Chemical Safety Data Sheet MSDS / SDS

Chromyl dichloride SDS

Revision Date:2024-04-25 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name: Chromyl dichloride

CAS: 14977-61-8

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

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

Company Identification

Company: Chemicalbook.in

Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090

Telephone: +91 9550333722

SECTION 2: Hazards identification

Classification of the substance or mixture

Oxidizing liquids, Category 1
Skin corrosion, Sub-category 1A

Skin sensitization, Category 1
Germ cell mutagenicity, Category 1B
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1
Carcinogenicity, Category 1B

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H271 May cause fire or explosion; strong oxidizer
H314 Causes severe skin burns and eye damage
H317 May cause an allergic skin reaction
H340 May cause genetic defects
H410 Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

Prevention

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.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P283 Wear fire resistant or flame retardant clothing.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash ... thoroughly after handling.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P203 Obtain, read and follow all safety instructions before use.
P273 Avoid release to the environment.

Response

P306+P360 IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.
P371+P380+P375 In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.
P370+P378 In case of fire: Use ... to extinguish.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P363 Wash contaminated clothing before reuse.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P316 Get emergency medical help immediately.
P321 Specific treatment (see ... on this label).
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P333+P317 If skin irritation or rash occurs: Get medical help.
P362+P364 Take off contaminated clothing and wash it before reuse.
P318 IF exposed or concerned, get medical advice.
P391 Collect spillage.

Storage

P420 Store separately.
P405 Store locked up.

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	Chromyl dichloride
Common names and synonyms:	Chromyl dichloride
CAS number:	14977-61-8
EC number:	239-056-8
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention .

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Do NOT induce vomiting. Refer for medical attention .

Most important symptoms/effects, acute and delayed

Inhalation causes severe irritation of upper respiratory system. Contact with eyes or skin causes irritation and burning. Ingestion causes burning of mouth and stomach. (USCG, 1999)

Indication of immediate medical attention and special treatment needed, if necessary

no data available

SECTION 5: Firefighting measures

Suitable extinguishing media

Excerpt from ERG Guide 137 [Substances - Water-Reactive - Corrosive]: When material is not involved in fire, do not use water on material itself. SMALL FIRE: Dry chemical or CO2. Move containers from fire area if you can do it without risk. LARGE FIRE: Flood fire area with large quantities of water, while knocking down vapors with water fog. If insufficient water supply: knock down vapors only. FIRE INVOLVING TANKS OR CAR/TRAILER LOADS: Cool containers with flooding quantities of water until well after fire is out. Do not get water inside containers. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. (ERG, 2016)

Specific hazards arising from the chemical

Behavior in Fire: Vapors are very irritating to eyes and mucous membranes. May increase severity of fire. (USCG, 1999)

Special protective actions for fire-fighters

Use carbon dioxide, special powder. NO hydrous agents. In case of fire in the surroundings, use appropriate extinguishing media. In case of fire: keep drums, etc., cool by spraying with water. NO direct contact with water.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Personal protection: chemical protection suit including self-contained breathing apparatus. Ventilation. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT wash away into sewer. Do NOT absorb in saw-dust or other combustible absorbents. NEVER direct water jet on liquid.

Environmental precautions

Evacuate danger area! Personal protection: chemical protection suit including self-contained breathing apparatus. Ventilation. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT wash away into sewer. Do NOT absorb in saw-dust or other combustible absorbents. NEVER direct water jet on liquid.

Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

SECTION 7: Handling and storage

Precautions for safe handling

NO contact with flammables. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Fireproof. Separated from combustible substances, reducing agents and food and feedstuffs. Dry. Keep in the dark. Keep in a well-ventilated room.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: (inhalable fraction and vapour): 0.0001 ppm as TWA; 0.00025 ppm as STEL; (skin); (DSEN); (RSEN); A1 (confirmed human carcinogen).EU-OEL: (as Cr): 0.1 mg/m3 as TWA

Biological limit values

no data available

Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Chromium oxychloride is a dark red fuming liquid with a pungent odor. Corrosive to tissue.
Colour:	no data available
Odour:	no data available

Melting point/freezing point:	-96.5°C
Boiling point or initial boiling point and boiling range:	117°C(lit.)
Flammability:	Noncombustible Liquid, but a powerful oxidizer.
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	117°C
Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	Reacts with water (NIOSH, 2016)
Partition coefficient n-octanol/water:	no data available
Vapour pressure:	20 mm Hg (NIOSH, 2016)
Density and/or relative density:	1.911g/mLat 25°C(lit.)
Relative vapour density:	(air = 1): 5.3
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Decomposes violently on contact with water. This produces toxic and corrosive fumes of hydrogen chloride, chlorine, chromium trioxide and chromium trichloride. The substance is a strong oxidant. It reacts violently with combustible and reducing materials. Reacts violently with water, non-metal halides, non-metal hydrides, ammonia and certain common solvents such as alcohol, ether, acetone and turpentine. This generates fire and explosion hazard. Attacks many metals in the presence of water. Incompatible with plastics. Can ignite combustible substances.

Chemical stability

no data available

Possibility of hazardous reactions

CHROMIUM OXYCHLORIDE is a powerful and often violent oxidizing agent. Reacts readily with many inorganic and organic materials in the absence of a dilutent. Contact with hydrogen sulfide or phosphine can cause ignition. Contact with phosphorus tribromide, acetone, ethanol, ether, and turpentine causes ignition. Contact with moist phosphorus or with phosphorus trichloride leads to explosive reaction. Contact with ammonia causes incandescence. Reacts with sodium azide to form chromyl azide, which is explosive in the absence of a dilutent. Causes ignition of flowers of sulfur and of urea on contact. [Bretherick, 1979, p. 822-823].

Conditions to avoid

no data available

Incompatible materials

AIR AND WATER REACTIONS: Fumes in moist air. Hydrolyses vigorously in contact with water, Merck, 11th ed., 1989.CHEMICAL PROFILE: Powerful and often violent oxidant of inorganic and organic materials in the absence of a diluent; contact with ammonia causes incandescence; hydrogen sulfide and phosphine may ignite upon contact; acetone, ethanol, ether, and turpentine ignite on contact; moist phosphorus or phosphorus trichloride explodes, phosphorus tribromide ignites, is explosive in contact with the liquid chloride; interaction with sodium azide to form chromyl azide is explosive in the absence of a diluent; contact with flowers of sulfur causes ignition; urea ignites in contact with the chloride(Bretherick, 1979, p. 822-823). (REACTIVITY, 1999)

Hazardous decomposition products

no data available

SECTION 11: Toxicological information

Acute toxicity

Oral: no data available

Inhalation: no data available

Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC-2, NIOSH-Ca, NTP-K

Reproductive toxicity

no data available

STOT-single exposure

The substance is corrosive to the eyes, skin and respiratory tract. Corrosive on ingestion. Inhalation of the vapour may cause lung oedema. See Notes.

STOT-repeated exposure

Repeated or prolonged contact with skin may cause dermatitis. Repeated or prolonged contact may cause skin sensitization. This substance is probably carcinogenic to humans.

Aspiration hazard

A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: UN1758 (For reference only, please check.)
IMDG: UN1758 (For reference only, please check.)
IATA: UN1758 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: CHROMIUM OXYCHLORIDE (For reference only, please check.)
IMDG: CHROMIUM OXYCHLORIDE (For reference only, please check.)
IATA: CHROMIUM OXYCHLORIDE (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 8 (For reference only, please check.)
IMDG: 8 (For reference only, please check.)
IATA: 8 (For reference only, please check.)

Packing group, if applicable

ADR/RID: I (For reference only, please check.)
IMDG: I (For reference only, please check.)
IATA: I (For reference only, please check.)

Environmental hazards

ADR/RID: Yes
IMDG: Yes
IATA: Yes

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Listed.

China Catalog of Hazardous chemicals 2015

Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home

HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm

IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple

ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg

Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp

ECHA - European Chemicals Agency, website: https://echa.europa.eu/

Other Information

Dissolves chromium trioxide, yielding a powerful oxidant. Reacts violently with fire extinguishing agents such as water. Depending

on the degree of exposure, periodic medical examination is indicated. The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Do NOT take working clothes home. Rinse contaminated clothing with plenty of water because of fire hazard.