

1 Identification

Product identifier

Product name: Silver chromate

Stock number: 40107

CAS Number:
7784-01-2

EC number:
232-043-8

Index number:
024-017-00-8

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

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Alfa Aesar
Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757
Email: tech@alfa.com
www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency telephone number:

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS03 Flame over circle

Ox. Sol. 3 H272 May intensify fire; oxidizer.



GHS08 Health hazard

Carc. 1A H350 May cause cancer.



GHS07

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

Hazards not otherwise classified No information known.

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms



GHS03 GHS07 GHS08

Signal word

Danger

Hazard statements

H272 May intensify fire; oxidizer.

H317 May cause an allergic skin reaction.

H350 May cause cancer.

Precautionary statements

P221 Take any precaution to avoid mixing with combustibles.

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P220 Keep/Store away from clothing/combustible materials.

P363 Wash contaminated clothing before reuse.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification

C - Oxidizing materials

D2A - Very toxic material causing other toxic effects



Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH 2 Health (acute effects) = 2

FIRE 0 Flammability = 0

REACTIVITY 2 Physical Hazard = 2

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances

CAS# Description:

7784-01-2 Silver chromate

Product name: Silver chromate	
<div>Identification number(s): EC number: 232-043-8 Index number: 024-017-00-8</div>	(Contd. of page 1)
<div>4 First-aid measures</div> <div>Description of first aid measures After inhalation Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice. After skin contact Immediately 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 a doctor. After swallowing Seek medical treatment. Information for doctor Most important symptoms and effects, both acute and delayed No further relevant information available. Indication of any immediate medical attention and special treatment needed No further relevant information available.</div>	
<div>5 Fire-fighting measures</div> <div>Extinguishing media Suitable extinguishing agents Product is not flammable. Use fire-fighting measures that suit the surrounding fire. 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: Advice for firefighters Protective equipment: Wear self-contained respirator. Wear fully protective impervious suit.</div>	
<div>6 Accidental release measures</div> <div>Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation Environmental precautions: Do not allow material to be released to the environment without proper governmental permits. Methods and material for containment and cleaning up: 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.</div>	
<div>7 Handling and storage</div> <div>Handling Precautions for safe handling 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 Storage 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. Store in the dark. Do not store with organic materials. Store away from metal powders. Further information about storage conditions: Keep container tightly sealed. Store in cool, dry conditions in well sealed containers. Protect from exposure to light. Specific end use(s) No further relevant information available.</div>	
<div>8 Exposure controls/personal protection</div> <div>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: Silver, soluble compounds, as Ag mg/m3 ACGIH TLV 0.01 Austria MAK 0.01 Belgium TWA 0.1 Denmark TWA 0.01 Finland TWA 0.1 France VME 0.1 Germany MAK 0.01 Netherlands TWA 0.01 Japan OEL 0.01 Korea TLV 0.1 Netherlands MAC-TGG 0.01</div>	(Contd. on page 3) USA

Product name: **Silver chromate**

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Norway TWA 0.01
Russia 1-STEL
Sweden NGV 0.1
United Kingdom TWA 0.01
Russia TWA 1-STEL
Switzerland MAK-W 0.01
Finland TWA 0.1
Ireland TWA 0.01
USA PEL 0.01

Chromium (VI) compounds, as Cr

mg/m³
ACGIH TLV 0.05; Confirmed human carcinogen
Belgium TWA 0.01 (insoluble)
0.05 (water soluble)
Germany MAK 0.1 (production)(water soluble)
0.5 (other applications)(water soluble)
Netherlands MAC-TGG 0.01 (water insoluble)
0.025 (water soluble)
0.05-STEL (water soluble)
Poland TWA 0.025; 0.05-STEL
Sweden TWA 0.02
United Kingdom TWA 0.05
USA PEL 0.1 (CrO₃) (ceiling)

7784-01-2 Silver chromate (100.0%)

PEL (USA) Long-term value: 0.005* mg/m³
Ceiling limit value: 0.1** mg/m³
*as Cr(VI) **as CrO₃; see 29 CFR 1910.1026
REL (USA) Long-term value: 0.001 mg/m³
as Cr; See Pocket Guide Apps. A and C
TLV (USA) Long-term value: 0.01 mg/m³
as Cr
EL (Canada) Short-term value: 0.03 mg/m³
Long-term value: 0.01 mg/m³
as Ag

Additional information: No data

Exposure controls

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

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.

Maintain an ergonomically appropriate working environment.

Breathing equipment: Use suitable respirator when high concentrations are present.

Protection of hands:

Impervious gloves

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

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Eye protection: Safety glasses

Body protection: Protective work clothing.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form: Powder
Color: Red-brown
Odor: Odorless
Odor threshold: Not determined.

pH-value: Not applicable.

Change in condition

Melting point/Melting range: Not determined
Boiling point/Boiling range: Not determined
Sublimation temperature / start: Not determined

Flash point: Not applicable
Flammability (solid, gaseous): Contact with combustible material may cause fire.
Ignition temperature: Not determined
Decomposition temperature: Not determined
Auto igniting: Not determined.

Danger of explosion: Not determined.
Explosion limits:
Lower: Not determined
Upper: Not determined
Vapor pressure: Not applicable.
Density at 20 °C (68 °F): 5.63 g/cm³ (46.982 lbs/gal)
Relative density: Not determined.
Vapor density: Not applicable.
Evaporation rate: Not applicable.
Solubility in / Miscibility with
Water: Slightly soluble
Partition coefficient (n-octanol/water): Not determined.
Viscosity:
dynamic: Not applicable.
kinematic: Not applicable.
Other information No further relevant information available.

Product name: Silver chromate

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10 Stability and reactivity

Reactivity May intensify fire; 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 further relevant information available.
Incompatible materials:
Flammable substances
Reducing agents
Organic materials
Metal powders
Light
Hazardous decomposition products: Toxic metal oxide fume

11 Toxicological information

Information on toxicological effects
Acute toxicity: No effects known.
LD/LC50 values that are relevant for classification: No data
Skin irritation or corrosion: May cause irritation
Eye irritation or corrosion: May cause irritation
Sensitization: May cause an allergic skin reaction.
Germ cell mutagenicity: No effects known.
Carcinogenicity:
May cause cancer.
EPA-A: human carcinogen: sufficient evidence from epidemiologic studies to support a causal association between exposure and 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.
NTP-K: Known to be carcinogenic: sufficient evidence from human studies.
Reproductive toxicity: No effects known.
Specific target organ system toxicity - repeated exposure: No effects known.
Specific target organ system toxicity - single exposure: No effects known.
Aspiration hazard: No effects known.
Subacute to chronic toxicity:
Chromium (VI) may cause skin ulceration, gastrointestinal irritation with vomiting and diarrhea, kidney and liver damage. Overexposure may be fatal. Dusts are extremely irritating to the eyes, nose, throat and bronchial tubes. May cause cancers of the lungs, nasal cavity, sinuses, stomach and larynx.
Absorption of silver compounds by ingestion, inhalation or through broken skin can cause argyria, a permanent bluish-grey discoloration of the skin, conjunctiva and mucous membranes.
Subacute to chronic toxicity: No effects known.
Subacute to chronic toxicity: Chromates may cause ulceration and perforation of the nasal septum, liver and kidney damage, and ulceration of the skin.
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

12 Ecological information

Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability No further relevant information available.
Bioaccumulative potential No further relevant information available.
Mobility in soil No further relevant information available.
Ecotoxicological effects:
Remark: Very toxic for aquatic organisms
Additional ecological information:
General notes:
Do not allow product to reach ground water, water course or sewage system.
Do not allow material to be released to the environment without proper governmental permits.
Danger to drinking water if even 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: Not applicable.
vPvB: Not applicable.
Other adverse effects No further relevant information available.

13 Disposal considerations

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

14 Transport information

UN-Number DOT, IMDG, IATA	UN1479
UN proper shipping name DOT IMDG, IATA	Oxidizing solid, n.o.s. (Silver chromate) OXIDIZING SOLID, N.O.S. (Silver chromate)
Transport hazard class(es) DOT	
	
Class Label Class	5.1 Oxidising substances. 5.1 5.1 (O2) Oxidizing substances

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USA

Product name: Silver chromate

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Label
IMDG, IATA

5.1



Class
Label

5.1 Oxidising substances.
5.1

Packing group
DOT, IMDG, IATA

III

Environmental hazards:

Environmentally hazardous substance, solid

Special precautions for user
EMS Number:

Warning: Oxidizing substances
F-A,S-Q

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

Transport/Additional information:

DOT

Marine Pollutant (DOT):

No

UN "Model Regulation":

UN1479, Oxidizing solid, n.o.s. (Silver chromate), 5.1, III

15 Regulatory information

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

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms



GHS03 GHS07 GHS08

Signal word Danger

Hazard statements

H272 May intensify fire; oxidizer.

H317 May cause an allergic skin reaction.

H350 May cause cancer.

Precautionary statements

P221 Take any precaution to avoid mixing with combustibles.

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P220 Keep/Store away from clothing/combustible materials.

P363 Wash contaminated clothing before reuse.

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.

SARA Section 313 (specific toxic chemical listings)

7784-01-2 | Silver chromate

California Proposition 65

Prop 65 - Chemicals known to cause cancer

7784-01-2 | Silver chromate

Prop 65 - Developmental toxicity Substance is not listed.

Prop 65 - Developmental toxicity, female

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Prop 65 - Developmental toxicity, male

7784-01-2 | Silver chromate

Information about limitation of use:

For use only by technically qualified individuals.

This product contains silver and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

This product contains chromium and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.

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 not listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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

Date of preparation / last revision 11/24/2015 / -

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)

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

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

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

vPvB: very Persistent and very Bioaccumulative

ACGIH: American Conference of Governmental Industrial Hygienists (USA)

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USA

Product name: Silver chromate	
OSHA: Occupational Safety and Health Administration (USA) NTP: National Toxicology Program (USA) IARC: International Agency for Research on Cancer EPA: Environmental Protection Agency (USA)	(Contd. of page 5)
USA	