Chemical Safety Data Sheet MSDS / SDS

Dimethylammonium 2,4-dichlorophenoxyacetate 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: Dimethylammonium 2,4-dichlorophenoxyacetate

CAS: 2008-39-1

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

Acute toxicity - Category 4, Oral
Skin sensitization, Category 1

Serious eye damage, Category 1
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 2

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H302 Harmful if swallowed
H317 May cause an allergic skin reaction
H318 Causes serious eye damage
H411 Toxic to aquatic life with long lasting effects

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P273 Avoid release to the environment.

Response

P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P333+P317 If skin irritation or rash occurs: Get medical help.
P321 Specific treatment (see ... on this label).
P362+P364 Take off contaminated clothing and wash it before reuse.
P305+P354+P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P317 Get medical help.
P391 Collect spillage.

Storage

none

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:	Dimethylammonium 2,4-dichlorophenoxyacetate
Common names and synonyms:	Dimethylammonium 2,4-dichlorophenoxyacetate
CAS number:	2008-39-1
EC number:	217-915-8
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

Most important symptoms/effects, acute and delayed

SYMPTOMS: Produces local irritation of skin, eyes and mucus membranes. ACUTE/CHRONIC HAZARDS: This chemical is toxic and a local irritant. (NTP, 1992)

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

Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary . Monitor for shock and treat if necessary . Anticipate seizures and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Administer activated charcoal . Monitor body temperature and treat if necessary. Chlorophenoxy herbicides and related compounds

SECTION 5: Firefighting measures

Suitable extinguishing media

Fires involving this material can be controlled with a dry chemical, carbon dioxide or Halon extinguisher. (NTP, 1992)

Specific hazards arising from the chemical

This compound is combustible. (NTP, 1992)

Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours.Avoid contacting with skin and eye. Use personal protective equipment.Wear chemical impermeable gloves. Ensure adequate ventilation.Remove all sources of ignition. Evacuate personnel to safe areas.Keep people away from and upwind of spill/leak.

Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

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

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

Store the container tightly closed in a dry, cool and well-ventilated place. Store apart from foodstuff containers or incompatible materials.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

Component	Dimethylammonium 2,4-dichlorophenoxyacetate
CAS No.	2008-39-1
	Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 10 mg/cu m. /2,4-D/

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 tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

Skin protection

Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	PHYSICAL DESCRIPTION: Brown liquid. A solution of the dimethylammonium salt of the weak organic acid 2,4-dichlorophenoxyacetic acid. Used as an herbicide.
Colour:	White crystals
Odour:	Odorless /Pure/
Melting point/freezing point:	92.8 - 93.4°C
Boiling point or initial boiling point and boiling range:	345.6°C at 760 mmHg
Flammability:	no data available
Lower and upper explosion limit/flammability limit:	no data available

Flash point:	162.8°C
Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	Sol in methyl, ethyl, and isopropyl alcohols, acetone; insol in kerosene and diesel oil
Partition coefficient n-octanol/water:	log Kow = 0.65
Vapour pressure:	2.31E-05mmHg at 25°C
Density and/or relative density:	no data available
Relative vapour density:	no data available
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

no data available

Chemical stability

Most amine formulations have no shelf life limitations and are insensitive to light and temperature. 2,4-D

Possibility of hazardous reactions

SALTS ARE NONFLAMMABLE ... /2,4-D SALTS/DMA 4 (DOW) 49 PERCENT 2,4- D, DIMETHYLAMINE SALT neutralizes acids in exothermic reactions to form salts plus water. May be incompatible with isocyanates, halogenated organics, peroxides, phenols

(acidic), epoxides, anhydrides, and acid halides. Flammable gaseous hydrogen may be generated in combination with strong reducing agents, such as hydrides.

Conditions to avoid

no data available

Incompatible materials

no data available

Hazardous decomposition products

When heated to decomposition it emits very toxic fumes of /hydrogen chloride, ammonia, & nitrogen oxides/.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat oral 625 mg/kg

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

A4; Not classifiable as a human carcinogen. 2,4-D

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50 Lepomis macrochirus (Bluegill) 166-542 mg/l/24 hr; 166-458 mg/l/48 hr /Conditions of bioassay not specified

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

2,4-D dimethylamine is rapidly degraded by aquatic microorganisms in activated sewage at about the same rate as the free acid(1). The same study showed that biodegradation is sensitive to temperature, increasing by an order of magnitude for 2,4-D as the temperature is increased from 10 to 25 deg C(1). A half-life of 3.9 days was obtained for an unspecified amine salt of 2,4-D in a river-dieaway study(5). Half-lives obtained from other studies are: 10-11 days in plastic pools containing fish and hydrosoil, 6.6 days in Ft. Cobb Reservoir, 4.2 days in outdoor, artificial pool, 2.2 and 3.2 days in Louisiana ponds, 0.5-0.8 days in Okananagan Lake, British Columbia, 2.5-6.2 days for Melton Hill Reservoir in the Tennessee Valley Authority system, <1 day in Lake Seminole, and 2.5-6.2 days for Banks Lake, WA(5). While processes other than biodegradation may be contributing to the degradation in

these studies, biodegradation is probably the key process(5). When the amine salts were sprayed onto field plots in Nova Scotia at 5.6, 11.2, and 22.4 kg/ha acid equivalent and soil cores sampled after 13 hr and 14, 28, 56, 70, 265, and 385 days, rapid decomposition of the 2,4-D was observed in the 14-42 day period following application and <5% remained at the end of 70 days(2). Highest 2,4-D concentrations were observed 14 days posttreatment(2). It is believed that the formulation was absorbed by the grass and later washed into the soil by rain and dew(2). A more recent field study looked into the persistence of 2,4-D applied as the dimethylamine salt in field plots in southern and northern Ontario as well as two forested areas in northern Ontario(3). In the two agricultural plots, 50% loss in the upper 10 cm of the soil profile occurred in 4 and 6 days(3). In the two forest plots characterized by sandy clay loam and fine sand soils, the half-lives were 7 and 23 days(2). The soil in the second case was characterized by lower pH and higher organic matter content, both of which might be expected to promote greater adsorption and longer persistence(3). Furthermore, the more rapid loss in clayey soil is consistent with the hypothesis that the 2,4-D is dissociated into its anions in most soils where it is more readily available to microorganisms(3). In a silt loam soil, over 70% of the ring carbon mineralized to CO2, about 20-25% was incorporated into soil as newly generated microbial tissue and about 1-2% remained undegraded after 58 days of incubation(6).

Bioaccumulative potential

Bluegill (lepomis machrochirus) exposed outdoors in plastic pool to one 2 mg/l application of (14)c-labeled 2,4-d dimethylamine salt. during 12-wk exposure, incorporation of (14)c into fatty acids, glycogen & protein material accounted for 85% of (14)c activity.

Mobility in soil

The Koc for the 2,4-D dimethylamine ranged from 72 to 136 for 3 soils in 48 hr batch experiments using radiolabeled herbicide(1). According to a classification scheme(2), this estimated Koc value suggests that 2,4-D dimethylamine is expected to have high mobility in soil(SRC). Effluent breakthrough curves measured in the same soils showed that the 2,4-D dimethylamine was almost as mobile as the water at 5000 ppm but considerably slower at 50 ppm, a result consistent with the non-linear adsorption isotherms(1). Adsorption constants for 2,4-D dimethylamine ranged from 0.13 to 0.25(3,4); these values were calculated from a field study performed using a plastic pool containing clay-loam hydrosoil(3,4).

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: UN3345 (For reference only, please check.)
IMDG: UN3345 (For reference only, please check.)
IATA: UN3345 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: PHENOXYACETIC ACID DERIVATIVE PESTICIDE, SOLID, TOXIC (For reference only, please check.)
IMDG: PHENOXYACETIC ACID DERIVATIVE PESTICIDE, SOLID, TOXIC (For reference only, please check.)
IATA: PHENOXYACETIC ACID DERIVATIVE PESTICIDE, SOLID, TOXIC (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)
IMDG: 6.1 (For reference only, please check.)
IATA: 6.1 (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

Not Listed.

China Catalog of Hazardous chemicals 2015

Not Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Not 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/

Disclaimer: 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. We as supplier shall not be held liable for any