MATERIAL SAFETY DATA SHEET
DIMETHOATE 40 EC

1. COMPANY DETAILS:

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2. PRODUCT IDENTIFICATION:

Trade Name: Dimethoate 40 % EC
Chemical Family: Organophosphate
Chemical Name: O,O-dimethyl S-methylcarbamoylmethyl phosphorodithioate; 2-
dimethoxyphosphiniothioiothio-N-methylacetamide
Synonyms: Dygon
           Agrothoate
           Chemathoate
           Chimigor
           Dimeton
           Oligor
Molecular Formula: C₅H₁₂NO₃PS₂ (Technical)
Structural Formula:

\[ S \quad \text{P(OCH₃)₂} \quad \text{CH₃NHCOC₃S} \]

UN No: 3017 (Formulated Product)
C.A.S.No.: [60-51-5] (Technical)
Description of Product: A contact and stomach poison for the control of insects as listed on the label.

3. COMPOSITION:

Hazardous Components:
- Dimethoate: 400 g/ℓ
- Ionic Non-ionic emulsifier: 5 g/ℓ
- Alcohol solvent: 39.6 g/ℓ
- Stabilizer: 1 g/ℓ
- Aromatic hydrocarbon solvent: 130 g/ℓ
- Blue Dye: 0.07 g/ℓ
4. PHYSICAL AND CHEMICAL CHARACTERISTICS:

- **Appearance:** Clear, blue liquid.
- **Odour:** Aromatic odour.
- **Specific Gravity:** 0.995 kg/ℓ @ 20°C
- **Solubility:** Emulsifies with water.
- **Corrosiveness:** Attacks copper and brass.

5. FIRE AND EXPLOSION HAZARD:

- **Flash Point:** Not available.
- **Flammability:** Flammable Liquid.
- **Flammable limits:** (% by vol.) not available.
- **Auto ignition Temperature:** Not available.
- **Decomposition Temperatures:** Not available.
- **Acute Hazards:** Unlikely in normal use. Formulation contains organic solvents. Toxin is mainly an organophosphorous cholinesterase inhibitor.

- **Special fire fighting procedures:** Use water to keep fire exposed containers cool. If a leak or spill has not ignited, use water spray to disperse the vapours and to protect personnel attempting to stop leak. Water spray may be used to flush spills away from exposures. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

- **Special protective equipment:** Do not breathe fumes. For fires in enclosed areas, fire fighters must use nitrile rubber gloves, close fitting safety goggles, effective respiratory protection when necessary, full length protective clothing and boots should be worn when handling this material in an emergency. Toxic fumes may be given off.

- **Hazardous decomposition products:** Vapours of solvent may form explosive mixture with air. Toxic fumes included hydrogen chloride, nitrogen oxides, phosphorous oxides, sulfur oxides emit during decomposition in a fire.

- **Fire extinguishing media:** Dry powder, Water spray, Foam, Carbon Dioxide.

6. REACTIVITY DATA:

- **Stability:** Rate of hydrolyses increases with pH, and in the presence of copper and possibly of other materials that can form chelates.
- **Conditions to avoid:** Heat, sparks, flame and build up of static electricity, spillage onto roadways, etc.
- **Compatibility:** Mixing with strongly alkaline or acidic substances should be avoided.

- **Hazardous decomposition products:** Hydrogen chloride, Nitrogen oxides, Phosphorous oxides, Sulfur oxides.

7. WARNINGS:

- Store away from food, eating utensils, feedstuffs and drinking water.
- Keep under lock and key.
- Keep out of reach of children, uninformed persons and animals.
- Harmful if swallowed, by contact or inhalation.
- Flammable liquid.
- Store in a cool, dry place away from sources of heat and naked flames.
8. HEALTH HAZARD DATA: (ACUTE HAZARDS & SYMPTOMS)

Effects of overexposure: The toxin is an organophosphorus cholinesterase inhibitor; may cause headache, fatigue, faintness, giddiness, excessive sweating, nausea, abdominal pains, vomiting, diarrhoea, tightness of the chest, anxiety, blurred vision, muscle twitching beginning in the eyelids and tongue, small pupils, respiratory distress.

Inhalation: Avoid inhalation of spray mist.

Skin: Avoid repeated or prolonged contact. The toxin is an organophosphorus cholinesterase inhibitor, readily absorbed through intact skin. Contact may cause redness, irritation and dermatitis.

Eyes: Irritating, may cause redness, pain, blurred vision, and conjunctivitis.

Ingestion: The toxin is an organophosphorus cholinesterase inhibitor; may cause headache, fatigue, faintness, giddiness, excessive sweating, nausea, abdominal pains, vomiting, diarrhoea, tightness of the chest, anxiety, blurred vision, muscle twitching beginning in the eyelids and tongue, small pupils, respiratory distress.

9. EXPOSURE CONTROLS / PERSONAL PROTECTION

Inhalation: Avoid inhalation of spray mist. Use only in well–ventilated areas, in case of insufficient ventilation, wear suitable respiratory equipment. Approved respiratory equipment must be used when vapour or mists concentrations exceed applicable standards.

Skin: Wear protective clothing, as well as protective gloves. Launder contaminated clothing before re–use. Avoid skin contact. Keep working clothes separately and do not take home.

Good personal hygiene practices should always be followed.

Eyes: Avoid contact with eyes. Wear eye /face protection. When handling this product, wear goggles giving completely eye protection. Normal industrial eye protection practices should be employed.

Ingestion: Keep away from food and feedstuffs. Do not eat, drink or smoke whilst handling this product. Wash hands and face before eating and drinking.

10. FIRST AID MEASURES:

Inhalation: Remove patient from source of poisoning to well ventilated area and keep him quiet and reassured. If necessary, administer artificial respiration and oxygen or closed chest cardiac massage.

Skin: Immediately remove contaminated clothing, wear rubber gloves to avoid contact with contaminated clothing, rinse the affected skin area with plenty of soap and cool water or shower.

Eyes: Immediately wash eyes with copious amounts of clean water for at least 15 minutes, cover with a sterile pad.

Ingestion: Keep patient calm and reassured, put in recovery position, rinse mouth with water. Never give anything by mouth to an unconscious person. DO NOT apply direct mouth-to-mouth respiration, use a disposable protective mouthpiece. Persons attending the victim should avoid direct contact with the vomit; wear rubber gloves and protective clothing. SEEK MEDICAL ASSISTANCE.
NOTE TO PHYSICIAN:
Administer Atropine sulphate, intravenously (1 to 4 mg) every 5 to 10 minutes until signs of atropinization, (dry flushed skin and tachycardia); 2-PAM 50 mg/kg up to total dose of 1 to 2 g or two thirds of this dose of Protopam. Repeat oximes if necessary. Do not give morphine.

SEEK MEDICAL ADVICE PROMPTLY AND SHOW THIS MSDS TO A MEDICAL PRACTITIONER

11. ACCIDENTAL RELEASE MEASURES:

Notification procedures: Report spills as required to appropriate authorities.
Procedures if material is released or spilled: Absorb on fire retardant treated sawdust, diatomaceous earth, sand, peat sorb, etc. Shovel in and dispose of at an appropriate waste disposal facility, in accordance with current applicable laws and regulations, and product characteristics at time of disposal.

Environmental Precautions: Prevent spills from entering storm sewers or drains and contact with soil.

12. HANDLING AND STORAGE:

Handling /storage precaution: Avoid prolonged repeated skin contact. Do not contaminate water, food or feed by storage or disposal. Store in a secure, dry, well – ventilated separate room, building or covered area. Not for use or storage on or around home. Keep away from sources of ignition and protect from exposure to fire and heat separate from incompatible materials. Do not allow entering public sewers and water sources. If contamination of drainage systems or water sources, is unavoidable, inform the appropriate authorities immediately. For use as directions on the label only. Wash thoroughly after application. Remove and wash contaminated clothing after use. Wash applicator, receptacles, etc., thoroughly before re-using with other materials.

Note:
During application and when cleaning equipment and protective clothing, contamination of all sources of drinking water, rivers, dams, crops or grazing shall be prevented.

13. DISPOSAL CONSIDERATION

Waste disposal: Rinse empty container 3 times and destroy by perforation or flattening, and do not use for any other purpose. Product should be utilized completely to avoid disposal. If not possible, dispose of at an appropriate waste disposal facility, in accordance with current applicable laws and regulations. Soak up spillage with dry sand, shovel up and dispose of as for toxic waste in accordance with local/national regulations. DO NOT burn. Protective clothing to be worn when clearing spillage.

14. ENVIRONMENTAL DATA:

Toxicity: Product is hazardous if ingested, on skin contact and inhalation. For dimethoate technical the acute oral LD₅₀ for rats is 387 mg/kg; for rabbits is 300 mg /kg.
15. TRANSPORTATION DATA:

Hazardous Description: Organophosphate pesticide, liquid, toxic, flammable. # flashpoint >=23 C
Label: Keep away from foodstuff.
        Flammable
        Do not transport with food and foodstuffs.

Land, Domestic:
    DOT Class: 6.1
    DOT UN No.: UN 3017
    DOT Pack Group: III
    DOT Label: Flammable liquid.

International, Water:
    IMO UN No.: UN 3017
    IMO UN Class: 3.3

Air(IATA):
    IATA UN ID No.: 3017
    IATA UN Class: 3
    IATA Label: Flammable liquid

AFI Class: 3
AFI ID No.: UN 3017
AFI Pack Group: III

Hazchem Code: 3YE

16. ENVIRONMENTAL DATA:

The product is very toxic to aquatic organisms. Avoid release to the environment in circumstances different to normal use.

17. REGULATORY INFORMATION:

Registered in RSA – Registration Number L1042