

CHROME OXIDE GREEN — REFRACTORY GRADE — Cr₂O₃

Series: DELIKEOXIDE G-5001 · G-5002 · G-5003 · G-5006 (Cr(VI) ≤ 200 ppm) · G-5891 · G-5899 · G-5996 · G-5070 (Cr(VI) ≤ 5 ppm).

NOT CLASSIFIED GHS / CLP (EC) 1272/2008	LD50 > 5000 MG/KG · ORAL RAT	2435 °C MELTING POINT	NOT DANGEROUS GOODS IMDG · IATA · ADR
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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1.1 PRODUCT IDENTIFIER

Name: CHROME OXIDE GREEN

Synonyms: Cr₂O₃; chromium oxide greens; chromium(III) oxide; chromia; chromium(3+) oxide; chromic oxide; chromium green oxide; C.I. 77288; dichromium trioxide; Green Cinnabar; Ultramarine green; Green rouge; casalis green; chromium sesquioxide; leaf green; oil green; green chromic oxide; Chromium Oxide Green Deep; Opaque Oxide of Chromium; Oxide of Chromium

CAS Number: 1308-38-9 · EC number: 215-160-9

1.2 RELEVANT IDENTIFIED USES AND USES ADVISED AGAINST

Industrial uses: pigment for coatings, plastics, construction and ceramics; refractory grit; aluminothermic feedstock; polishing abrasive. Uses advised against: no further relevant information available.

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Manufacturer: Xi'an Delike Chemical Co., Ltd.

Address: Room 8-2608, Mingyue Hongcheng, No. 8, Liyuan Road, Weiyang District, Xi'an, Shaanxi, China

Emergency Tel: +86 (0)29 8579 5526 · Email: sds@delikechem.com · sales@chromeoxidegreen.com

2. HAZARD(S) IDENTIFICATION

2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

Classification according to Regulation (EC) No 1272/2008 (CLP):

Physical hazards Not Classified Health hazards Not Classified Environmental hazards Not Classified

OSHA Regulatory: this product is hazardous under the OSHA Hazard Communication Standard as a particulate nuisance dust.

2.2 LABEL ELEMENTS

Hazard statements: NC — Not Classified. No pictogram, no signal word, no precautionary statements required under CLP.

2.3 OTHER HAZARDS

This product does not contain any substances classified as PBT or vPvB.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical characterisation: Substances.

CAS NO.	DESCRIPTION	CONTENT	CLASSIFICATION
1308-38-9	CHROMIUM (III) OXIDE · EC 215-160-9 · Pigment Green 17, C.I. 77288	> 98 %	Not classified (CLP)
—	Hexavalent chromium compounds (trace)	Regular tier ≤ 200 ppm · Low-Cr(VI) tier ≤ 5 ppm	Below threshold · not an SVHC as supplied

4. FIRST AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES

INHALATION	If exposed to excessive levels of dust or fumes, remove to fresh air. Get medical attention if cough or other symptoms develop.
INGESTION	Contact physician if a larger quantity has been consumed.
SKIN CONTACT	Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing.
EYE CONTACT	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists after washing.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Inhalation	Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.
Ingestion	Due to the physical nature of this material it is unlikely that swallowing will occur.
Skin contact	Prolonged contact may cause redness, irritation and dry skin.
Eye contact	May cause temporary eye irritation.

4.3 INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

Notes for the doctor: no specific recommendations — treat symptomatically.

5. FIREFIGHTING MEASURES

5.1 EXTINGUISHING MEDIA

Suitable: use fire-extinguishing media suitable for the surrounding fire.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Flammability class: not flammable. Specific hazards: **fire conditions may produce small amounts of hexavalent chromium.**

5.3 ADVICE FOR FIREFIGHTERS

Protective actions during firefighting: use protective equipment appropriate for surrounding materials.

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

For personal protection, see Section 8.

6.2 ENVIRONMENTAL PRECAUTIONS

Avoid spreading dust or contaminated materials. Avoid discharge into drains, sewers or watercourses, or onto the ground. Avoid spillage or runoff entering drains, sewers or watercourses.

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

Remove spillage with a vacuum cleaner; if not possible, collect with shovel or broom. Avoid generation and spreading of dust.

6.4 REFERENCE TO OTHER SECTIONS

See Sections 8 and 13.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING

Do not eat, drink or smoke when using the product. Good personal hygiene procedures should be implemented. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. **For pallets wrapped in polyethylene plastic, removal may cause an electrostatic spark; removal of the wrap should not be done in the presence of flammable vapours.**

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Keep container dry, protected from moisture and contamination. Product shelf life 10 years; packaging shelf life 5 years (25 kg) / 3 years (1 t big bag).

7.3 SPECIFIC END USE(S)

The identified uses for this product are detailed in Section 1.2.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

SUBSTANCE	LIMIT	TYPE	SOURCE
CHROMIUM (III) OXIDE	0.5 mg/m³	Long-term exposure limit (8-hour TWA)	ACGIH TLV
CHROMIUM (III) OXIDE	—	Short-term exposure limit (15-minute)	ACGIH

ACGIH = American Conference of Governmental Industrial Hygienists · Threshold Limit Values (2005).

8.2 EXPOSURE CONTROLS

Appropriate engineering controls	Provide adequate ventilation. Avoid inhalation of dust. Observe any occupational exposure limits for the product or ingredients.
Eye / face protection	Chemical splash goggles.
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard, if risk assessment indicates skin contact is possible.
Other skin and body protection	Provide eyewash station and safety shower.
Hygiene measures	Good personal hygiene practices when working with chemical products. Wash hands at the end of each work shift and before eating, smoking and using the toilet.
Respiratory protection	A respiratory protection program meeting OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Dusty powder	Form	Crystalline
Colour	Green	Odour	Odourless
Odour threshold	Not determined	pH-value	5 – 9 @ 10 % (diluted solution)
Melting point / freezing point	2435 °C	Initial boiling point and range	Not applicable (sublimes at very high temperature)
Flash point	Not applicable	Flammability (solid, gas)	Product is not flammable
Ignition temperature	Not determined	Decomposition temperature	2266 °C
Relative density	5.1	Bulk density	600 – 1500 kg/m³
Solubility(ies)	Insoluble in water	VOC content	None

9.2 OTHER INFORMATION

No further relevant information available.

10. STABILITY AND REACTIVITY

10.1 REACTIVITY

The following materials may react with the product: molten alkali at high temperature; chlorine trifluoride — producing flame; glycerol — may produce an explosion.

10.2 CHEMICAL STABILITY

Stable at normal ambient temperatures and when used as recommended. Thermal decomposition / conditions to be avoided: no decomposition if used according to specifications.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS

Will not polymerize.

10.4 CONDITIONS TO AVOID

Water, moisture (hygiene of storage only — no chemical reaction).

10.5 MATERIALS TO AVOID

Chromic oxide may react with molten alkali at high temperatures under oxidising conditions. May react with lithium, nitroalkanes, dirubidium acetylide, oxygen difluoride and other strong oxidizers. Reaction with chlorine trifluoride produces flame. Contact with glycerol and chromic oxide may produce an explosion.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

A small amount (< 0.1 % as Cr) of reversion to hexavalent chromium may occur if the dry chromium(III) oxide powder is exposed to elevated temperatures.

11. TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

ENDPOINT	RESULT	SOURCE / NOTE
Acute toxicity — oral	LD50 > 5000 mg/kg (rat)	Literature survey, powder form
Acute toxicity — inhalation	LC50 5.41 mg/l (dust/mist)	Literature survey, powder form
Dermal	Non-irritant (rabbit skin, 24 h)	Literature survey
Chronic oral	No treatment-related effects	Rats fed up to 5 % chromic oxide in diet for 2 years — Ivankovic S. & Preussman R., Food Cosmet. Toxicol. 13, 347–351 (1975)
Carcinogenicity	IARC not listed · NTP not listed · OSHA not regulated	Trivalent chromium is not listed as a carcinogen by NTP, IARC or ACGIH

This product is a trivalent chromium compound containing less than 100 ppm hexavalent chromium.

11.2 SYMPTOMS AND ROUTES OF ENTRY

Inhalation: dust may irritate the respiratory system; symptoms may include coughing; prolonged inhalation may be harmful. Ingestion: no harmful effects expected from quantities likely to be ingested by accident; possible nausea or diarrhoea if large amounts ingested. Skin: substance may cause slight irritation. Eyes: dust in the eyes will cause irritation. Routes of entry: inhalation, skin absorption, ingestion, skin and/or eye contact.

12. ECOLOGICAL INFORMATION

12.1 ECOTOXICITY

Aquatic toxicity (fish, Zebra barb): LC0 (96 hours) > 10000 mg/l. Bacterial toxicity: harmless against Escherichia coli at 1000 mg/l and Pseudomonas fluorescens at > 10000 mg/l. Water hazard classification: according to the present state of knowledge, this pigment slurry is not hazardous to water. Biological or chemical oxygen demand: slight.

12.2 PERSISTENCE AND DEGRADABILITY

The product contains only inorganic substances which are not biodegradable.

12.3 BIOACCUMULATIVE POTENTIAL

Bioaccumulation is unlikely to be significant because of the low water-solubility of this product.

12.4 MOBILITY IN SOIL

The product is insoluble in water.

12.5 RESULTS OF PBT AND VPVB ASSESSMENT

This product does not contain any substances classified as PBT or vPvB.

12.6 OTHER ADVERSE EFFECTS

No further relevant information available. Not considered toxic to fish.

13. DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

Waste to be treated as controlled waste. Dispose in accordance with federal, state and local regulations. Reuse or recycle products wherever possible; dispose of waste to a licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

13.2 WASTE CLASS

Product does not exceed the RCRA extraction procedure limit of 5 ppm for total soluble chromium as shipped from the manufacturer. This product, when discarded as sold, is not an RCRA hazardous waste. Under RCRA it is the responsibility of the product user to determine at the time of disposal whether material containing the product should be classified as hazardous waste (40 CFR 261.20–24). Chemical processing of this product (particularly at elevated temperatures) can cause reactions producing substances exceeding RCRA limits — wastes should be tested to determine proper classification. **Incineration is not recommended, as some trivalent chromium may convert to the hexavalent form.**

14. TRANSPORT INFORMATION

The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, DOT, ADR/RID).

14.1 UN number	Not applicable	14.2 UN proper shipping name	Not applicable
14.3 Transport hazard class(es)	Not applicable	14.4 Packing group	Not applicable
14.5 Environmental hazards	No	14.6 Special precautions for user	Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: not applicable.

15. REGULATORY INFORMATION

15.1 US FEDERAL REGULATIONS

SARA 302 / EPCRA RQ	None of the ingredients are listed or exempt
CERCLA / Superfund RQ	None of the ingredients are listed or exempt
SARA 313 Emission Reporting	CHROMIUM (III) OXIDE — 0.10 % threshold
CAA Accidental Release Prevention	None of the ingredients are listed or exempt

15.2 US STATE REGULATIONS

California Prop 65	Warning applies: contains chemicals, as trace impurities and not intentionally added, known to the State of California to cause cancer and birth defects or other reproductive harm
Massachusetts · New Jersey “Right To Know”	CHROMIUM (III) OXIDE — listed
Rhode Island · Minnesota · Pennsylvania	Not listed

15.3 INVENTORIES (ALL INGREDIENTS LISTED OR EXEMPT)

EU EINECS · Canada DSL · US TSCA (TSCA 12(b) export notification: no) · Australia AICS · Japan MITI · Korea KECI · China IECSC · Philippines PICCS · New Zealand NZIOC

16. OTHER INFORMATION

This information is based on our present knowledge and shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. Department issuing SDS: Xi'an Delike Chemical Co., Ltd. · Email: sds@delikechem.com

Abbreviations and acronyms: REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals · MARPOL: International Convention for the Prevention of Marine Pollution from Ships · IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk · UN: United Nations · NOEC: No Observed Effect Concentration · OECD · ASTM · WAF: Water Accommodated Fraction · ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road · IMDG: International Maritime Code for Dangerous Goods · IATA · GHS: Globally Harmonised System · EINECS · CAS · DNEL: Derived No-Effect Level (REACH) · PNEC: Predicted No-Effect Concentration (REACH) · LC50 · LD50 · PBT: Persistent, Bioaccumulative and Toxic · SVHC: Substances of Very High Concern · vPvB · Ox. Sol. 1 · Acute Tox. 3 · Acute Tox. 2 · Skin Corr. 1A · Resp. Sens. 1 · Skin Sens. 1 · Muta. 1B · Carc. 1A · Repr. 2 · STOT SE 3 · STOT RE 1 · Aquatic Acute 1 · Aquatic Chronic 1