Chemical Safety Data Sheet MSDS / SDS

Dinoseb 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: Dinoseb

CAS: 88-85-7

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 3, Oral
Acute toxicity - Category 3, Dermal

Eye irritation, Category 2
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1
Reproductive toxicity, Category 1B

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H301 Toxic if swallowed
H311 Toxic in contact with skin
H319 Causes serious eye irritation
H410 Very 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.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P273 Avoid release to the environment.
P203 Obtain, read and follow all safety instructions before use.

Response

P301+P316 IF SWALLOWED: Get emergency medical help immediately.
P321 Specific treatment (see ... on this label).
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P316 Get emergency medical help immediately.
P361+P364 Take off immediately all contaminated clothing and wash it before reuse.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P391 Collect spillage.
P318 IF exposed or concerned, get medical advice.

Storage

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:	Dinoseb
Common names and synonyms:	Dinoseb
CAS number:	88-85-7
EC number:	201-861-7
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer immediately 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. Rest. Give a slurry of activated charcoal in water to drink. Refer immediately for medical attention.

Most important symptoms/effects, acute and delayed

Extremely toxic: Probable oral lethal dose is 5-50 mg/kg; between 7 drops and 1 teaspoonful for 70 kg person (150 lb.). (EPA, 1998)

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

Absorption, Distribution and Excretion

Rats poisoned by consumption, inhalation, or skin exposure to herbicides dinitroisopropyl-(dnpp) and dinitrobutylphenol (dnbp) ... liver, kidney, spleen and blood contained metabolites.

SECTION 5: Firefighting measures

Suitable extinguishing media

This is a dinitrophenol herbicide. (Non-Specific -- Dinitrophenol, Flammable Solid) Wear self-contained breathing apparatus and full protective clothing. If fire becomes uncontrollable, evacuate for a radius of 5000 feet. This material is a dinitrophenol herbicide. (Non-Specific -- Dinitrophenol, Flammable Solid) Extinguish by flooding with water. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible. (EPA, 1998)

Specific hazards arising from the chemical

This is a dinitrophenol herbicide. (Non-Specific -- Dinitrophenol, Flammable Solid). It is dangerously explosive. When not water wet it is a high explosive. Dry, the material is easily ignited and it will burn very vigorously. On decomposition, nitro compounds such as this emit toxic fumes. Appear to be stable in acid solution, but are susceptible to decomposition by ultraviolet radiation in alkaline solution. (EPA, 1998)

Special protective actions for fire-fighters

Use water spray, foam, powder, carbon dioxide. Combat fire from a sheltered position.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal protection: filter respirator for organic gases and particulates adapted to the airborne concentration of the substance. Do

NOT let this chemical enter the environment. Sweep spilled substance into covered sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

Environmental precautions

Personal protection: filter respirator for organic gases and particulates adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered sealable 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

Spillages of pesticides at any stage of their storage or handling should be treated with great care. Liquid formulations may be reduced to solid phase by evaporation. Dry sweeping of solids is always hazardous: these should be removed by vacuum cleaning, or by dissolving them in water, or other solvent in the factory environment.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames. 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

Provision to contain effluent from fire extinguishing. Separated from bases and food and feedstuffs. Cool. Keep in a well-ventilated room. Well closed. Store in an area without drain or sewer access.MATERIALS WHICH ARE TOXIC AS STORED OR WHICH CAN DECOMPOSE INTO TOXIC COMPONENTS ... SHOULD BE STORED IN A COOL WELL VENTILATED PLACE, OUT OF THE DIRECT RAYS OF THE SUN, AWAY FROM AREAS OF HIGH FIRE HAZARD, AND SHOULD BE PERIODICALLY INSPECTED. INCOMPATIBLE MATERIALS SHOULD BE ISOLATED .

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

Component	Dinoseb	
CAS No.	88-85-7	
	Limit value - Eight hours	**Limit value - Short term**

	ppm	mg/m3	ppm	mg/m3
Hungary	?	PIC	?	?
	Remarks			
Hungary	PIC = Prior Informed Consent, Rotterdam Convention on international trade and hazardeous chemicals and pesticides			

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 (not if powder), local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Dinoseb is an orange-brown viscous liquid or orange-brown solid. Orange crystals when pure. Has a pungent odor. Used as a plant growth regulator; insecticide and herbicide. (EPA, 1998)
Colour:	Yellow crystals
Odour:	PUNGENT ODOR

Melting point/freezing point:	55.5°C
Boiling point or initial boiling point and boiling range:	318.1°C at 760 mmHg
Flammability:	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:	>100°C
Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
pH:	AN ACIDIC PHENOL
Kinematic viscosity:	no data available
Solubility:	0.0052 G/100 G WATER; 48 G/100 G ETHANOL; 27 G/100 G N-HEPTANE; MISCIBLE IN ETHYL ETHER, TOLUENE, & XYLENE
Partition coefficient n-octanol/water:	3.56
Vapour pressure:	1 mm Hg at 303.98° F (EPA, 1998)
Density and/or relative density:	1.29
Relative vapour density:	7.73 (EPA, 1998) (Relative to Air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Decomposes on heating. This produces toxic fumes including nitrogen oxides. The solution in water is a weak acid. Attacks many metals in the presence of water.

Chemical stability

2-year shelf life minimum; dow general weed killer: 2-year shelf life minimum.

Possibility of hazardous reactions

DINOSEB is a powerful oxidizing agent. (NTP, 1992). It is dangerously explosive. When not water wet it is a high explosive. Dry, the material is easily ignited and it will burn very vigorously. On decomposition, nitro compounds such as this emit toxic fumes. Appear to be stable in acid solution, but are susceptible to decomposition by ultraviolet radiation in alkaline solution. [EPA, 1998].

Conditions to avoid

no data available

Incompatible materials

no data available

Hazardous decomposition products

no data available

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat, adult male oral 27 mg/kg

Inhalation: no data available

Dermal: LD50 Rabbit percutaneous 80 to 200 mg/kg

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

Cancer Classification: Group C Possible Human Carcinogen

Reproductive toxicity

no data available

STOT-single exposure

The substance is irritating to the eyes. The substance may cause effects on the central nervous system. Exposure at high levels could cause death.

STOT-repeated exposure

The substance may have effects on the hematopoetic system. May cause reproductive toxicity in humans.

Aspiration hazard

A harmful contamination of the air will not or will only very slowly be reached on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50 Salvelinus namaycush (Lake trout) 44 ug/l 96 hr @ 10 deg C (95% confidence limit 38-51 ug/l), wt 0.3 g /Technical material, 95.8%/ /Static bioassay

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

Microbial breakdown has been demonstrated.

Bioaccumulative potential

A bioconcentration factor (BCF) of 68 for dinoseb was estimated from its water solubility (50 mg/L)(1). A BCF of this magnitude suggests that dinoseb will not bioconcentrate significantly(SRC).

Mobility in soil

The measured soil-sorption coefficient (Koc) of dinoseb is 124(1). A Koc of this magnitude suggests that dinoseb will be highly mobile in soil and may leach to groundwater. A much higher Koc value of 6607 wa obtained at a buffered pH of 3(2). It appears that soil sorption may be pH dependent and at low pH adsorption may be stronger. It has been shown, however, that p-nitrophenol adsorbs strongly to clays through an interaction between the nitro group and the water molecules or metallic cations in the clay(3). Dinoseb may similarly bind to clays at low pH. Experiments with soil thin layer chromatography showed that dinoseb was intermediate to very mobile in silt loam sand loam and silty loam soils(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: UN3014 (For reference only, please check.)
IMDG: UN3014 (For reference only, please check.)
IATA: UN3014 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, TOXIC (For reference only, please check.)
IMDG: SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, TOXIC (For reference only, please check.)
IATA: SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, 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

Listed.

China Catalog of Hazardous chemicals 2015

Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Not 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

Temperature of decomposition is unknown in the literature.Depending on the degree of exposure, periodic medical examination is suggested.Carrier solvents used in commercial formulations may change physical and toxicological properties.If the substance is

formulated with solvents also consult the ICSCs of these materials. Do NOT take working clothes home.