

SAFETY DATA SHEET

Chromic acid crystals

05346681

1. Identification of the substance/preparation and of the company/undertaking

Identification of the substance or preparation

Product name : Chromic acid crystals**Use of the substance/preparation** : Synthetic chemical**Supplier/Manufacturer** : LANXESS Deutschland GmbH, Industrial & Environmental Affairs
51369 Leverkusen, Germany, Telephone: +49 214 30 65109
E-mail: infosds@lanxess.com**Emergency telephone number** : +49 214 30 99300 (Sicherheitszentrale Chemiepark Leverkusen)

2. Hazards identification

The substance is classified as dangerous according to Directive 67/548/EEC and its amendments.

Physical/chemical hazards : Explosive when mixed with combustible material.**Human health hazards** : May cause cancer. May cause heritable genetic damage. Possible risk of impaired fertility. Also very toxic by inhalation. Also toxic in contact with skin and if swallowed. Also toxic: danger of serious damage to health by prolonged exposure through inhalation. Causes severe burns. May cause sensitisation by inhalation and skin contact.**Environmental hazards** : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.**Additional warning phrases** : Restricted to professional users.

See section 11 for more detailed information on health effects and symptoms.

3. Composition/information on ingredients

Substance/preparation : Substance

Ingredient name	CAS number	%	EC number	Classification
chromium (VI) trioxide	1333-82-0		215-607-8	O; R9 Carc. Cat. 1; R45 Muta. Cat. 2; R46 Repr. Cat. 3; R62 T+; R26 T; R24/25, R48/23 C; R35 R42/43 N; R50/53

Occupational exposure limits, if available, are listed in section 8.

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4. First-aid measures

First-aid measures

- Inhalation** : Get medical attention immediately. Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In the event of any complaints or symptoms, avoid further exposure.
- Ingestion** : Get medical attention immediately. Allow the patient to drink 5 - 10 g ascorbic acid (not effervescent tablets) dissolved in water. This dose can be repeated several times.
- Skin contact** : In case of contact, immediately flush skin with plenty of water. Get medical attention immediately. If the skin becomes scratched or wounded, dab it with saturated gauze pads or compresses using a freshly made up ascorbic acid solution (10 g in 100 g water). Seek medical advice immediately. Give the patient 2 g ascorbic acid (vitamin C) immediately.
- Eye contact** : Get medical attention immediately. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

See section 11 for more detailed information on health effects and symptoms.

5. Fire-fighting measures

Extinguishing media

- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Explosive when mixed with combustible material. This material increases the risk of fire and may aid combustion.
Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. This material is very toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous combustion products** : Decomposition products may include the following materials:
metal oxide/oxides
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Provide adequate ventilation. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Large spill** : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.
- Small spill** : Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Persons with a history of skin sensitisation problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not get in eyes or on skin or clothing. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from combustible material. Empty containers retain product residue and can be hazardous.
- Storage** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Separate from reducing agents and combustible materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
- Packaging materials**
- Recommended** : Use original container.

8. Exposure controls/personal protection

Exposure limit values : Not available.

chromium (VI) trioxide:

No workplace limit value(OEL) fixed. Additional protective measures must be complied with, in particular:

- Measurements for the early detection of increased exposure as a result of an unforeseen incident;
- Cordoning off of the hazardous areas and display of warning and hazard signs, including a sign saying "Smoking prohibited", in areas where exposure is possible;
- Extracted air must not be returned to the system without being treated first.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

Exposure controls

Occupational exposure controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Recommended: In case of dust formation particle filter P3.

Hand protection : Chemical-resistant, impervious gloves or gauntlets complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
<1 hours (breakthrough time): Butyl rubber - IIR, Fluorinated rubber - FKM, Polychloroprene - CR, Polyvinyl chloride - PVC. After contamination with product change the gloves immediately and dispose of them according to relevant national and local regulations

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
Recommended: Tightly fitting safety goggles.

Skin protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Recommended: chemical-resistant protective suit

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and chemical properties

General information

Appearance

Physical state : Solid.
Colour : Red.
Odour : Odourless.

Important health, safety and environmental information

pH : <1 [Conc. (% w/w): 10%]
Melting point : 196°C
Density : 2.7 kg/L
Bulk density: : 1300 kg/m³
Solubility : 1654 g/l (water)

10. Stability and reactivity

Stability : The product is stable.
Decomposition temperature : 196°C
Conditions to avoid : Avoid exposure - obtain special instructions before use. Avoid release to the environment.
Materials to avoid : Highly reactive or incompatible with the following materials: combustible materials reducing materials
Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Potential acute health effects

Inhalation : Very toxic by inhalation. May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. May cause sensitisation by inhalation. Toxic: danger of serious damage to health by prolonged exposure through inhalation.
Ingestion : Toxic if swallowed. May cause burns to mouth, throat and stomach.
Skin contact : Severely corrosive to the skin. Causes severe burns. Toxic in contact with skin. May cause sensitisation by skin contact.
Eye contact : Severely corrosive to the eyes. Causes severe burns.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure	Test
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Product/ingredient name	Result	Species	Dose	Exposure	Test
Chromic acid crystals	LD50	- Rat	52 mg/kg	-	-
	Oral				
	LD50	- rabbit	57 mg/kg	-	-
	Dermal				
	LC50	- Rat	0.217 mg/L	4 hours	-
	Inhalation				
	Dusts and mists				

Skin and mucous membrane compatibility / Sensitisation

	<u>Ingredient name</u>	<u>Result</u>
Skin contact	: chromium (VI) trioxide	Severe irritant
	<u>Ingredient name</u>	<u>Result</u>
Eye contact	: chromium (VI) trioxide	Severe irritant

Potential chronic health effects

Carcinogenicity	: May cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity	: May cause heritable genetic effects.
Fertility effects	: May impair fertility, based on animal data.

Over-exposure signs/symptoms

Inhalation	: Adverse symptoms may include the following: wheezing and breathing difficulties asthma
Ingestion	: Adverse symptoms may include the following: stomach pains
Skin	: Adverse symptoms may include the following: pain or irritation redness blistering may occur
Eyes	: Adverse symptoms may include the following: pain watering redness
Carcinogenicity	: carcinogenic
Remarks	: Ames-test: positive; mutagenic effects on bacteria Chromium(VI) compounds are absorbed by the body after direct contact with the skin and mucous membranes. In susceptible people sensitisation is possible. Inhalation may lead to ulceration of the mucous membranes of the nose.

12. Ecological information

Ecotoxicity data

Product/ingredient name	Test	Result	Species	Exposure
Chromic acid crystals	-	Acute LC50 100 mg/L	- Fish - Leuciscus idus	96 hours

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

AOX : The product does not contain organically bound halogens which could lead to an AOX value in waste water.




Acute bacterial toxicity (EC50) : 500 mg/l (Pseudomonas fluorescens)













13. Disposal considerations

Methods of disposal : Examine possibilities for re-utilisation. Product residues and uncleaned empty containers should be packaged, sealed, labelled, and disposed of or recycled according to relevant national and local regulations. Where large quantities are concerned, consult the supplier. When uncleaned empty containers are passed on, the recipient must be warned of any possible hazard that may be caused by residues. For disposal within the EC, the appropriate code according to the European Waste List (EWL) should be used. It is among the tasks of the polluter to assign the waste to waste codes specific to industrial sectors and processes according to the European Waste List (EWL).

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

14. Transport information

Regulation	UN number	Proper shipping name	Class	PG	Label	Additional information
ADR/RID	UN1463	CHROMIUM TRIOXIDE, ANHYDROUS	5.1	II	  	Hazard identification number 568 Limited quantity LQ11

Regulation	UN number	Proper shipping name	Class	PG	Label	Additional information
GGVSE	UN1463	CHROMIUM TRIOXIDE, ANHYDROUS	5.1	II	  	Hazard identification number 568 Limited quantity LQ11
ADNR	UN1463	CHROMIUM TRIOXIDE, ANHYDROUS	5.1	II	  	Hazard identification number 568 Limited quantity LQ11
IMDG	UN1463	CHROMIUM TRIOXIDE, ANHYDROUS	5.1	II	  	-
IATA	UN1463	CHROMIUM TRIOXIDE, ANHYDROUS	5.1	II	  	Passenger aircraft 508: 5 kg Cargo aircraft 511: 25 kg

PG: Packing group

Oxidizing agent.
Toxic.
Corrosive.
Keep separated from foodstuffs.

Regulation	UN number	Proper shipping name	Class	PG	Label	Additional information
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15. Regulatory information

EU regulations

Classification and labeling have been determined according to EU Directives 67/548/EEC and 1999/45/EC (including amendments) and take into account the intended product use.

Industrial applications.

Hazard symbol or symbols :



Oxidising, Very toxic, Dangerous for the environment

Contains

chromium (VI) trioxide

Additional warning phrases

: Restricted to professional users.

Risk phrases

: R9- Explosive when mixed with combustible material.
 R45- May cause cancer.
 R46- May cause heritable genetic damage.
 R62- Possible risk of impaired fertility.
 R26- Very toxic by inhalation.
 R24/25- Toxic in contact with skin and if swallowed.
 R48/23- Toxic: danger of serious damage to health by prolonged exposure through inhalation.
 R35- Causes severe burns.
 R42/43- May cause sensitisation by inhalation and skin contact.
 R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases

: S53- Avoid exposure - obtain special instructions before use.
 S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
 S60- This material and its container must be disposed of as hazardous waste.
 S61- Avoid release to the environment. Refer to special instructions/safety data sheet.

16. Other information

Full text of R-phrases referred to in sections 2 and 3 - Europe

: R9- Explosive when mixed with combustible material.
 R45- May cause cancer.
 R46- May cause heritable genetic damage.
 R62- Possible risk of impaired fertility.
 R26- Very toxic by inhalation.
 R24/25- Toxic in contact with skin and if swallowed.
 R48/23- Toxic: danger of serious damage to health by prolonged exposure through inhalation.
 R35- Causes severe burns.
 R42/43- May cause sensitisation by inhalation and skin contact.
 R50/53- Very toxic to aquatic organisms, may cause long-term

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adverse effects in the aquatic environment.

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Notice to reader

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The above details do not imply any guarantee concerning composition, properties or performance.