NIOSH REL

Personal protective equipment

Respiratory protection : In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
In case of insufficient ventilation, wear suitable respiratory equipment.

Hand protection
Remarks : Wear protective gloves.The suitability for a specific workplace should be discussed with the producers of the protective gloves.Follow the instructions for use issued by the producer.

Eye protection	:	Tightly fitting safety goggles Ensure that eyewash stations and safety showers are close to the workstation location.
Skin and body protection	:	Impervious clothing Boots
Protective measures / Engineering measures	:	Ensure adequate ventilation, especially in confined areas.
Hygiene measures	:	Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using do not eat, drink or smoke. Avoid breathing dust.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	solid
Color	:	green
Odor	:	No information available.
Odor Threshold	:	No data available
pH	:	3.5, (as aqueous solution)
Melting point/freezing point	:	140 °C
Initial boiling point and boiling range	:	not determined
Flash point	:	Not applicable
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	Not classified as a flammability hazard
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapor pressure	:	not determined
Relative vapor density	:	Not applicable
Density	:	1.90 - 1.94 g/cm3
Solubility(ies)		
Water solubility	:	soluble
Partition coefficient: n-	:	No data available

octanol/water

Autoignition temperature	:	No data available
Thermal decomposition	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Oxidizing properties	:	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	None under normal processing.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	Avoid dust formation. To avoid thermal decomposition, do not overheat.
Incompatible materials	:	Acids Potassium Cyanides Strong oxidizing agents
Hazardous decomposition products	:	No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Inhalation
Ingestion
Skin Absorption

Acute toxicity

Toxic if swallowed or if inhaled.

Product:

Acute oral toxicity	:	Acute toxicity estimate : 106.6 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate : 0.51 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method

Ingredients:

Nickel(II) chloride hexahydrate:

Acute oral toxicity	:	LD50 Oral (Rat): 105 mg/kg
Acute inhalation toxicity	:	Acute toxicity estimate : 0.5 mg/l Exposure time: 4 h Test atmosphere: dust/mist

Remark: The acute toxicity estimate (ATE) of the ingredients are derived using the LD50/LC50 values where available.

Skin corrosion/irritation

Causes skin irritation.

Product:

Remarks: May cause skin irritation and/or dermatitis.

Serious eye damage/eye irritation

Not classified based on available information.

Respiratory or skin sensitization

Skin sensitization: May cause an allergic skin reaction.
Respiratory sensitization: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Product:

Remarks: Causes sensitization.

Germ cell mutagenicity

Suspected of causing genetic defects.

Carcinogenicity

May cause cancer.

IARC	Group 1: Carcinogenic to humans	
	Nickel(II) chloride hexahydrate	7791-20-0
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.	
OSHA specified	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.	
NTP	Known to be human carcinogen	
	Nickel(II) chloride hexahydrate	7791-20-0

Reproductive toxicity

May damage fertility or the unborn child.

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients:

Nickel(II) chloride hexahydrate:

Toxicity to fish	:	LC50: 1.3 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50: 0.51 mg/l Exposure time: 48 h

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

Product:

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Dispose of in accordance with local regulations. Dispose of wastes in an approved waste disposal facility.
Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG

UN number	:	UN 3288
Proper shipping name	:	TOXIC SOLID, INORGANIC, N.O.S.
Technical name(s)		(Nickel(II) chloride hexahydrate)
Class	:	6.1
Packing group	:	III
Labels	:	6.1

IATA-DGR

UN/ID No.	:	UN 3288
Proper shipping name	:	Toxic solid, inorganic, n.o.s.
Technical name(s)		(Nickel(II) chloride hexahydrate)
Class	:	6.1
Packing group	:	III
Labels	:	Toxic
Packing instruction (cargo aircraft)	:	677
Packing instruction (passenger aircraft)	:	670

IMDG-Code

UN number	:	UN 3288
Proper shipping name	:	TOXIC SOLID, INORGANIC, N.O.S.
Technical name(s)		(Nickel(II) chloride hexahydrate)
Class	:	6.1
Packing group	:	III
Labels	:	6.1
EmS Code	:	F-A, S-A
Marine pollutant	:	yes

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

Not applicable for product as supplied.

Domestic regulation

DOT / 49 CFR

UN/ID/NA number	:	UN 3288
Proper shipping name	:	Toxic solid, inorganic, n.o.s.
Technical name(s)		(Nickel(II) chloride hexahydrate)
Class	:	6.1
Packing group	:	III
Labels	:	POISON
ERG Code	:	151
Marine pollutant	:	no

SECTION 15. REGULATORY INFORMATION

TSCA 5a	:	Not relevant

TSCA_12b : Not relevant

DEA : Not applicable

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

Ingredients	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Nickel(II) chloride hexahydrate	7791-20-0		101.611

SARA 304 Extremely Hazardous Substances Reportable Quantity

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

SARA 311/312 Hazards : Acute Health Hazard
Chronic Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

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

Nickel(II) chloride hexahydrate	7791-20-0

Massachusetts Right To Know

Nickel(II) chloride hexahydrate	7791-20-0	80 - 100 %

Pennsylvania Right To Know

Nickel(II) chloride hexahydrate	7791-20-0	80 - 100 %

New Jersey Right To Know

Nickel(II) chloride hexahydrate	7791-20-0	80 - 100 %

California Prop 65 WARNING! This product contains a chemical known in the State of California to cause cancer.

Nickel(II) chloride hexahydrate	7791-20-0

Remarks: Components which are only displayed in Section 15 are being reported for local regulatory purposes. These components are not displayed in Section 3 due to one or more of the following conditions being met: being present in the product at concentration(s) below threshold limit values for reporting, not considered hazardous materials, health hazards or because they do not contribute to the overall GHS Classification of the final product as required by OSHA HazCom 2012 final rule (29 CFR 1910.1200).

Substances currently restricted by WEEE/RoHS (European Directive 2002/96/EC , 2002/95/EC) or ELV (European Directive 2000/53/EC):

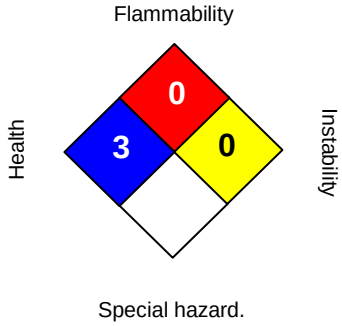
PBDE	PBB	CrVI	Hg	Pb	Cd
-	-	-	-	-	-

Please note: Current legislation restricting the use of certain substances applies to „homogeneous material“ in finished articles being supplied to the market. Substances deposited during surface finishing may have a composition (weight percent) higher than the weight percent of the substance in the operating solution from which the deposit is made. Atotech encourages its customers to implement systems to ensure their finished products comply with the regulations in force.

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	3*
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 29.04.2015

The information provided in this Material 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.