



MATERIAL SAFETY DATA SHEET

PRODUCT : Dimethoate 40% EC

PRODUCT DESIGNATION : Insecticide

Section 1. Product & Company Identification

Common Name : Dimethoate 40% EC

Grade : Formulation

Active Ingredient : Dimethoate

Chemical Name of Active Ingredient (IUPAC) : O,O -dimethylS - methylcarbamoylmethylphosphorodithioate;2-dimethoxyphosphinothioylthio-N-methylacetamide

Chemical Family of A. I. : Organophosphate

Molecular Formula of A. I. : C₅H₁₂NO₃PS₂

Molecular Mass of A. I. : 229.3 g/mol

Manufacturer & Supplier : **M/s PERFECT SOLUTIONS**
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Section 2. Composition / Information on Ingredients

Component	Concentration % w/w
Dimethoate a.i	40.00 % w/w
Other components	60.00 % w/w
Total	100.00% w/w

Section 3. Hazards Identification

Classification of the substance or mixture

Flammable liquid: Category 3 (H226)

Acute oral toxicity: Category 4 (H302)

Acute inhalation toxicity: Category 4 (H332)



Eye irritation: Category 2 (H319)

Sensitisation – skin: Category 1B (H317)

Aspiration toxicity: Category 1 (H304)

Hazards to the aquatic environment, chronic: Category 1 (H410)

WHO classification: Class II: Moderately hazardous

Physicochemical hazards : The product is flammable.

Health hazards :The product is harmful by inhalation and by ingestion. It may be mildly to moderately irritating to skin and eyes. It may cause sensitivity by skin contact.

The active ingredient dimethoate is a poison (cholinesterase inhibitor). It rapidly enters the body on contact with all skin surfaces and eyes.

Repeated exposures to cholinesterase inhibitors such as dimethoate may, without warning, cause increased susceptibility to doses of any cholinesterase inhibitor.

Environmental hazards : The product is toxic to aquatic organisms.

Section 4. First Aid Measures

FIRST AID:

The airway should be kept clear to maintain respiration, particularly when the patient is unconscious or has vomited. The mouth and pharynx should be cleared and dentures removed. The jaw should be supported and the patient placed in a face down position with the head down and turned to one side, with the tongue drawn forward. First aid should be performed by qualified medical personnel and should include, if necessary, mouth-to-nose respiration and cardiac massage.

Inhalation:

Immediately remove source of contamination or move patient to fresh air. Keep affected person warm and at rest. If breathing has stopped, perform artificial mouth-to-nose respiration and administer oxygen. Obtain medical advice immediately.

Skin contact:

Remove contaminated clothing, shoes and leather goods immediately. Gently wipe off excess chemical. Wash skin gently and thoroughly with clean water and non-abrasive soap or mild detergent until no evidence of chemical remains (approximately 15 to 20 minutes). Persons who become sensitised may require specialised medical management with anti-inflammatory agents. Obtain medical advice immediately.



Eye contact: Flush eyes immediately with large amounts of gently flowing cold water, occasionally lifting upper and lower lids, until no evidence of chemical remains (approximately 15 to 20 minutes). Obtain medical advice.

Ingestion:

Do not induce vomiting, due to aromatic solvent present in product. Obtain medical advice immediately and make the container, or label or this Data Sheet available. Never give anything by mouth to a semi-conscious or unconscious person.

If vomiting occurs, take care to prevent vomit from being inhaled.

Establish and maintain airway. Treat respiratory difficulty with artificial respiration and oxygen.

Section 5. Fire Fighting Measures

Flammable properties:

Flammable: Flash point: 50°C.

Extinguishing agents:

Extinguish fires with carbon dioxide, dry powder, or alcohol-resistant foam. Water spray as a fog can be used for cooling of unaffected stock, but avoid water coming in contact with the product. Contain water used for fire-fighting for later disposal.

Avoid the accumulation of polluted run-off from the site.

Fire fighting:

Remove spectators from surrounding area. Remove container from fire area if possible without risk. Eliminate all ignition sources in immediate area. Fight fire from maximum distance. For massive fire, use unmanned hose holder or monitor nozzles. Contain fire control agents for later disposal. Use a recommended extinguishing agent for the type of surrounding fire. Avoid inhaling hazardous vapours. Keep upwind.

Personal protective equipment:

Fire-fighters and others that may be exposed should wear full protective impervious clothing, including gloves and eye protection, and self-contained breathing apparatus. Contact with the fumes and vapours should be avoided by staying upwind.

Clean all clothing before re-use. Severely contaminated clothing cannot be adequately decontaminated, and must be disposed as a hazardous waste. Shower with soap and water after contact with this product.



Section 6. Accidental Release Measures

Personal precautions:

Do not breathe in mist or fumes. Avoid contact with skin and eyes. For personal protection see Section 8.

Environmental precautions:

Do not allow entering drains or watercourses. Spillage or uncontrolled discharges into water courses (or public waters) to be reported immediately to the Police and to the Department of Water/Environmental Affairs.

Occupational spill:

Keep out unprotected persons and animals. Do not touch spilled material; stop leak if you can do it without risk.

Earth all equipment used when handling the product. Do not touch or walk through spilled material. Stop leak if possible without risk. Avoid runoff of product into sewers, water systems, basements or confined areas as it may cause fire/explosion. A vapour-suppressing foam could be used to reduce vapours. Thoroughly wash body areas, which come into contact with the product.

For spills: Use clean, non-sparking tools to collect absorbed material. Soak up with absorptive material such as damp earth or sand or other suitable non-combustible absorbent material. Place the material into a clean, dry container and cover for subsequent disposal. In situations where product comes in contact with water, contain contaminated water for later disposal. Prevent material from spreading by damming in with absorptive material. Do not flush spilled material into drains. Keep spectators away and upwind.

To decontaminate spill area, tools and equipment, wash with a suitable solution (i.e. organic solvent, detergent bleach or caustic). Add the solution to the drums already collected. Label drums with its content and dispose it in accordance with local regulations.

Open burning or dumping of this material is prohibited.

Section 7. Handling & Storage

Handling:

Operator should not be alone during handling and application of product. Remove sources of naked flame or sparks. Toxic if swallowed and by skin contact, and harmful if inhaled. Avoid contact with eyes and skin and inhalation of fumes. Avoid exposure to spray. Use with



adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking or using the toilet. Operators should change and wash clothing daily. Remove clothing immediately if the insecticide gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Do not apply directly to areas where surface water is present, or to intertidal areas below the mean high water mark. Water used to clean equipment must be disposed of correctly to avoid contamination.

Storage:

Store in its original container in isolated, dry, cool (avoid temperatures above 32 °C) and well-ventilated area. Avoid cross contamination with other pesticides and fertilisers. Keep under lock and key out of reach of unauthorised persons, children and animals. Store away from incompatible substances. Not to be stored next to foodstuffs and water supplies. Local regulations should be complied with.

Keep away from naked flames and other sources of ignition.

Section 8. Exposure Control, Personal Protection

Engineering control measures:

It is essential to provide adequate ventilation. Ensure that control systems are properly designed and maintained. Only spark-resistant equipment should be used. Comply with occupational safety, environmental, fire and other applicable regulations.

PERSONAL PROTECTIVE EQUIPMENT:

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal equipment including approved respiratory protection.

Respirator: Where exposure through inhalation and eye contact may occur when handling the product, when preparing and when applying the spray mixture, wear a suitable face mask and respirator. If the product is used in dusty or confined conditions or spillage and fire conditions, an approved full-face air-purifying respirator, equipped with organic vapour cartridges or canisters, suitable and approved for protection from dusts and mists of pesticides is adequate. Limitations of respirator use specified by the approved agency and the manufacturer must be observed.

Clothing: Employee must wear appropriate protective (impervious) clothing (long sleeved cotton overalls, apron, rubber boots, face shield and hat or cap) and equipment to prevent skin contact with the substance.



Gloves: Employee must wear appropriate chemical resistant protective gloves (PVC or neoprene gloves) to prevent contact with this substance.

Eye protection: Employee must wear splash-proof safety goggles and face-shield to prevent contact with this substance.

Emergency eye wash: Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.

Section 9. Physical and Chemical Properties

Appearance / state	:	Clear Blue color liquid
Colour	:	blue
Odour	:	Aromatic odour
Specific gravity	:	1.021 ± 0.05 g/ml @ 20 °C.
Flash Point	:	43°C
Water Solubility	:	Forms an emulsion in water

Section 10. Stability & Reactivity

Storage stability: Stable for up to 2 years under normal warehouse and field conditions. Avoid contact with strong acids, strong alkalis, alkaline materials such as lime and oxidizing agents. Avoid heat and sources of ignition.

Hazardous decomposition: Product undergoes decomposition at high temperatures and will cause toxic fumes of including carbon dioxide, carbon monoxide, oxides of nitrogen, hydrogen cyanide gas, sulfur oxides, phosphorus oxides and other phosphorus compounds.

Polymerization: This product will not polymerize

Section 11. Toxicological Information

Acute Oral Toxicity- LD₅₀	Rat: 800 mg/kg b.w.
Acute Dermal Toxicity- LD₅₀	Rat: 2000 mg/kg b.w
Acute Inhalation - LD₅₀	Rat: >3.8 mg/l Air
Eye irritation	Non Irritating to eyes
Skin Irritation	Not irritating



Skin Sensitization

Not skin sensitizer

Section 12. Ecological Information

Toxicity to Fishes LC50 (96 hours): Rainbow trout: 24.5 mg/ℓ

Toxicity to daphnia LC50 (48 hours): Daphnia magna 2 mg/ℓ

Toxicity to Bees LD50 (oral): 0.15 µg/bee

Toxicity to Birds Oral LD50: Mallard ducks: 42 mg/kg

Section 13. Disposal Consideration

Pesticide disposal: Open dumping or burning of this pesticide is prohibited. Waste resulting from the use of this product that cannot be reused or reprocessed should be disposed of in a landfill approved for pesticide disposal. Do not contaminate rivers, dams or any other water sources with the product or used containers. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Comply with local legislation applying to waste disposal.

Package product wastes: Emptied containers retain vapour and product residues. Observe all labelled safeguards. TRIPLE RINSE empty containers in the following manner: Invert the empty container over the spray or mixing tank and allow to drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter, rinse the container three times with a volume of water equal to a minimum of 10 % of that of the container. Add the rinsings to the contents of the spray tank before destroying the container.

Destroy the emptied containers by perforation and flattening. Bury in an approved dump site.

Do not re-use the empty container for any other purpose.

Comply with any local legislation applying to disposal.

Section 14. Transport Information

IMDG Classification

Shipping name : Organophosphorus pesticide, liquid, toxic, flammable
(Dimethoate 40% EC)

Class : 6.1

Packing group : III

UN number : 3017



Marine pollutant : Yes

EMS No. : F-E,S-D

Section 15. Regulatory Information

Risk Phrases: R22, R36/38 R37 and R43

Safety Phrases: S1/2, S26 and S35

Section 16. Other Information

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are resented in good faith and believed to be correct. This information applies to the PRODUCT AS SUCH. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear. It is the responsibility of persons on receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produces formulations containing this product, it is the recipient's sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.

Safety Division : PERFECT SOLUTIONS, SAFETY DIVISION