Chemical Safety Data Sheet MSDS / SDS

2-(4-chloro-2-methylphenoxy)propionic acid 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: 2-(4-chloro-2-methylphenoxy)propionic acid

CAS: 93-65-2

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

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SECTION 2: Hazards identification

Classification of the substance or mixture

no data available

GHS label elements, including precautionary statements

Signal word: no data available

Hazard statement(s)

no data available

Precautionary statement(s)

Prevention

no data available

Response

no data available

Storage

no data available

Disposal

no data available

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	2-(4-chloro-2-methylphenoxy)propionic acid
Common names and synonyms:	2-(4-chloro-2-methylphenoxy)propionic acid
CAS number:	93-65-2
EC number:	202-264-4
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

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. Give a slurry of activated charcoal in water to drink. Refer for medical attention .

Most important symptoms/effects, acute and delayed

no data available

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

Bath and shampoo with soap and water to remove chemicals from skin and hair. Obtain medical treatment if irritation persists. Individuals with chronic skin disease or known sensitivity to these herbicides should either avoid using them or take strict precautions to avoid contact (respirator, gloves, etc). FLUSH contaminating chemicals from eyes and copious amounts of clean water for 10-15 minutes. If irritation persists, obtain medical treatment. Chlorophenoxy compounds

SECTION 5: Firefighting measures

Suitable extinguishing media

In case of fire in the surroundings, use appropriate extinguishing media.

Specific hazards arising from the chemical

Not combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.

Special protective actions for fire-fighters

In case of fire in the surroundings, use appropriate extinguishing media.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered plastic containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered plastic containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

Methods and materials for containment and cleaning up

Liquid spillage should be dammed-off and pumped into containers; soak up remainder with absorbent material and dispose of in accordance with local regulations. Mecoprop-P

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 in an area without drain or sewer access. Separated from food and feedstuffs.Do not...store near heat or open flame. Protect from freezing. Salts of mecoprop

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

no data available

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 safety goggles.

Skin protection

Protective gloves.

Respiratory protection

Use local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Mecoprop is a colorless crystals. Corrosive to metals. Used as an herbicide.
Colour:	Colorless crystals
Odour:	Odorless
Melting point/freezing point:	88-90°C

Boiling point or initial boiling point and boiling range:	327°C
Flammability:	Not combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	no data available
Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	In water, 880 mg/L at 25 deg C
Partition coefficient n-octanol/water:	log Kow = 3.13
Vapour pressure:	1.6 mPa (1.2X10-5 mm Hg) at 25 deg C
Density and/or relative density:	1.35 g/cm3
Relative vapour density:	no data available
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Decomposes on heating. This produces toxic fumes including hydrogen chloride. The solution in water is a weak acid. Attacks some forms of coatings and metals in the presence of moisture.

Chemical stability

Stable to heat, and to hydrolysis, reduction, and atmospheric oxidation.

Possibility of hazardous reactions

PURE MECOPROP AS WELL AS COMMERCIAL PRODUCTS ARE NONFLAMMABLE.A phenoxy aryloxyalkanoic acid derivative.

Conditions to avoid

no data available

Incompatible materials

no data available

Hazardous decomposition products

When heated to decomposition it emits toxic fumes of /hydrogen chloride/.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Mouse oral 600 mg/kg Technical material

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

There is limited evidence of the carcinogenicity of mecoprop to humans. There is no data for evaluation of the carcinogenicity of mecoprop to animals. Overall evaluation: Group 2B: The agent is possibly carcinogenic to humans. Chlorophenoxy herbicides

Reproductive toxicity

no data available

STOT-single exposure

The substance is irritating to the eyes, skin and respiratory tract.

STOT-repeated exposure

See Notes.

Aspiration hazard

A harmful concentration of airborne particles can be reached quickly on spraying or when dispersed, especially if powdered.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50; Species: Lepomis macrochirus (Bluegill); Conditions: freshwater, static; Concentration: >92000 ug/L for 96 hr /92.7% purity formulation

Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (Water Flea) age <24 hr; Conditions: freshwater, static; Concentration: 100000 ug/L for 48 hr; Effect: intoxicaiton, immobilization />90% purity formulation

Toxicity to algae: EC50; Species: Scenedesmus subspicatus (Green Algae) 1x10+4 cells/mL; Conditions: freshwater, renewal, 25 deg C; Concentration: 102660 ug/L for 96 hr (95% confidence interval: 97642-108678 ug/L); Effect: decreased population abundance /98% purity

Toxicity to microorganisms: no data available

Persistence and degradability

AEROBIC: Mecoprop is decomposed in soil by microbial degradation(1). The estimated half-lives of 14C-ring-labeled mecoprop (2 ppm) in a sandy loam soil at 50% water holding capacity at 20, 10 and 5 deg C was 3, 12, and 20 days, respectively. In dry and flooded soil (25% and 200% of water holding capacity) at 20 deg C, the half-lives increased to 10 and 15 days, respectively. The half-life decreased by 43% when the concentration of mecoprop was decreased by a factor of 10. Comparing the half-lives of mecoprop in surface soil and subsurface soil, the investigators found half-lives of mecoprop in an undisturbed soil column of a coarse sandy soil to be 7 days at 0-33 cm depth, 70 days at 33-66 cm depth and 34 days at 66-99 cm depth. In these experiments when half of the mecoprop had disappeared, 12% of the 14C was recovered as CO2 and when 90% of the mecoprop had disappeared, 50% of the 14C was evolved as CO2. The degradation intermediates were not identified(1). Using UV absorption, HPLC, GC-MS and other techniques to monitor the course of mecoprop biodegradation using enriched mixed culture from a soil sample, found that biodegradation was incomplete (75%) and that 4-chloro-2-methylphenol was an intermediate(2). GC-MS data also suggested that other phenolic compounds with repositioned chloro and methyl groups are formed(2). The half-lives of mecoprop in clay loam, heavy clay loam, and sandy loam soils at 20 deg C and 85% field moisture capacity were 9, 8, and 7 days, respectively(3). An earlier experiment in which the UV absorption was used to monitor the disappearance of mecoprop (50-80 ppm) with an inoculum of Mardin silt loam, Honeoye silt loam and Dunkirk silt loam; 100% degradation, as typified by the loss of the aromatic ring, was not completely obtained in 47, 124, and 205 days, respectively when incubated at 30 deg C and pH 7.2(4). Using undisturbed soil core techniques and different applications of 14C-ring labeled mecoprop, biodegradation studies were performed resulting in 14.2 to 25.07% 14CO2 evolution over the 90 day study period(5). Under aerobic conditions, (S)-mecoprop degrades faster than (R)-mecoprop(6).

Bioaccumulative potential

An estimated BCF of 3 was calculated in fish for mecoprop(SRC), using a log Kow of 3.20(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

Mobility in soil

The soil distribution coefficient for mecoprop in three Danish agricultural soils were: sandy loam (pH 6.9), 0.12; sandy loam (pH 6.7), 0.20 and coarse sandy soil (pH 6.6), 0.07(1). The corresponding Koc values were 8.4, 13.3, and 5.3, respectively(1). Koc values for mecoprop were also reported as 5 to 43(2). According to a classification scheme(3), these Koc values suggest that mecoprop is expected to have very high mobility in soil. The pKa of mecoprop is 3.78(4), indicating that this compound will exist almost entirely in anion form in the environment and anions generally do not adsorb more strongly to soils containing organic carbon and clay than their neutral counterparts(5). Leaching experiments were conducted in which mecoprop (2.26 kg/ha) was applied to

turfgrass lysimeter (37 cm soil profile) plots (prepared with 3 common northeastern soils and irrigated with 28.5 cm of water over 71 days)(6). Leachate was collected after 30, 52 and 71 days. In all three cases the maximum concentration of mecoprop in leachate was found after 52 days which was 10, 18, and 310 ppb in Hudson silt loam (pH 6.5), Arkport fine sandy loam (pH 6.5), and sand (pH 6.7), respectively(6). The soil partition coefficient of mecoprop to 5 Dutch subsoils (6-7 m below the soil surface) was very low, 0.142 to 0.326 in three soils and zero in the other two soils(7).

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: UN2761 (For reference only, please check.)
IMDG: UN2761 (For reference only, please check.)
IATA: UN2761 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: ORGANOCHLORINE PESTICIDE, SOLID, TOXIC (For reference only, please check.)
IMDG: ORGANOCHLORINE PESTICIDE, SOLID, TOXIC (For reference only, please check.)
IATA: ORGANOCHLORINE 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: No
IMDG: No
IATA: No

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

Not Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Not 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/

Other Information

Mecoprop is a chlorophenoxy-herbicide which, as a group, has been classified by IARC (1987) as possibly carcinogenic to humans, but the data on this specific substance are inconclusive.Carrier solvents used in commercial formulations may change physical and toxicological properties.Other CAS number 7085-19-0.