SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Name: Chromium Trioxide

Product Number: All applicable American Elements product codes, e.g. CR6-OX-02 , CR6-OX-025 , CR6-OX-03 , CR6-OX-035 , CR6-OX-04 , CR6-OX-05

CAS #: 1333-82-0

Relevant identified uses of the substance: Scientific research and development

Supplier details:
American Elements
10884 Weyburn Ave.
Los Angeles, CA 90024
Tel: +1 310-208-0551
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Emergency telephone number:
+1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)
GHS03 Flame over circle
Ox. Sol. 1 H271 May cause fire or explosion; strong oxidizer.
GHS06 Skull and crossbones
Acute Tox. 3 H301 Toxic if swallowed.
Acute Tox. 2 H310 Fatal in contact with skin.
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. 1A H340 May cause genetic defects.
Carc. 1A H350 May cause cancer.
Repr. 2 H361 Suspected of damaging fertility or the unborn child.
STOT RE 1 H372 Causes damage to the central nervous system, the lung and the blood through prolonged or repeated exposure. Route of exposure:
Inhalative.
GHS05 Corrosion
Skin Corr. 1A H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.
GHS07
Skin Sens. 1 H317 May cause an allergic skin reaction.

Hazards not otherwise classified No data available
GHS label elements, including precautionary statements
Hazard pictograms



GHS03 GHS05 GHS06 GHS08
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.
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.
H361 Suspected of damaging fertility or the unborn child.
H372 Causes damage to the central nervous system, the lung and the blood through prolonged or repeated exposure. Route of exposure: Inhalative.
Precautionary statements
P221 Take any precaution to avoid mixing with combustibles.
P283 Wear fire/flame resistant/retardant clothing.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor
P303+P361+P353 If on skin (or hair): 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).
P361 Take off immediately all contaminated clothing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
WHMIS classification
C - Oxidizing materials
D1A - Very toxic material causing immediate and serious toxic effects
D2A - Very toxic material causing other toxic effects
E - Corrosive material
Classification system
HMIS ratings (scale 0-4)
(Hazardous Materials Identification System)
HEALTH
FIRE
REACTIVITY
3
0
3
Health (acute effects) = 3
Flammability = 0
Physical Hazard = 3
Other hazards

Results of PBT and vPvB assessment
PBT: N/A
vPvB: N/A

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
CAS No. / Substance Name:
1333-82-0 Chromium(VI) oxide
Identification number(s):
EC number: 215-607-8
Index number: 024-001-00-0

SECTION 4. FIRST AID MEASURES

Description of first aid measures
General information
Immediately remove any clothing soiled by the product.
Remove breathing apparatus only after contaminated clothing has been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.
If inhaled:
Supply patient with fresh air. If not breathing, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.
In case of skin contact:
Immediately wash with soap and water; rinse thoroughly.
Seek immediate medical advice.
In case of eye contact:
Rinse opened eye for several minutes under running water. Consult a physician.
If swallowed:
Do not induce vomiting; immediately call for medical help.
Information for doctor
Most important symptoms and effects, both acute and delayed
Causes severe skin burns.
Causes serious eye damage.
Indication of any immediate medical attention and special treatment needed:
No data available

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media
Suitable extinguishing agents Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
For safety reasons unsuitable extinguishing agents Halocarbon extinguisher
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:
Toxic metal oxide fume
Advice for firefighters
Protective equipment:

Wear self-contained respirator.
Wear fully protective impervious suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Environmental precautions: Do not allow material to be released to the environment without official permits.
Methods and materials for containment and cleanup:
Use neutralizing agent.
Dispose of contaminated material as waste according to section 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.
Reference to other sections
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7. HANDLING AND STORAGE

Handling
Precautions for safe handling
Handle under dry protective gas.
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation 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.
Conditions for safe storage, including any incompatibilities
Requirements to be met by storerooms and receptacles: 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/moisture.
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 water.
Specific end use(s) No data 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.
Control parameters
Components with limit values that require monitoring at the workplace:
1333-82-0 Chromium(VI) oxide (100.0%)

PEL (USA) Long-term value: 0.005* mg/m^3

Ceiling limit value: 0.1** mg/m^3
*as Cr(VI) **as CrO3; see 29 CFR 1910.1026

REL (USA) Long-term value: 0.001 mg/m^3
as Cr; See Pocket Guide Apps. A and C

TLV (USA) Long-term value: 0.05 mg/m^3
as Cr; BEI

EL (Canada) Short-term value: C0.1 mg/m^3

Long-term value: 0.025 mg/m^3
as Cr; ACIGH A1, IARC 1
Ingredients with biological limit values:
1333-82-0 Chromium(VI) oxide (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
Exposure controls
Personal protective equipment
Follow typical protective and hygienic practices for handling chemicals.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of 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 airpurifying
respirators are appropriate. Only use equipment tested and approved under appropriate government standards.
Protection of hands:
Impervious gloves
Inspect gloves prior to use.
The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary 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 goggles
Full face protection
Body protection: Protective work clothing.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties
Appearance:
Form: Crystalline
Color: Dark red
Odor: Not determined
Odor threshold: Not determined.
pH: N/A
Melting point/Melting range: 196 °C (385 °F)
Boiling point/Boiling range: 250 °C (482 °F) (dec)
Sublimation temperature / start: Not determined
Flammability (solid, gas) Contact with combustible material may cause fire.
Ignition temperature: Not determined
Decomposition temperature: Not determined
Autoignition: Not determined.
Danger of explosion: Explosive when mixed with combustible material.
Explosion limits:
Lower: Not determined
Upper: Not determined
Vapor pressure: N/A

Density at 20 °C (68 °F): 2.7 g/cm^3 (22.532 lbs/gal)
Relative density Not determined.
Vapor density N/A
Evaporation rate N/A
Solubility in / Miscibility with
Water at 20 °C (68 °F): 630 g/l
Partition coefficient (n-octanol/water): Not determined.
Viscosity:
Dynamic: N/A
Kinematic: N/A
Other information No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity
May intensify fire; oxidizer.
May cause fire or explosion; strong oxidizer.
Chemical stability Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.
Possibility of hazardous reactions
Reacts with reducing agents
Reacts with flammable substances
Conditions to avoid No data available

Incompatible materials:
Reducing agents
Flammable substances
Water/moisture
Organic materials
Metal powders
Hazardous decomposition products: Toxic metal oxide fume

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute toxicity:
Fatal in contact with skin.
Fatal if inhaled.
Toxic if swallowed.
Danger through skin absorption.
Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.
LD/LC50 values that are relevant for classification:
Oral LD50 80 mg/kg (rat)
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.
ACGIH A1: Confirmed human carcinogen: Agent is carcinogenic to humans based on epidemiologic studies of, or convincing clinical evidence in, exposed humans.
ACGIH A5: Not suspected as a human carcinogen: Not suspected as a human carcinogen on the basis of properly conducted epidemiologic studies in humans.
Studies have sufficiently long follow-up, reliable exposure histories, sufficiently high dose, and adequate statistical power to conclude that exposure to the agent
does not convey a significant risk of cancer to humans. Evidence suggesting a lack of carcinogenicity in experimental animals will be considered if it is supported by
other relevant data.
NTP-K: Known to be carcinogenic: sufficient evidence from human studies.
(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: Carginogenic 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:

Suspected of damaging fertility or the unborn child.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for this substance.
Specific target organ system toxicity - repeated exposure:
Causes damage to the central nervous system, the lung and the blood through prolonged or repeated exposure. Route of exposure: Inhalative.
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

Toxicity
Aquatic toxicity: No data available
Persistence and degradability No data available
Bioaccumulative potential No data available
Mobility in soil No data available
Ecotoxical effects:
Remark: Very toxic for aquatic organisms
Additional ecological information:
Do not allow material to be released to the environment without official permits.
Do not allow product to reach groundwater, water courses, or sewage systems, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
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
Results of PBT and vPvB assessment
PBT: N/A
vPvB: N/A
Other adverse effects No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Recommendation Consult official regulations to ensure proper disposal.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

SECTION 14. TRANSPORT INFORMATION

Class 5.1 Oxidising substances.
Label 5.1+6.1+8
Class 5.1 (OTC) Oxidizing substances
Label 5.1+6.1+8
IMDG, IATA

Class 5.1 Oxidising substances.
Label 5.1+6.1+8
Packing group
DOT, IMDG, IATA II
Environmental hazards: Environmentally hazardous substance, solid
Special precautions for user Warning: Oxidizing substances
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code N/A
Transport/Additional information:
DOT
Marine Pollutant (DOT): No
UN "Model Regulation": UN1463, Chromium trioxide, anhydrous, 5.1 (6.1+8), II

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture
GHS label elements, including precautionary statements
Hazard pictograms
GHS03 GHS05 GHS06 GHS08
Signal word Danger
Hazard statements
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H301 Toxic if swallowed.
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P361 Take off immediately all contaminated clothing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
National regulations
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
All components of this product are listed on the Canadian Domestic Substances List (DSL).
SARA Section 313 (specific toxic chemical listings)
1333-82-0 Chromium(VI) oxide
California Proposition 65
Prop 65 - Chemicals known to cause cancer
1333-82-0 Chromium(VI) oxide

Prop 65 - Developmental toxicity Substance is not listed.
Prop 65 - Developmental toxicity, female
1333-82-0 Chromium(VI) oxide
Prop 65 - Developmental toxicity, male
1333-82-0 Chromium(VI) oxide
Information about limitation of use:
Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.
For use only by technically qualified individuals.
This substance is subject to a Significant New Use Rule (SNUR) promulgated under Section 5(a)(2) of the Toxic Substances Control Act (TSCA). See 40 CFR 721.
This product is being sold for research and development use.
Other regulations, limitations and prohibitive regulations
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.
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.