

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

Trade name **Sodium dichromate, dihydrate**

Stock number: L14890

CAS Number:

7789-12-0

EC number:

234-190-3

Index number:

024-004-01-4

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

Identified use: SU24 Scientific research and development

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

#### Manufacturer/Supplier:

Alfa Aesar GmbH & Co.KG

A Johnson Matthey Company

Zeppelinstr. 7b

76185 Karlsruhe / Germany

Tel: +49 (0) 721 84007 280

Fax: +49 (0) 721 84007 300

Email: tech@alfa.com

www.alfa.com

Informing department: Product safety Tel + +049 (0) 7275 988687-0

### 1.4 Emergency telephone number:

Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number)


Poison Information Center Mainz

www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240


## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008


 GHS03 flame over circle

Ox. Sol. 2      H272      May intensify fire; oxidiser.

 GHS06 skull and crossbones

Acute Tox. 3      H301      Toxic if swallowed.

Acute Tox. 2      H330      Fatal if inhaled.

 GHS08 health hazard


Resp. Sens. 1      H334      May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Muta. 1B      H340      May cause genetic defects.


Carc. 1B      H350      May cause cancer.

Repr. 1B      H360FD      May damage fertility. May damage the unborn child.

STOT RE 1      H372      Causes damage to the lung, the liver, the digestive system and the blood system through prolonged or repeated exposure. Route of exposure: Oral.

 GHS05 corrosion

Skin Corr. 1B      H314      Causes severe skin burns and eye damage.

 GHS09 environment

Aquatic Acute 1      H400      Very toxic to aquatic life.


Aquatic Chronic 1      H410      Very toxic to aquatic life with long lasting effects.

 GHS07


Acute Tox. 4      H312      Harmful in contact with skin.

Skin Sens. 1      H317      May cause an allergic skin reaction.

#### Classification according to Directive 67/548/EEC or Directive 1999/45/EC

 T+; Very toxic

R26:      Very toxic by inhalation.


 T; Toxic

Carc. Cat. 2, Muta. Cat. 2, Repr. Cat. 2

R45-46-60-61-25-48/23:      May cause cancer. May cause heritable genetic damage. May impair fertility. May cause harm to the unborn child. Toxic if swallowed. Toxic: danger of serious damage to health by prolonged exposure through inhalation.

 C; Corrosive


R34:      Causes burns.

 Xn; Harmful


R21:      Harmful in contact with skin.

 Xn; Sensitising

R42/43:      May cause sensitisation by inhalation and skin contact.

 O; Oxidising

R8:      Contact with combustible material may cause fire.

 N; Dangerous for the environment

R50/53:      Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Trade name **Sodium dichromate, dihydrate**

Information concerning particular hazards for human and environment: Not applicable

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Other hazards that do not result in classification No information known.

**2.2 Label elements**

**Labelling according to Regulation (EC) No 1272/2008** The substance is classified and labelled according to the CLP regulation.

**Hazard pictograms**



GHS03 GHS05 GHS06 GHS08 GHS09

**Signal word** Danger

**Hazard statements**

- H272 May intensify fire; oxidiser.
- H301 Toxic if swallowed.
- H312 Harmful in contact with skin.
- H330 Fatal if inhaled.
- H314 Causes severe skin burns and eye damage.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H317 May cause an allergic skin reaction.
- H340 May cause genetic defects.
- H350 May cause cancer.
- H360FD May damage fertility. May damage the unborn child.
- H372 Causes damage to the lung, the liver, the digestive system and the blood system through prolonged or repeated exposure. Route of exposure: Oral.
- H410 Very toxic to aquatic life with long lasting effects.

**Precautionary statements**

- P221 Take any precaution to avoid mixing with combustibles.
- P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P320 Specific treatment is urgent (see on this label).
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**2.3 Other hazards**

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**SECTION 3: Composition/information on ingredients**

**3.1 Substances**

**CAS# Designation:**

7789-12-0 Sodium dichromate, dihydrate

**Identification number(s):**

EC number: 234-190-3

Index number: 024-004-01-4

**SECTION 4: First aid measures**

**4.1 Description of first aid measures**

**General information**

Instantly remove any clothing soiled by the product.  
Remove breathing apparatus only after soiled clothing has been completely removed.  
In case of irregular breathing or respiratory arrest provide artificial respiration.

**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.  
Seek immediate medical advice.

**After skin contact**

Instantly 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 doctor.

**After swallowing** Do not induce vomiting; instantly call for medical help.

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

Causes severe skin burns.  
Causes serious eye damage.

**4.3 Indication of any immediate medical attention and special treatment needed** No further relevant information available.

**SECTION 5: Firefighting measures**

**5.1 Extinguishing media**

**Suitable extinguishing agents** CO<sub>2</sub>, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

**For safety reasons unsuitable extinguishing agents** Halocarbon extinguisher

**5.2 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:

Sodium oxide  
Chromium oxides

**5.3 Advice for firefighters**

**Protective equipment:**

Wear self-contained breathing apparatus.  
Wear full protective suit.

**SECTION 6: Accidental release measures**

**6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation.

**6.2 Environmental precautions:**

Do not allow material to be released to the environment without proper governmental permits.  
Do not allow product to reach sewage system or water bodies.  
Do not allow to enter the ground/soil.

**6.3 Methods and material for containment and cleaning up:**

Use neutralizing agent.  
Dispose of contaminated material as waste according to item 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.

**6.4 Reference to other sections**

See Section 7 for information on safe handling  
See section 8 for information on personal protection equipment.

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See Section 13 for information on disposal.

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**SECTION 7: Handling and storage**

**7.1 Precautions for safe handling**

Handle under dry protective gas.  
Keep containers tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Ensure good ventilation/exhaustion 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.

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

**Storage**

**Requirements to be met by storerooms and containers:** 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.  
Store away from water.  
Do not store together with acids.  
Store away from strong bases.

**Further information about storage conditions:**

Store under dry inert gas.  
This product is hygroscopic.  
Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.  
Protect from humidity and keep away from water.  
Store in a locked cabinet or with access restricted to technical experts or their assistants.

**7.3 Specific end use(s)** No further relevant information available.

**SECTION 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.

**8.1 Control parameters**

**Components with critical values that require monitoring at the workplace:**

**7789-12-0 Sodium dichromate, dihydrate (100,0%)**

MAK (Germany)	einatembare Fraktion; vgl. Abschn. XII
PEL (USA)	Long-term value: 0,005* mg/m <sup>3</sup> Ceiling limit: 0,1** mg/m <sup>3</sup> *as Cr(VI) **as CrO <sub>3</sub> ; see 29 CFR 1910,1026
REL (USA)	Long-term value: 0,001 mg/m <sup>3</sup> as Cr; See Pocket Guide Apps. A and C
TLV (USA)	Long-term value: 0,05 mg/m <sup>3</sup> as Cr; BEI

**Ingredients with biological limit values:**

**7789-12-0 Sodium dichromate, dihydrate (100,0%)**

BEI (USA)	25 µg/L Medium: urine Time: end of shift at end of workweek Parameter: Total chromium (fume)
	10 µg/L Medium: urine Time: increase during shift Parameter: Total chromium (fume)

**Additional information:** No data

**8.2 Exposure controls**

**Personal protective equipment**

**General protective and hygienic measures**

The usual precautionary measures should be adhered to in handling the chemicals.  
Keep away from foodstuffs, beverages and food.  
Instantly remove any soiled and impregnated garments.  
Wash hands during breaks and at the end of the work.  
Store protective clothing separately.

Avoid contact with the eyes and skin.  
Maintain an ergonomically appropriate working environment.

**Breathing equipment:** Use self-contained respiratory protective device in emergency situations.

**Recommended filter device for short term use:**

Use a respirator with type P100 (USA) or P3 (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

**Protection of hands:**

Check protective gloves prior to each use for their proper condition.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

**Material of gloves** Nitrile rubber, NBR

**Penetration time of glove material (in minutes)** 480

**Glove thickness** 0.11 mm

**Eye protection:**

Tightly sealed safety glasses.

Full face protection

**Body protection:** Protective work clothing.

**SECTION 9: Physical and chemical properties**

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

**General Information**

**Appearance:**

<b>Form:</b>	Crystalline
<b>Colour:</b>	Orange-red
<b>Smell:</b>	Odourless
<b>Odour threshold:</b>	Not determined.

**pH-value:** Not applicable.

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**Change in condition**  
**Melting point/Melting range:** 100 °C (-H<sub>2</sub>O)  
**Boiling point/Boiling range:** Not determined  
**Sublimation temperature / start:** Not determined  
**Inflammability (solid, gaseous)** Contact with combustible material may cause fire.  
**Ignition temperature:** Not determined  
**Decomposition temperature:** Not determined  
**Self-inflammability:** Not determined.

**Danger of explosion:** Not determined.  
**Critical values for explosion:**  
**Lower:** Not determined  
**Upper:** Not determined  
**Steam pressure:** Not applicable.  
**Density at 20 °C** 2,348 g/cm<sup>3</sup>  
**Relative density** Not determined.  
**Vapour density** Not applicable.  
**Evaporation rate** Not applicable.  
**Solubility in / Miscibility with**  
**Water at 20 °C:** 732 g/l  
Soluble  
**Partition coefficient (n-octanol/water):** Not determined.  
**Viscosity:**  
**dynamic:** Not applicable.  
**kinematic:** Not applicable.  
**9.2 Other information** No further relevant information available.

**SECTION 10: Stability and reactivity**

**10.1 Reactivity** May intensify fire; oxidiser.  
**10.2 Chemical stability** Stable under recommended storage conditions.  
**Thermal decomposition / conditions to be avoided:** No decomposition if used and stored according to specifications.  
**10.3 Possibility of hazardous reactions**  
Reacts with reducing agents  
Reacts with flammable substances  
**10.4 Conditions to avoid** No further relevant information available.  
**10.5 Incompatible materials:**  
Acids  
Reducing agents  
Flammable substances  
Water/moisture  
Bases  
Organic materials  
Metal powders  
**10.6 Hazardous decomposition products:**  
Sodium oxide  
Chromium oxides

**SECTION 11: Toxicological information**

**11.1 Information on toxicological effects**  
**Acute toxicity:**  
Harmful in contact with skin.  
Fatal if inhaled.  
Toxic if swallowed.  
Danger by skin resorption.  
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.  
**LD/LC50 values that are relevant for classification:** No data  
**Skin irritation or corrosion:** Causes severe skin burns.  
**Eye irritation or corrosion:** Causes serious eye damage.  
**Sensitization:**  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
May cause an allergic skin reaction.  
**Germ cell mutagenicity:**  
May cause genetic defects.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.  
**Carcinogenicity:**  
May cause cancer.  
IARC-1: Carcinogenic to humans: sufficient evidence of carcinogenicity.  
NTP-R: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals.  
ACGIH A1: Confirmed human carcinogen: Agent is carcinogenic to humans based on epidemiologic studies of, or convincing clinical evidence in, exposed humans.  
(inhalation) EPA-A: human carcinogen: sufficient evidence from epidemiologic studies to support a causal association between exposure and cancer.  
(inhalation) EPA-K: Known human carcinogens.  
(oral) EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.  
(oral) EPA-CBD: Carcinogenic potential cannot be determined.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this substance.  
**Reproductive toxicity:** May damage fertility or the unborn child.  
**Specific target organ system toxicity - repeated exposure:**  
Causes damage to the lung, the liver, the digestive system and the blood system through prolonged or repeated exposure. Route of exposure: Oral.  
**Specific target organ system toxicity - single exposure:** No effects known.  
**Aspiration hazard:** No effects known.  
**Subacute to chronic toxicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.  
**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

**SECTION 12: Ecological information**

**12.1 Toxicity**  
**Aquatic toxicity:** No further relevant information available.  
**12.2 Persistence and degradability** No further relevant information available.  
**12.3 Bioaccumulative potential** No further relevant information available.  
**12.4 Mobility in soil** No further relevant information available.  
**Ecotoxicological effects:**  
**Remark:** Very toxic for fish  
**Additional ecological information:**  
**General notes:**  
Do not allow material to be released to the environment without proper governmental permits.  
Water danger class 3 (Self-assessment): extremely hazardous for water.  
Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into soil.

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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  
**12.5 Results of PBT and vPvB assessment**  
**PBT:** Not applicable.  
**vPvB:** Not applicable.  
**12.6 Other adverse effects** No further relevant information available.

**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods**  
**Recommendation**  
Hand over to disposers of hazardous waste.  
Must be specially treated under adherence to official regulations.  
Consult state, local or national regulations for proper disposal.  
**Uncleaned packagings:**  
**Recommendation:** Disposal must be made according to official regulations.  
**Recommended cleaning agent:** Water, if necessary with cleaning agent.

**SECTION 14: Transport information**

<b>UN-Number</b> <b>ADR, IMDG, IATA</b>	UN3087
<b>14.2 UN proper shipping name</b> <b>ADR</b> <b>IMDG, IATA</b>	3087 OXIDIZING SOLID, TOXIC, N.O.S. (Sodium dichromate, dihydrate) OXIDIZING SOLID, TOXIC, N.O.S. (Sodium dichromate, dihydrate)
<b>14.3 Transport hazard class(es)</b> <b>ADR</b>	
<b>Class</b> <b>Label</b> <b>IMDG, IATA</b>	5.1 (OT2) Oxidising substances. 5.1+6.1
<b>Class</b> <b>Label</b>	5.1 Oxidising substances. 5.1+6.1
<b>Packing group</b> <b>ADR, IMDG, IATA</b>	II
<b>14.5 Environmental hazards:</b>	Environmentally hazardous substance, solid
<b>14.6 Special precautions for user</b> <b>Kemler Number:</b>	Warning: Oxidising substances. 56
<b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC</b> <b>Code</b>	Not applicable.
<b>Transport/Additional information:</b>	
<b>ADR</b> <b>Excepted quantities (EQ):</b> <b>Limited quantities (LQ)</b> <b>Transport category</b> <b>Tunnel restriction code</b>	E2 1 kg 2 E
<b>UN "Model Regulation":</b>	UN3087, OXIDIZING SOLID, TOXIC, N.O.S. (Sodium dichromate, dihydrate), 5.1 (6.1), II

**SECTION 15: Regulatory information**

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**  
**Australian Inventory of Chemical Substances** Substance is listed.  
**Standard for the Uniform Scheduling of Medicines and Poisons** Substance is not listed.  
**National regulations**  
**Information about limitation of use:**  
Workers should not be exposed to this hazardous material. Exceptions can be made by the authorities in certain exceptional cases.  
Employment restrictions concerning young persons must be observed.  
Employment restrictions concerning women of child-bearing age must be observed.  
For use only by technically qualified individuals.  
**Classification according to VbF:** Not applicable  
**Water hazard class:** Water danger class 3 (Self-assessment): extremely hazardous for water.  
**Other regulations, limitations and prohibitive regulations**  
**ELINCS (European List of Notified Chemical Substances)** Substance is not listed.  
**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.**  
This substance is included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH).  
**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 listed.  
**REACH - Pre-registered substances** Substance is listed.  
**15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**SECTION 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

**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)  
ICAO: International Civil Aviation Organization  
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  
IATA: International Air Transport Association  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances

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CAS: Chemical Abstracts Service (division of the American Chemical Society)  
VbF: Verordnung über brennbare Flüssigkeiten, Österreich (Ordinance on the storage of combustible liquids, Austria)  
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)  
Ox. Sol. 2: Oxidising Solids, Hazard Category 2  
Acute Tox. 3: Acute toxicity, Hazard Category 3  
Acute Tox. 4: Acute toxicity, Hazard Category 4  
Acute Tox. 2: Acute toxicity, Hazard Category 2  
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B  
Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1  
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1  
Muta. 1B: Germ cell mutagenicity, Hazard Category 1B  
Carc. 1B: Carcinogenicity, Hazard Category 1B  
Repr. 1B: Reproductive toxicity, Hazard Category 1B  
STOT RE 1: Specific target organ toxicity - Repeated exposure, Hazard Category 1  
Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1  
Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1

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