SAFETY DATA SHEETS

According to the UN GHS revision 10

1: Identification

1.1 GHS Product identifier

Product name	Dimethoate

1.2 Other means of identification

Product number	60-51-5
Other names	Dimethoate

1.3 Recommended use of the chemical and restrictions on use

Identified uses	Industrial and scientific research use.
Uses advised against	no data available

1.4 Supplier's details

Company	Zhongshan Greenrock Technology Co., Ltd.
Address	No. 138, Jinsan Avenue, Sanjiao Town, Zhongshan City, Guangdong Province, China
Telephone	+86-2087066781

1.5 Emergency phone number

Emergency phone number	+86-2087066781
Service hours	Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

2: Hazard identification

2.1 Emergency Overview

Low-risk substances usually cause only mild irritation or discomfort. Under normal handling conditions, they are unlikely to pose a significant risk to human health or the environment. However, basic safety precautions must be followed.

2.2 GHS Classification

Acute toxicity, oral : Category 4
Acute toxicity, dermal : Category 4

2.3 GHS label elements, including precautionary statements

Pictogram(s)

Signal word	Warning
Hazard statement(s)	H302 Harmful if swallowed H312 Harmful in contact with skin
Precautionary statement(s)	
Prevention	P264 Wash hands [and ...] 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/...
Response	P317 Get emergency medical help. P321 Specific treatment (see ... on this label). P330 Rinse mouth. P301+P317 IF SWALLOWED,Get medical help. P302+P352 IF ON SKIN,wash with plenty of water/... P362+P364 Take off contaminated clothing and wash it before reuse.
Storage	no data available
Disposal	P501 Dispose of contents/container to ...

2.4 Physical and chemical

The physical and chemical hazards are low, and they are non-flammable, non-explosive, and non-corrosive. Some substances may be slightly flammable or irritating, but the risk is low.

2.5 Health hazards

May cause mild skin or eye irritation, such as redness and itching. Inhalation or ingestion of small amounts may cause temporary discomfort, but no serious or long-term health effects. No special medical treatment is generally required.

2.6 Environmental hazards

It has a low impact on the environment and is only slightly toxic to aquatic organisms and terrestrial ecosystems. Under normal disposal conditions, it will not cause significant environmental pollution and is highly biodegradable.

2.7 Other hazards which do not result in classification

no data available

3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Dimethoate	Dimethoate	60-51-5	200-480-3	99%

4: First-aid measures

4.1 General advice

Stop contact immediately and rinse the contact area with clean water; if symptoms are mild (such as skin redness, eye stinging), rest and observe; if symptoms persist or worsen, seek medical attention and carry the material SDS

4.2 If inhaled

Move to a ventilated place and breathe fresh air deeply; if a mild cough occurs, drink plenty of warm water to relieve it, no special treatment is required

4.3 In case of skin contact

Rinse with running water for 5-10 minutes. If itching occurs, apply anti-allergic ointment; avoid scratching

4.4 In case of eye contact

Rinse with clean water for 5 minutes and apply artificial tears; if discomfort persists, go to an ophthalmologist for treatment.

4.5 If swallowed

If a small amount is accidentally ingested (such as a mild irritant), drink plenty of water to promote excretion; seek medical attention if nausea occurs, and do not induce vomiting on your own.

4.6 Most important symptoms and effects, both acute and delayed

Mild redness and itching of the skin, brief stinging of the eyes, and a mild cough; no long-term health effects.

4.7 Protection of first-aiders

Rescuers need to wear ordinary gloves and goggles; no special heavy equipment is required, and they can just wash their hands after contact.

4.8 Notes to physician

Inform your doctor of the substance type (e.g., mild irritant, aquatic hazard); treat symptomatically (e.g., anti-allergic, anti-inflammatory); no special treatment is required.

5: Fire-fighting measures

5.1 Unsuitable extinguishing media

Mild irritants: No special contraindications, avoid using fire extinguishing agents that are incompatible with the substance (such as using alkali when encountering acid); Aquatic hazardous substances: Avoid using fire extinguishing agents that pollute water bodies (such as phosphorus-containing foam)

5.2 Specific hazards during fire fighting

The risk of combustion is low, mostly small local fires that are not easy to spread; some substances release slightly irritating gases (such as acetic acid) when burned, which have little impact on health; if the wastewater from fire extinguishing of aquatic hazardous substances enters the water body, it may harm aquatic life.

5.3 Hazardous combustion products

Carbon dioxide, water vapor, slightly irritating gases (such as sulfur dioxide, acetic acid vapor).

5.4 Specific extinguishing methods

For small areas: use dry powder/water to extinguish the fire (if compatible), and use wet cleaning for dust (to prevent dust); for large areas: use foam/water to extinguish the fire, and collect the fire extinguishing wastewater at the same time (to prevent water pollution); after extinguishing the fire, ventilate to dilute the residual gas.

5.5 Special protective equipment for fire-fighters

Wear anti-static work clothes, nitrile gloves, and goggles; wear a dust mask when working with dust; no special heavy equipment is required, and maintain good ventilation during operation.

6: Accidental release measures

6.1 Protective measures for workers

Wear anti-static work clothes, nitrile chemical-resistant gloves, and goggles; wear a dust mask or half mask when dealing with dust/volatile substances.

6.2 Environmental protection measure

Isolate the contaminated area within 5 meters; do not allow the leaked material to enter the soil/water body; ventilate/neutralize small leaks and notify the environmental protection department for large leaks.

6.3 Containment methods for leaked chemicals

Liquids are collected in plastic containers; solids are placed in sealed bags using spark-free tools; dust is collected using wet sweeping.

6.4 Cleanup methods for chemical spills

Small leakage: absorb with adsorption material and dispose of as hazardous waste; Large leakage: transfer to storage tank with compatible pump; After cleaning, rinse the ground with clean water.

6.5 Measures to prevent the spread of leaks

5-meter isolation area + signage; ventilation (ordinary fan); isolation belt to prevent spread to public areas.

6.6 Container leakage treatment

Minor leaks: Seal with sealant/tape; Serious leaks: Move to a safe area, handle professionally, and discard the container according to regulations.

6.7 Special considerations

Operators must understand the hazards of substances and first aid; protective equipment must be cleaned and stored; and the handling process must be recorded.

7: Handling and storage

7.1 Safe storage conditions

Store in a normally ventilated warehouse (natural ventilation or mechanical ventilation, air changes ? 2 times/hour); the container should be ordinary plastic or glass (such as polyethylene bottles, glass bottles) with a sealed lid; the warehouse floor should be ordinary cement with no special anti-corrosion requirements; equipped with basic fire-fighting equipment (such as fire extinguishers, fire sand).

7.2 Storage precautions

Store materials by category (e.g. liquids and solids separated) to avoid confusion; clearly mark the substance name and H code on container labels; check containers for damage monthly and clean up minor leaks immediately; eating and drinking are prohibited in the warehouse, and hands must be washed after work.

7.3 VCI Storage Grade

Level 4 (lowest): Metal containers do not require additional VCI protection and can be stored normally. The humidity in the warehouse is ?70%, which prevents slight rust on ordinary metals without affecting their use. For long-term storage (over 6 months), the dust on the surface of the container needs to be wiped off.

7.4 Recommended storage temperature

10-35?, store at room temperature; avoid extreme temperatures (below -5? or above 40?); deliquescent substances (such as certain salts) should be stored in a dry place with a desiccant (such as silica gel) and replaced regularly (if the label has a recommended storage temperature, follow the label).

7.5 Handling

For precautions see Safety Data Sheet section 2
Advice on safe handling : Work under hood. Do not inhale substance/mixture.

8: Exposure controls/personal protection

8.1 Respiratory protection

When exposed to slightly irritating dust (such as talcum powder) or vapor (such as acetic acid), wear an ordinary dust mask; a respirator is not necessary when ventilation is good.

8.2 Recommended Filter type

For dust, choose Type P1 filter cotton; for slight organic vapor, choose Type A1 filter cartridge; no composite filtration is required, basic protection is sufficient.

8.3 Eye/face protection

Wear ordinary impact-resistant goggles with resin lenses. Wear protective glasses when handling liquids to avoid splashing.

8.4 Skin and body protection

Wear ordinary work clothes (cotton or chemical fiber) and wear a waterproof apron when handling liquids to prevent clothes from getting wet.

8.5 Hand protection

Wear nitrile or latex gloves with a thickness of ?0.2mm and replace them promptly after use to avoid damage.

8.6 Hygiene measures

Wash your hands with soap and running water after work. If your skin becomes red or itchy, apply moisturizer. Do not rub your eyes with your hands. Wash your clothes normally; no special disinfection requirements are required.

9: Physical and chemical properties and safety characteristics

Physical state	white crystalline solid
Colour	White crystalline solid
Odour	CAMPHOR-LIKE ODOR
Melting point/freezing point	52-52.5oC
Boiling point or initial boiling point and boiling range	107oC (0.05 torr)
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	107oC
Auto-ignition temperature	no data available
Decomposition temperature	... Thermal stability ranking of hazardous organic cmpd: rank 235 on a scale of 1 (highest stability) to 320 (lowest stability).
pH	no data available
Kinematic viscosity	no data available
Solubility	In water:Slightly soluble. 2.5 g/100 mL
Partition coefficient n-octanol/water	log Kow = 0.78
Vapour pressure	8.5e-06 mm Hg at 25°C (EPA, 1998)
Density and/or relative density	1.281

Relative vapour density	no data available
Particle characteristics	no data available

10: Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

The biological activity remains practically unvaried for 2 yr under environmental conditions, provided stored in unopened and undamaged original containers, in shaded, cool, well-aired places. ... Crystals may form in formulations stored at < 32 deg F/0°C. Stable a minimum of 1 yr at < 25-30°C/77-86 deg F.

10.3 Possibility of hazardous reactions

DIMETHOATE is incompatible with alkaline preparations. It is slightly corrosive to iron. It is incompatible with sulfur based formulations. . Organophosphates are susceptible to formation of highly toxic and flammable phosphine gas in the presence of strong reducing agents such as hydrides. Partial oxidation by oxidizing agents may result in the release of toxic phosphorus oxides.

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Dimethoate may decompose violently at temperatures >60°C due to catalytic effects. However, it is not considered to be an explosive.

10.6 Hazardous decomposition products

When heated to decomposition it emits very toxic fumes of /nitrogen, phosphorous, and sulfur oxides/.

11: Toxicological information

11.1 Acute toxicity

Oral: LD50 Rat female oral 240-336 mg/kg technical material /From table/
Inhalation: LC50 Rat inhalation >1.553 mg/L/4 hr /formulated as EC 400 g/L//
Dermal: LD50 Rat percutaneous > 800 mg/kg

11.2 Skin corrosion/irritation

no data available

11.3 Serious eye damage/irritation

no data available

11.4 Respiratory or skin sensitization

no data available

11.5 Germ cell mutagenicity

no data available

11.6 Carcinogenicity

Cancer Classification: Group C Possible Human Carcinogen

11.7 Reproductive toxicity

no data available

11.8 STOT-single exposure

no data available

11.9 STOT-repeated exposure

no data available

11.10 Aspiration hazard

no data available

12: Ecological information

12.1 Toxicity

Toxicity to fish: LC50 Lepomis macrochirus (Bluegill, weight 0.3 g) 6.0 mg/L/96 hr; temp 24°C. Static bioassay without aeration, pH 7.2-7.5, water hardness 40-50 mg/L as calcium carbonate and alkalinity of 30-35 mg/L. /Technical, 97.4%
Toxicity to daphnia and other aquatic invertebrates: LC50 Daphnia magna (Water flea) 2.50 mg/L/48 hr /from table; Conditions of bioassay not specified
Toxicity to algae: no data available
Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: The concn of dimethoate left (initial concn 10 ppb) after various times in raw water from Little Miami river at pH 7.3-8.0 was 10 ppb after 1 hr, 10 ppb after 1 wk, 8.5 ppb after 2 wks, 7.5 ppb after 4wks, and 5.0 ppb after 8 wks(1). Biodegradation may play a minor role in the disappearance of dimethoate in the river water; no experiments were conducted with sterilized river water(1). Half-lives of 171, 173 and 219 days were given for river water, filtered river water and sea water, respectively at 6°C, and 43, 29 and 36 days at 22°C(2). Percent degradation in chehalis clay loam soil in 2 wk, non-sterile, 77%, autoclaved, 18%, irradiated, 20%(3). Half-lives in soil in June-July averaged 11 days, and less than 2% of applied dimethoate residue detected after 10 months(3). Dimethoate half-lives in soil from Zhejiang Province, China were given as 5.1 and 7.1 days in 1989 and 1990, respectively(4). Dimethoate was given a half-life of 7 days(5-7) and 11 days(8) in an unspecified field soil sample. In laboratory experiments at 20-30°C half-lives for degradation were 28.9 and 36.7 days(3). However, dimethoate degraded faster when

incubated for 30 days in samples of autoclaved sand, sandy clay loam, loam, and clay soils than in similarly treated nonsterile soils(9). Biodegradation appears to depend on the soil type and the microorganisms present in the soil(9). A half-life of 122 days has been observed in soil(10) which also suggests that biodegradation of dimethoate can be slow. In moist soils, dimethoate is readily oxidized to dimethoxon(11), but the role of microbial degradation on the removal of dimethoate from the environment is uncertain(12). Recovery of dimethoate incubated with enrichment cultures using raw sewage: 0 days, 54 ppm; 0.5 days, 54 ppm; 1 day, 52.5 ppm; 6 days, 22.4 ppm; 9 days, 13.5 ppm; 12 days, not detected(13). Using an initial concn of 100 mg/L dimethoate, 0-17 %Theoretical BOD was observed after a 4 week period in a biodegradation screening test using 30 mg/L sludge(14). Dimethoate has been reported to have an aerobic half-life of 2.2 days(15).

12.3 Bioaccumulative potential

After a 6 week period in a flow through system at 25°C, BCF ranges of 1.1-2.4 and 2.7-6 were determined in carp (Cyprinus carpio) using initial concns of 1 and 0.1 mg/L dimethoate, respectively(1). According to a classification scheme(3), these BCFs suggest the potential for bioconcentration in aquatic organisms is low(SRC). Bioconcentration of dimethoate in Mytillus galloprovincialis after 92 hours exposure at concentrations of 3.2, 5.6, 10, 32 and 56 ug/L was 1.0, 1.1, 1.4, 2.0 and 3.1 ug/g, respectively(3). Bioconcentration of dimethoate in Venus gallina after 92 hours exposure at concentrations of 5.6, 10 and 32 ug/L was 2.2, 2.3 and 3.1 ug/g, respectively(3).

12.4 Mobility in soil

The Koc values for dimethoate were measured to be 18 and 36 in a clay loam soil and clay soil, respectively(1). In other studies, the Koc was measured to be 5.2(2), 50(3) and 17(4) in unspecified soils. The Pesticide Properties Database lists the experimental Koc value for dimethoate as 20(5). According to a suggested classification scheme(6), these Koc values suggest that dimethoate will have very high mobility in soil. Average dimethoate losses due to leaching of various soil columns with the equivalent of 2.5 cm of rain ranged from 39.6% (clay) to 78.6% (sand)(7). In four soils containing less than 1% organic content, the soil TLC Rf values ranged from 0.89 to 0.97(8). The soil TLC Rf values in two other soils (0.35-1.05% OC) was 0.40-0.50 and was not affected by pH or salt concentration changes(9). Of 7 values sited in literature the mean Kd is 0.45(10). Kds were given for soil A (2.4 % clay, 0.8% silt, 96.4% sand, 2.1% organic material, pH 5.3) and soil B (13.4 % clay, 10.8% silt, 75% sand, 1.5% organic material, pH 6.4) as 0.08 and 0.05, respectively(11).

12.5 Other adverse effects

no data available

13: Disposal considerations

13.1 Disposal methods for waste chemicals

It can be disposed of as ordinary industrial waste or recycled by a qualified unit. Liquid substances can be neutralized to a neutral pH before discharge (subject to compliance with local environmental protection standards). Solid substances can be safely landfilled or incinerated. After cleaning, the container can be recycled as ordinary waste.

13.2 Precautions

Before disposal, the characteristics of the substance must be confirmed to avoid misjudging the risk level. Mildly irritating substances must be strictly separated from food-grade waste. The disposal process must comply with local environmental regulations. Small amounts of residue can be rinsed with water, and the

rinse water must be treated. Records of the amount and destination of disposal must be kept for at least three years.

14: Transport information

14.1 UN Number

ADR/RID: UN2783 IMDG: UN2783 IATA: UN2783

14.2 UN Proper Shipping Name

ADR/RID: ORGANOPHOSPHORUS PESTICIDE, SOLID, TOXIC

IMDG: ORGANOPHOSPHORUS PESTICIDE, SOLID, TOXIC

IATA: ORGANOPHOSPHORUS PESTICIDE, SOLID, TOXIC

14.3 Transport hazard class(es)

ADR/RID: 6.1(b) IMDG: 6.1(b) IATA: 6.1(b)

14.4 Packing group, if applicable

ADR/RID: III IMDG: III IATA: III

14.5 Environmental hazards

ADR/RID: no IMDG: no IATA: no

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

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
Dimethoate	Dimethoate	60-51-5	200-480-3
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Australian Inventory of Industrial Chemicals (AIIC)			Not Listed.
Catalogue of Strictly Restricted Toxic Chemicals in China			Not Listed.
China Catalog of Hazardous chemicals 2015			Not Listed.
European INventory of Existing Commercial chemical Substances			Not Listed.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans	Not Listed.
TSCA Inventory of Chemical Substances	Listed.

16: Other information

Information on revision

SDS Creation Date	July 1, 2025
SDS Revision Date	July 1, 2025

Abbreviations and acronyms in SDS

- 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%

SDS 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/

Any questions regarding this Safety Data Sheet, Please send your inquiry to sales@MolBest.com

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