

SAFETY DATA SHEET



CHROMIUM TRIOXIDE (CRYSTALS)

Version Revision Date: SDS Number: Date of last issue: 21.05.2019
3.0 22.05.2019 103000009062 Country / Language: ZA / 6N

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : CHROMIUM TRIOXIDE (CRYSTALS)
Product code : 05346681

Manufacturer or supplier's details

Supplier : Brother CISA (Pty) Ltd.
 Karbochem Road, Private Bag X6600
 2940 Newcastle, South Africa
Telephone : +27343707000 Sales Office
 +27343707000 Manufacturing Plant

E-mail address of person : infosds@lanxess.com
responsible for the SDS

Emergency telephone number : +27343707000

Recommended use of the chemical and restrictions on use

Recommended use : Industrial use

2. HAZARDS IDENTIFICATION

GHS Classification

Oxidizing solids : Category 1
Acute toxicity (Oral) : Category 3
Acute toxicity (Inhalation) : Category 2
Acute toxicity (Dermal) : Category 2
Skin corrosion/irritation : Sub-category 1A
Serious eye damage/eye irri- : Category 1
tation
Respiratory sensitisation : Category 1
Skin sensitisation : Category 1
Germ cell mutagenicity : Category 1B
Carcinogenicity : Category 1A
Reproductive toxicity : Category 2

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Specific target organ toxicity - single exposure : Category 3 (Respiratory system, Narcotic effects)

Specific target organ toxicity - repeated exposure : Category 1

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1

GHS label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : H271 May cause fire or explosion; strong oxidizer.
H301 Toxic if swallowed.
H310 + H330 Fatal in contact with skin or if inhaled.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H340 May cause genetic defects.
H350 May cause cancer.
H361f Suspected of damaging fertility.
H372 Causes damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220 Keep away from clothing and other combustible materials.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P262 Do not get in eyes, on skin, or on clothing.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of

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the workplace.

P273 Avoid release to the environment.

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

P283 Wear fire resistant or flame retardant clothing.

P284 Wear respiratory protection.

Response:

P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

P306 + P360 IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P361 + P364 Take off immediately all contaminated clothing and wash it before reuse.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

P371 + P380 + P375 In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

P391 Collect spillage.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P420 Store separately.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

Causes digestive tract burns.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

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Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
chromium (VI) trioxide	1333-82-0	>= 100

4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Symptoms of poisoning may appear several hours later.
Do not leave the victim unattended.
- If inhaled : Get medical attention immediately.
Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If unconscious, place in recovery position and get medical attention immediately.
Maintain open airway.
Loosen tight clothing such as a collar, tie, belt or waistband.
Chemical burns must be treated promptly by a physician.
If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- In case of skin contact : After contact with skin, wash immediately with plenty of water.
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.
Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
Take victim immediately to hospital.
If on clothes, remove clothes.
- In case of eye contact : Get medical attention immediately.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue to rinse for at least 10 minutes.
Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
Chemical burns must be treated promptly by a physician.
- If swallowed : Get medical attention immediately.
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- Allow the patient to drink 5 - 10 g ascorbic acid (not effervescent tablets) dissolved in water. This dose can be repeated several times.
Take victim immediately to hospital.
Keep respiratory tract clear.
- Most important symptoms and effects, both acute and delayed : Toxic if swallowed.
Fatal in contact with skin or if inhaled.
May cause an allergic skin reaction.
Causes serious eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause genetic defects.
May cause cancer.
Suspected of damaging fertility.
Causes damage to organs through prolonged or repeated exposure.
Causes severe burns.
- Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.
- Notes to physician : No special measures required.
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5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- Unsuitable extinguishing media : Do NOT use water jet.
- Specific hazards during fire-fighting : oxidizing
May cause fire or explosion.

Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Metal oxides
- Specific extinguishing methods : 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.
For safety reasons in case of fire, cans should be stored separately in closed containments.
Use a water spray to cool fully closed containers.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.
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6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Avoid dust formation.
Avoid breathing dust.
Ensure adequate ventilation.
Evacuate personnel to safe areas.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).
Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Avoid dust formation.
Provide appropriate exhaust ventilation at places where dust is formed.
Keep away from combustible material.
- Advice on safe handling : Avoid formation of respirable particles.
Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Provide sufficient air exchange and/or exhaust in work rooms.
Dispose of rinse water in accordance with local and national regulations.
Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
- Conditions for safe storage : Prevent unauthorized access.
Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

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Materials to avoid : Do not store near acids.
Keep away from reducing agents.

Further information on storage stability : No decomposition if stored and applied as directed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
chromium (VI) trioxide	1333-82-0	TWA	0.05 mg/m ³ (chromium)	ACGIH

Personal protective equipment

Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.
Dust safety masks are recommended when the dust concentration is more than 10 mg/m³.

Filter type : P3 filter

Hand protection

Material : Butyl rubber - IIR
Wearing time : < 60 min

Material : Fluorinated rubber - FKM
Wearing time : < 60 min

Material : Polychloroprene - CR
Wearing time : < 60 min

Material : Polyvinyl chloride - PVC
Wearing time : < 60 min

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves. After contamination with product change the gloves immediately and dispose of them according to relevant national and local regulations

Eye protection : Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Complete suit protecting against chemicals

Hygiene measures : Avoid contact with skin, eyes and clothing.
When using do not eat or drink.

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When using do not smoke.
Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Crystals.
Colour	:	red
Odour	:	odourless
Odour Threshold	:	No data available
pH	:	< 1 Concentration: 10 %
Melting point/range	:	196 °C Decomposes before melting.
Flash point	:	196 °C Decomposition No data available
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	2.7 kg/l (20 °C)
Bulk density	:	1,430 - 1,630 kg/m ³
Solubility(ies) Water solubility	:	1,667 g/l
Partition coefficient: n-octanol/water	:	No data available
Ignition temperature	:	No data available

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Decomposition temperature : 196 °C
Viscosity : No data available
Explosive properties : No data available
Oxidizing properties : May cause fire or explosion; strong oxidizer.
Molecular weight : 99.99 g/mol

10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : Hazardous reactions or instability may occur under certain conditions of storage or use.
May form explosive mixtures in presence of oxidizing substances (gas/dust).
Conditions to avoid : Heat, flames and sparks.
Incompatible materials : Highly reactive or incompatible with the following materials:
Reducing agents
Combustible substances
Hazardous decomposition products : No decomposition if stored and applied as directed.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Toxic if swallowed.
Fatal in contact with skin or if inhaled.

Components:

chromium (VI) trioxide:

Acute oral toxicity : LD50 (Rat, male and female): 52 mg/kg
Method: OECD Test Guideline 401
Acute inhalation toxicity : LC50 (Rat, male and female): 217 mg/m³
Exposure time: 4 h
Test atmosphere: dust/mist
Acute dermal toxicity : LD50 (Rabbit, male and female): 57 mg/kg
Method: OECD Test Guideline 402

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Skin corrosion/irritation

Causes severe burns.

Components:

chromium (VI) trioxide:

Species: Rabbit

Result: Corrosive after 3 minutes or less of exposure

Serious eye damage/eye irritation

Causes serious eye damage.

Components:

chromium (VI) trioxide:

Species: Rabbit

Result: Risk of serious damage to eyes.

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

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

Components:

chromium (VI) trioxide:

Result: May cause sensitisation by inhalation.

Result: May cause sensitisation by skin contact.

Germ cell mutagenicity

May cause genetic defects.

Components:

chromium (VI) trioxide:

Genotoxicity in vitro

: Test system: Bacteria
Method: OECD Test Guideline 471
Result: positive

Test system: Mammalian-Animal
Method: OECD Test Guideline 473
Result: positive

Test system: Mammalian-Animal
Method: OECD Test Guideline 476
Result: positive

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Germ cell mutagenicity - Assessment : In vivo tests showed mutagenic effects

Carcinogenicity

May cause cancer.

Components:

chromium (VI) trioxide:

Remarks: 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.

Carcinogenicity - Assessment : Human carcinogen.

Reproductive toxicity

Suspected of damaging fertility.

Components:

chromium (VI) trioxide:

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, based on animal experiments.

STOT - single exposure

Not classified based on available information.

Components:

chromium (VI) trioxide:

Assessment: May cause respiratory irritation.

STOT - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Components:

chromium (VI) trioxide:

Assessment: Causes damage to organs through prolonged or repeated exposure.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks: 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.

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Components:**chromium (VI) trioxide:**

Remarks: 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****Components:****chromium (VI) trioxide:**

- Toxicity to fish : LC50 (Carassius auratus (goldfish)): 37.5 mg/l
Exposure time: 96 h
Remarks: For risk assessment data on chromium (VI)
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.53 mg/l
Exposure time: 24 h
Remarks: For risk assessment data on chromium (VI)
- Toxicity to algae : EC50 (Chlorella vulgaris (Fresh water algae)): 0.233 mg/l
Exposure time: 72 h
Remarks: For risk assessment data on chromium (VI)
- NOEC (algae): 0.1 mg/l
Exposure time: 8 Days
Remarks: For risk assessment data on chromium (VI)
- M-Factor (Acute aquatic toxicity) : 1
- Toxicity to microorganisms : EC50 (Escherichia coli): 3.5 mg/l
Exposure time: 24 h
Remarks: For risk assessment data on chromium (VI)
- Toxicity to fish (Chronic toxicity) : NOEC: 0.051 mg/l
Exposure time: 60 d
Species: Oncorhynchus mykiss (rainbow trout)
Remarks: For risk assessment data on chromium (VI)
- Toxicity to daphnia and other : NOEC: 0.0047 mg/l
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aquatic invertebrates (Chronic toxicity)

Exposure time: 7 Days
Species: Ceriodaphnia dubia (Water flea)
Remarks: For risk assessment data on chromium (VI)

NOEC: 0.06 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Remarks: For risk assessment data on chromium (VI)

M-Factor (Chronic aquatic toxicity) : 10

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

14. TRANSPORT INFORMATION

National Regulations

SANS

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UN number : UN 1463
Proper shipping name : CHROMIUM TRIOXIDE, ANHYDROUS
Class : 5.1
Packing group : II
Labels : 5.1 6.1 8



Environmentally hazardous : yes



International Regulations

IATA-DGR

UN/ID No. : UN 1463
Proper shipping name : Chromium trioxide, anhydrous
Class : 5.1
Packing group : II
Labels : 5.1 6.1 8



Packing instruction (cargo aircraft) : 562: 25.00 KG
Packing instruction (passenger aircraft) : 558: 5.00 KG
Environmentally hazardous : yes



IMDG-Code

UN number : UN 1463
Proper shipping name : CHROMIUM TRIOXIDE, ANHYDROUS
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Marine pollutant : yes



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

Not applicable for product as supplied.

Hazard statements : Oxidizing agent.
Toxic.
Corrosive.
Environmentally hazardous substance.
Keep separated from foodstuffs.

15. REGULATORY INFORMATION

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

International Chemical Weapons Convention (CWC) : Not applicable
Schedules of Toxic Chemicals and Precursors

Other international regulations

No data available

16. OTHER INFORMATION

Full text of other abbreviations

ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

ACGIH / TWA : 8-hour, time-weighted average

The information provided in this 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.
