

# SAFETY DATA SHEET

Version 8.4  
Revision Date 26.08.2021  
Print Date 15.09.2021

## SECTION 1: Identification of the hazardous chemical and of the supplier

### 1.1 Product identifiers

Product name : Nickel(II) chloride hexahydrate for analysis  
EMSURE® ACS

Product Number : 1.06717  
Catalogue No. : 106717  
Brand : Millipore  
CAS-No. : 7791-20-0

### 1.2 Other means of identification

No data available

### 1.3 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Reagent for analysis

### 1.4 Details of the supplier of the safety data sheet

Company : Merck Sdn. Bhd.  
Co. No: 178145  
No. 4, Jalan U1/26, Section U1,  
40150 HICOM GLENMARIE INDUSTRIAL PARK, SHAH ALA  
MALAYSIA  
  
Telephone : +60 (0)3-74943688  
Fax : +60 (0)3-74910850

### 1.5 Emergency telephone

Emergency Phone # : 1-800-815-308 (CHEMTREC) \* + 62 0800  
140 1253 (Customer Call Centre)

## Section 2: Hazard identification

### 2.1 GHS Classification

Classification according to CLASS regulations 2013

Acute toxicity, Oral (Category 3), H301

Acute toxicity, Inhalation (Category 3), H331

Skin corrosion/irritation (Category 2), H315

Respiratory sensitization (Category 1), H334

Skin sensitization (Category 1), H317

Germ cell mutagenicity (Category 2), H341

Carcinogenicity, Inhalation (Category 1A), H350i

Reproductive toxicity (Category 1B), H360D

Specific target organ toxicity - repeated exposure, Inhalation (Category 1), Lungs, H372

Hazardous to the aquatic environment - acute hazard (Category 1), H400

Hazardous to the aquatic environment - chronic hazard (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 2.2 GHS Label elements, including precautionary statements

Labelling according to CLASS regulations 2013

Pictogram



Signal word	Danger
Hazard statement(s)	
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.
H350i	May cause cancer by inhalation.
H360D	May damage the unborn child.
H372	Causes damage to organs (Lungs) through prolonged or repeated exposure if inhaled.
H410	Very toxic to aquatic life with long lasting effects.
Precautionary statement(s)	
Prevention	
P201	Obtain special instructions before use.
P260	Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P273	Avoid release to the environment.
P280	Wear protective gloves.
P281	Use personal protective equipment as required.
P285	In case of inadequate ventilation wear respiratory protection.
Response	
P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth.
P304 + P340 + P311	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P391	Collect spillage.
Storage	
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.

## 2.3 Other hazards - none

## SECTION 3: Composition and information of the ingredients of the hazardous chemical

Substance / Mixture : Substance

### 3.1 Substances

Formula :  $\text{NiCl}_2 \cdot 6\text{H}_2\text{O}$   
Molecular weight : 237.69 g/mol  
CAS-No. : 7791-20-0  
EC-No. : 616-576-7

#### Hazardous ingredients

Component	Classification	Concentration
<b>Nickel(II) chloride hexahydrate</b>		
	Acute Tox. 3; 2; Resp.	$\leq 100 \%$

	Sens. 1; Skin Sens. 1; Muta. 2; Carc. 1A; Repr. 1B; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H301, H331, H315, H334, H317, H341, H350i, H360D, H372, H400, H410 Concentration limits: ≥ 1 %: STOT RE 1, H372; 0.1 - < 1 %: STOT RE 2, H373; ≥ 20 %: Skin Irrit. 2, H315; ≥ 0.01 %: Skin Sens. 1, H317; M-Factor - Aquatic Acute: 1 - Aquatic Chronic: 1	
--	--	--

For the full text of the H-Statements mentioned in this Section, see Section 16.

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

#### If swallowed

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media**

For this substance/mixture no limitations of extinguishing agents are given.

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

Hydrogen chloride gas

Nickel/nickel oxides

Not combustible.

Fire may cause evolution of:

Hydrogen chloride gas

Ambient fire may liberate hazardous vapours.

**5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

**5.4 Further information**

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

---

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all circumstances. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

**6.2 Environmental precautions**

Do not let product enter drains.

**6.3 Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

**6.4 Reference to other sections**

For disposal see section 13.

---

**SECTION 7: Handling and storage****7.1 Precautions for safe handling****Advice on safe handling**

Work under hood. Do not inhale substance/mixture.

**Hygiene measures**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities****Storage conditions**

Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Recommended storage temperature see product label.

**Storage class**

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## SECTION 8: Exposure controls and personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Nickel(II) chloride hexahydrate	7791-20-0	TWA	0.1 mg/m <sup>3</sup>	Malaysia. Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations 2000.

### 8.2 Exposure controls

#### Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

#### Personal protective equipment

##### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

##### Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: KCL 741 Dermatril® L

##### Body Protection

protective clothing

##### Respiratory protection

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

### **Control of environmental exposure**

Do not let product enter drains.

---

## **SECTION 9: Physical and chemical properties**

### **9.1 Information on basic physical and chemical properties**

a) Appearance	Form: solid Color: green
b) Odor	odorless
c) Odor Threshold	Not applicable
d) pH	4.9 at 100 at 20 °C
e) Melting point/freezing point	Melting point: 1,001 °C - (anhydrous substance), decomposes
f) Initial boiling point and boiling range	No data available
g) Flash point	Not applicable
h) Evaporation rate	No data available
i) Flammability (solid, gas)	The product is not flammable.
j) Upper/lower flammability or explosive limits	No data available
k) Vapor pressure	No data available
l) Vapor density	No data available
m) Density	1.92 g/cm <sup>3</sup>
Relative density	No data available
n) Water solubility	2,540 g/l at 20 °C - soluble
o) Partition coefficient: n-octanol/water	Not applicable for inorganic substances
p) Autoignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
s) Explosive properties	No data available
t) Oxidizing properties	none

### **9.2 Other safety information**

Millipore- 1.06717

Page 6 of 11

The life science business of Merck operates as MilliporeSigma in the US and Canada



---

**SECTION 10: Stability and reactivity****10.1 Reactivity**

No data available

**10.2 Chemical stability**

The product is chemically stable under standard ambient conditions (room temperature) .

**10.3 Possibility of hazardous reactions**

Violent reactions possible with:  
Alkali metals

**10.4 Conditions to avoid**

Avoid moisture.  
no information available

**10.5 Incompatible materials**

No data available

**10.6 Hazardous decomposition products**

In the event of fire: see section 5

---

**SECTION 11: Toxicological information****11.1 Information on toxicological effects****Acute toxicity**

LD50 Oral - Rat - female - 175 mg/kg  
(OECD Test Guideline 401)

Remarks: (anhydrous substance)

The value is given in analogy to the following substances: nickel(II) chloride

LC50 Inhalation - Rat - male - 4 h - 0.593 mg/l

(OECD Test Guideline 403)

Remarks: (anhydrous substance)

The value is given in analogy to the following substances: nickel(II) chloride

Dermal: No data available

**Skin corrosion/irritation**

Causes skin irritation. (anhydrous substance)

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: No eye irritation - 168 h

(OECD Test Guideline 405)

Remarks: (anhydrous substance)

The value is given in analogy to the following substances: nickel(II) chloride  
slight irritation

**Respiratory or skin sensitization**

May cause allergic respiratory and skin reactions (anhydrous substance)

**Germ cell mutagenicity**

Suspected of causing genetic defects.

Test Type: gene mutation test

Test system: mammalian cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473  
Result: positive  
Test Type: Ames test  
Test system: Salmonella typhimurium  
Result: negative  
Remarks: (Lit.)

Test Type: Chromosome aberration test  
Species: Mouse

Application Route: Intraperitoneal

Result: positive  
Remarks: (ECHA)

**Carcinogenicity**

No data available

**Reproductive toxicity**

May damage the unborn child.

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

Inhalation - Causes damage to organs through prolonged or repeated exposure. - Lungs  
The value is given in analogy to the following substances: nickel(II) chloride

**Aspiration hazard**

No data available

**11.2 Additional Information**

Gastrointestinal disturbance

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

The following applies to soluble nickel compounds in general: inorganic nickel has an adstringent effect on mucous membranes. Sensitisation with allergic manifestations is possible in predisposed persons. In some cases nickel dermatitis may manifest itself. Depending on the water-solubility, nickel and its compounds display a more or less distinct carcinogenicity, with the readily soluble nickel compounds obviously entailing the lesser risk.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

---

**SECTION 12: Ecological information**

**12.1 Toxicity**

Toxicity to fish	semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - 15.3 mg/l - 96 h Remarks: (ECHA) (anhydrous substance) The value is given in analogy to the following substances: nickel(II)
------------------	---



chloride

Toxicity to daphnia and other aquatic invertebrates	static test LC50 - Ceriodaphnia dubia (water flea) - 0.013 mg/l - 48 h Remarks: (ECHA) (anhydrous substance) The value is given in analogy to the following substances: nickel(II) chloride
Toxicity to algae	static test ErC50 - green algae - 0.243 mg/l - 72 h (OECD Test Guideline 201) Remarks: (anhydrous substance) The value is given in analogy to the following substances: nickel(II) chloride

#### 12.2 Persistence and degradability

The methods for determining biodegradability are not applicable to inorganic substances.

#### 12.3 Bioaccumulative potential

No data available

#### 12.4 Mobility in soil

No data available

#### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

#### 12.6 Other adverse effects

Discharge into the environment must be avoided.

---

### SECTION 13: Disposal information

#### 13.1 Waste treatment methods

##### Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions. According to Quality Environment Regulation (Scheduled Waste) 2005, waste need to be sent to designated premise for recycle, treatment or disposal. Please contact Kualiti Alam for waste classification and correct disposal method.

---

### SECTION 14: Transportation information

#### 14.1 UN number

ADR/RID: 3288

IMDG: 3288

IATA-DGR: 3288

#### 14.2 UN proper shipping name

ADR/RID: TOXIC SOLID, INORGANIC, N.O.S. (Nickel(II) chloride hexahydrate)

IMDG: TOXIC SOLID, INORGANIC, N.O.S. (Nickel(II) chloride hexahydrate)

IATA-DGR: Toxic solid, inorganic, n.o.s. (Nickel(II) chloride hexahydrate)

**14.3 Transport hazard class(es)**

ADR/RID: 6.1

IMDG: 6.1

IATA-DGR: 6.1

**14.4 Packaging group**

ADR/RID: III

IMDG: III

IATA-DGR: III

**14.5 Environmental hazards**

ADR/RID: yes

IMDG Marine pollutant: yes

IATA-DGR: no

**14.6 Special precautions for user**

None

**14.7 Incompatible materials****Other regulations**

Hazchem Code

: 2X

---

**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Notification status****DSL:** All components of this product are on the Canadian DSL**ENCS:** On the inventory, or in compliance with the inventory**ISHL:** On the inventory, or in compliance with the inventory**KECI:** On the inventory, or in compliance with the inventory**NZIoC:** On the inventory, or in compliance with the inventory**PICCS:** On the inventory, or in compliance with the inventory

---

**SECTION 16: Other information****Full text of H-Statements referred to under sections 2 and 3.**

H301 Toxic if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H331 Toxic if inhaled.

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

H341 Suspected of causing genetic defects.

H350i May cause cancer by inhalation.

H360D May damage the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure if inhaled.

H373 May cause damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

**Further information**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See

www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Copyright 2020 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact [mlsbranding@sial.com](mailto:mlsbranding@sial.com).