

SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.2
Creation Date: July 15, 2019
Revision Date: August 08, 2025

SECTION 1: Identification

1.1 GHS Product identifier

Product name Dinoseb

1.2 Other means of identification

Product number CCPD100329

Other names Gebutox; DINOSEB; (RS)-2-sec-butyl-4,6-dinitrophenol

1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.

Uses advised against no data available

1.4 Supplier's details

Company CATO Research Chemicals Inc.

Address 3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou

Telephone +86-20-81960175

1.5 Emergency phone number

Emergency phone number +86-20-81960175

Service hours 'Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 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

2.2 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.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

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

SECTION 4: First-aid measures

4.1 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.

4.2 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)

4.3 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: Fire-fighting measures

5.1 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)

5.2 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)

5.3 Special protective actions for fire-fighters

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

SECTION 6: Accidental release measures

6.1 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.

6.2 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.

6.3 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

7.1 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.

7.2 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

8.1 Control parameters

Occupational Exposure limit values

Component	Dinoseb			
CAS No.	88-85-7			
	Limit value - Eight hours		Limit value - Short term	
	ppm	mg/m ³	ppm	mg/m ³
Hungary		PIC		
	Remarks			
Hungary	PIC = Prior Informed Consent, Rotterdam Convention on international trade and hazardous chemicals and pesticides			

Biological limit values

no data available

8.2 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.

8.3 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

10.1 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.

10.2 Chemical stability

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

10.3 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].

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

no data available

10.6 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 hematopoietic 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

12.1 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

12.2 Persistence and degradability

Microbial breakdown has been demonstrated.

12.3 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).

12.4 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 was 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).

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 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

14.1 UN Number

ADR/RID: UN3014 (For reference only, please check.) IMDG: UN3014 (For reference only, please check.) IATA: UN3014 (For reference only, please check.)

14.2 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.)

14.3 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.)

14.4 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.)

14.5 Environmental hazards

ADR/RID: Yes IMDG: Yes IATA: Yes

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

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

Chemical name	Common names and synonyms	CAS number	EC number
Dinoseb	Dinoseb	88-85-7	201-861-7
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.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Not Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

SECTION 16: Other information

Information on revision

Creation Date July 15, 2019
Revision Date August 08, 2025

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.

Any questions regarding this SDS, Please send your inquiry to info@cato-chem.com

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 damage resulting from handling or from contact with the above product.