

## Chemical Safety Data Sheet MSDS / SDS

**CHROMIUM(III) NITRATE NONAHYDRATE**

Revision Date:2026-05-31 Revision Number:1

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****Product identifier**

Product name : CHROMIUM(III) NITRATE NONAHYDRATE  
CBnumber : CB9346145  
CAS : 7789-02-8  
EINECS Number : 616-540-0  
Synonyms : chromium nitrate,CHROMIUM(III) NITRATE NONAHYDRATE

**Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

**Company Identification**

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 010-86108875

**SECTION 2: Hazards identification****GHS Label elements, including precautionary statements**

Symbol(GHS)



Signal word

Warning

**Precautionary statements**

P337+P313 IF eye irritation persists: Get medical advice/attention.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
Continuerinsing.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P221 Take any precaution to avoid mixing with combustibles/...

P220 Keep/Store away from clothing/.../combustible materials.

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

**Hazard statements**

H319 Causes serious eye irritation

H315 Causes skin irritation

H303 May be harmful if swallowed

H272 May intensify fire; oxidizer

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## SECTION 3: Composition/information on ingredients

### Substance

|              |                                                       |
|--------------|-------------------------------------------------------|
| Product name | : CHROMIUM(III) NITRATE NONAHYDRATE                   |
| Synonyms     | : chromium nitrate, CHROMIUM(III) NITRATE NONAHYDRATE |
| CAS          | : 7789-02-8                                           |
| EC number    | : 616-540-0                                           |
| MF           | : CrH18N3O18                                          |
| MW           | : 400.148                                             |

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## SECTION 4: First aid measures

### Description of first aid measures

#### General advice

Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air.

#### 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

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

### 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

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

No data available

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## SECTION 5: Firefighting measures

### Extinguishing media

#### Suitable extinguishing media

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

## Special hazards arising from the substance or mixture

Nitrogen oxides (NO<sub>x</sub>) Chromium oxides

Not combustible.

Has a fire-promoting effect due to release of oxygen. Ambient fire may liberate hazardous vapours.

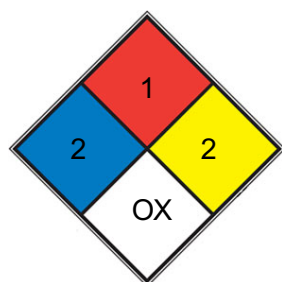
## Advice for firefighters

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

## 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.

## NFPA 704



|   |               |    |                                                                                                                                                                                                                                                                                                                                 |
|---|---------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ■ | HEALTH        | 2  | Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury (e.g. <a href="#">diethyl ether</a> , ammonium phosphate, iodine)                                                                                                                                                |
| ■ | FIRE          | 1  | Materials that require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur. Includes some finely divided suspended solids that do not require heating before ignition can occur. Flash point at or above 93.3 °C (200 °F). (e.g. <a href="#">mineral oil</a> , ammonia) |
| ■ | REACT         | 2  | Undergoes violent chemical change at elevated temperatures and pressures, reacts violently with water, or may form explosive mixtures with water (e.g. white phosphorus, <a href="#">potassium</a> , <a href="#">sodium</a> )                                                                                                   |
| □ | SPEC.<br>HAZ. | OX |                                                                                                                                                                                                                                                                                                                                 |

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

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

For personal protection see section 8.

### Environmental precautions

Do not let product enter drains.

### 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 dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

### **Reference to other sections**

For disposal see section 13.

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## **SECTION 7: Handling and storage**

### **Precautions for safe handling**

### **Advice on protection against fire and explosion**

Keep away from open flames, hot surfaces and sources of ignition.

### **Hygiene measures**

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

For precautions see section 2.2.

### **Conditions for safe storage, including any incompatibilities**

### **Storage conditions**

Tightly closed. Do not store near combustible materials.

### **Specific end use(s)**

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

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## **SECTION 8: Exposure controls/personal protection**

### **control parameter**

### **Hazard composition and occupational exposure limits**

Does not contain substances with occupational exposure limits.

### **Exposure controls**

### **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.

Recommended Filter type: Filter type P2

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

#### Control of environmental exposure

Do not let product enter drains.

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

|                                              |                                                                               |
|----------------------------------------------|-------------------------------------------------------------------------------|
| Appearance                                   | solid                                                                         |
| Odour                                        | of nitric acid                                                                |
| Odour Threshold                              | No data available                                                             |
| pH                                           | 2 - 3 at 50 g/l at 20 °C                                                      |
| Melting point/freezing point                 | Melting point/range: 60 °C - lit.                                             |
| Initial boiling point and boiling range      | 100°C                                                                         |
| Flash point                                  | Not applicable                                                                |
| Evaporation rate                             | No data available                                                             |
| Flammability (solid, gas)                    | The product is not flammable.                                                 |
| Upper/lower flammability or explosive limits | No data available                                                             |
| Vapour pressure                              | No data available                                                             |
| Vapour density                               | No data available                                                             |
| Relative density                             | No data available No data available                                           |
| Water solubility                             | 810 g/l at 20 °C - soluble                                                    |
| Partition coefficient: n-octanol/water       | Not applicable for inorganic substances                                       |
| Autoignition temperature                     | No data available                                                             |
| Decomposition temperature                    | >100 °C - Elimination of water of crystallization                             |
| Viscosity                                    | Viscosity, kinematic: No data available Viscosity, dynamic: No data available |

|                      |                                                                          |
|----------------------|--------------------------------------------------------------------------|
| Explosive properties | No data available                                                        |
| Oxidizing properties | The substance or mixture is classified as oxidizing with the category 3. |

### Other safety information

Solubility in other solvents

Ethanol at 20 °C

- soluble

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## SECTION 10: Stability and reactivity

### Reactivity

No data available

### Chemical stability

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

### Possibility of hazardous reactions

Risk of ignition or formation of inflammable gases or vapours with: combustible substances

Violent reactions possible with:

strong reducing agents

### Conditions to avoid

Heat.

no information available

### Incompatible materials

Metals

### Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male and female - 3.250 mg/kg

(OECD Test Guideline 401) Inhalation

#### Skin corrosion/irritation

No data available

#### Serious eye damage/eye irritation

No data available

#### Respiratory or skin sensitization

The product is a skin sensitizer, sub-category 1B. (OECD Test Guideline 406)

Remarks:

Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471

Result: negative

Remarks: The value is given in analogy to the following substances: Chromium(III) nitrate Test Type: sister chromatid exchange assay

Test system: Chinese hamster ovary cells Method: OECD Test Guideline 479

Result: negative

Remarks: The value is given in analogy to the following substances: Chromium(III) nitrate Test Type: Mutagenicity (mammal cell test): chromosome aberration.

Method: OECD Test Guideline 473 Result: negative

Remarks: The value is given in analogy to the following substances: Chromium(III) nitrate

Test Type: Micronucleus test Species: Mouse

Method: OECD Test Guideline 474 Result: negative

### **Carcinogenicity**

No data available

### **Reproductive toxicity**

No data available

### **Specific target organ toxicity - single exposure**

No data available

### **Specific target organ toxicity - repeated exposure**

No data available

### **Aspiration hazard**

No data available

### **Toxicity**

LD50 orally in Rabbit: 3250 mg/kg

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## **SECTION 12: Ecological information**

### **Toxicity**

#### **Toxicity to fish**

static test LC50 - Trout - 20,1 mg/l - 96 h

(OECD Test Guideline 203)

flow-through test LC50 - Oncorhynchus mykiss (rainbow trout) - 24,1 mg/l - 96 h

(OECD Test Guideline 203)

Remarks: The value is given in analogy to the following substances: Chromium(III) nitrate The value is given in analogy to the following substances: Chromium trinitrate

#### **Toxicity to daphnia and other aquatic invertebrates**

EC50 - Daphnia magna (Water flea) - 76,9 - 268,6 mg/l - 48 h Remarks: The value is given in analogy to the following substances:

Chromium(III) nitrate

### **Persistence and degradability**

The methods for determining the biological degradability are not applicable to inorganic substances.

### Bioaccumulative potential

No data available

### Mobility in soil

No data available

### Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### Other adverse effects

No data available

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## SECTION 13: Disposal considerations

### Waste treatment methods

#### Incompatibilities

This chemical is a strong oxidizer. Contact with reducing agents; fuels, ethers, and other flammable and combustible materials cause a fire and explosion hazard. Violent reaction with many compounds, including reducing agents; alcohols, chemically active metals; combustible materials, strong acids, alkaline earth sulfides.

### Product

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.

### Waste Disposal

Precipitate chromium as the hydroxide. Dewater the sludge and dispose of in singlepurpose dumps.

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## SECTION 14: Transport information

### UN number

ADR/RID: 2720 IMDG: 2720 IATA: 2720

### UN proper shipping name

ADR/RID: CHROMIUM NITRATE IMDG: CHROMIUM NITRATE

IATA: Chromium nitrate

|      |                                       |           |
|------|---------------------------------------|-----------|
| 14.3 | Transport hazard class(es)            |           |
|      | ADR/RID: 5.1 IMDG: 5.1                | IATA: 5.1 |
| 14.4 | Packaging group                       |           |
|      | ADR/RID: III IMDG: III                | IATA: III |
| 14.5 | Environmental hazards                 |           |
|      | ADR/RID: no IMDG Marine pollutant: no | IATA: no  |

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## SECTION 15: Regulatory information

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

#### Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015:Not Listed. website: <https://www.mem.gov.cn/>

#### Measures for Environmental Management of New Chemical Substances

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC):Listed. website: <https://www.mee.gov.cn/>

New Zealand Inventory of Chemicals (NZIoC):Listed. website: <https://www.epa.govt.nz/>

United States Toxic Substances Control Act (TSCA) Inventory:Not Listed. website: <https://www.epa.gov/>

Philippines Inventory of Chemicals and Chemical Substances (PICCS):Not Listed. website: <https://emb.gov.ph/>

Korea Existing Chemicals List (KECL):Not Listed. website: <http://ncis.nier.go.kr>

European Inventory of Existing Commercial Chemical Substances (EINECS):Not Listed. website: <https://echa.europa.eu/>

EC Inventory:Not Listed.

Vietnam National Chemical Inventory:Listed. website: <https://chemicaldata.gov.vn/>

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## SECTION 16: Other information

### Abbreviations and acronyms

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

CAS: Chemical Abstracts Service

EC50: Effective Concentration 50%

IATA: International Air Transportation Association

IMDG: International Maritime Dangerous Goods

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

STEL: Short term exposure limit

TWA: Time Weighted Average

### References

【1】 CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

【2】 ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

【3】 ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

【4】 eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:

[http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)

【5】 ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

【6】 Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

【7】 HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

【8】 IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

【9】 IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

【10】 Sigma-Aldrich, website: <https://www.sigmaaldrich.com/>

### Other Information

Do NOT take working clothes home. The recommendations on this Card also apply to Chromium(III) nitrate anhydrous.

#### Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.