

MATERIAL SAFETY DATA SHEET

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

Product identifier: DIMETHOATE 4E

EPA Reg. No.: 34704-207-67760

Product use: Insecticide

Supplier's name and address:

FMC Corporation
2929 Walnut Street
Philadelphia, PA 19104
(215) 299-6000 (General Information)
SDS-Info@fmc.com (E-Mail General Information)

Manufacturer's name and address:

Cheminova Inc.
P.O. Box 110566
One Park Drive, Suite 150
Research Triangle Park, NC 27709 USA
EPA Reg. No.: 34704-207-67760

Medical Emergency:

1 800 / 331-3148 (U.S.A. & Canada)

1 651 / 632-6793 (All Other Countries - Collect)

For leak, fire, spill or accident emergencies, call:

1 800 / 424 9300 (CHEMTREC - U.S.A.)

1 703 / 741-5970 (CHEMTREC - International)

1 703 / 527 3887 (CHEMTREC - Alternate)

SECTION 2 — HAZARDS IDENTIFICATION

GHS Signal Word:

Warning

Classification:

Health	Environmental	Physical
Acute toxicity – Oral – Category 4 Acute toxicity – Inhalation – Category 4	Aquatic Toxicity – Acute 2 Aquatic Toxicity – Chronic 2	Flammable liquid – Category 3

GHS Pictogram:



Hazard Statements:

Harmful if swallowed.

Harmful if inhaled.

Flammable liquid and vapor.

Toxic to aquatic life.

Toxic to aquatic life with long lasting effects.

Precautionary Statements:

Prevention:

Wash hands thoroughly after handling.

Do not eat, drink or smoke when using this product.

Avoid breathing mist, vapour or spray.

Use only outdoors or in a well-ventilated area.

Keep away from heat, sparks, or open flames. – No Smoking.
 Keep container tightly closed.
 Use explosion-proof electrical, ventilating, and lighting equipment.
 Use only non-sparking tools.
 Take precautionary measures against static discharge.
 Wear protective gloves, eye protection and face protection.
 Avoid release to the environment.

Response:

If swallowed: Call a doctor immediately if ingested.
 Rinse mouth.
 If inhaled: Remove victim to fresh air and keep comfortable for breathing.
 Call a poison control center or doctor if you feel unwell.
 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
 In case of fire: Use carbon dioxide or dry chemical for small fires and water spray or foam for large fires.
 Collect spillage.

Storage:

Store in well-ventilated place.
 Keep cool.

Disposal:

Dispose of contents/container according to label directions.

SECTION 3 — COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredients</u>	<u>CAS #</u>	<u>% (weight)</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>
Dimethoate (<i>O,O</i> -dimethyl <i>S</i> -[2-(methylamino)-2-oxoethyl] phosphorodithioate)	60-51-5	30.00 - 60.00	NE	NE
Cyclohexanone	108-94-1	15.00 - 40.00	20 ppm 50 ppm	50 ppm 200 mg/m ³
Heavy aromatic solvent naphtha	64742-94-5	7.00 - 13.00	NE	NE
Trimethylbenzenes (mixed isomers)	25551-13-7	3.00 - 7.00	25 ppm	NE

NE = Not established

This material is classified as hazardous under OSHA regulations (29CFR 1910.1200).

SECTION 4 — FIRST AID MEASURES

If inhaled: Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. Obtain medical attention immediately.

If on skin or clothing: Immediately flush skin with running water for at least 15 minutes, while removing contaminated clothing. Obtain medical attention immediately. Wash contaminated clothing before reuse.

If in eyes: Immediately flush eyes with running water for at least 15 minutes. Obtain medical attention immediately.

If swallowed: Induce vomiting ONLY under the direct supervision of qualified medical personnel or a poison control center. Never give anything by mouth to an unconscious person. Obtain medical attention immediately.

Have the product container or label with you when calling a poison control center or doctor, or when going for treatment.

Note to physician: This product contains a cholinesterase inhibitor affecting the central and peripheral nervous systems and producing respiratory depression. Decontamination procedures such as whole body washing, gastric lavage and administration of activated charcoal are often required. If symptoms are present, administer atropine sulphate in large doses. Two to four mg intravenously or intramuscularly, as soon as possible. Repeat at 5 to 10 minute intervals until signs of atropinization appear. Maintain full atropinization until all organophosphate is metabolized. Obidoxime chloride (Toxogonin), alternatively pralidoxime chloride (2-PAM), may be administered as an adjunct to, but not a substitute

for atropine, which is a symptomatic and often life-saving antidote. Treatment with oxime should be maintained as long as atropine sulphate is administered. At first sign of pulmonary edema, the patient should be given supplemental oxygen and treated symptomatically. Continued absorption may occur and relapse may occur after initial improvement. VERY CLOSE SUPERVISION OF THE PATIENT

IS INDICATED FOR AT LEAST 48 HOURS, DEPENDING ON THE SEVERITY OF POISONING.

Signs and symptoms of short-term (acute) exposure:

- Inhalation: May be fatal if inhaled. This material can cause organophosphorous poisoning. Symptoms of poisoning may include headache, nausea, vomiting, blurred vision, tightness in chest, drooling and frothing of mouth and nose, convulsions, coma and death.
- Skin: May cause moderate to severe skin irritation. Readily absorbed through the skin. Causes symptoms similar to those listed for inhalation.
- Eyes: May cause severe eye irritation. Readily absorbed through eye surfaces. Causes symptoms similar to those listed for inhalation.
- Ingestion: May be fatal if ingested. Causes symptoms similar to those listed for inhalation. This product may present an aspiration hazard. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal.

Effects of long-term (chronic) exposure: Prolonged or repeated overexposure may cause behavioral changes. Prolonged or repeated skin exposure may cause redness, a burning sensation, drying and cracking of the skin (dermatitis). Prolonged or repeated overexposure may cause liver, kidney and blood system effects.

Conditions aggravated by overexposure: Pre-existing skin, eye, respiratory and central nervous system disorders.

SECTION 5 — FIRE FIGHTING MEASURES

Flash point (Method): 108° F (42° C) (PMCC)

Suitable extinguishing media: For small fires, use dry chemical or carbon dioxide. For large fires, use water spray or foam. Avoid heavy hose streams.

Special fire-fighting procedures/equipment: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame. Avoid spreading burning liquid with water spray used for cooling purposes.

Hazardous combustion products: Carbon oxides; nitrogen oxides (NOx); Oxides of phosphorus; sulfur oxides; irritating fumes and smoke.

Fire hazards/conditions of flammability: Flammable liquid and vapor. This material will ignite when exposed to heat, sparks, flames, or other sources of ignition (e.g. static electricity, pilot lights, or mechanical/electrical equipment). Material may decompose rapidly when exposed to heat and flame. Heat of decomposition may cause closed containers to build up pressure and explode.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal precautions: Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

Environmental precautions: Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply.

Spill response/Cleanup: Remove all sources of ignition. Ventilate area of release. Stop the spill at source if it is safe to do so. Contain and absorb spilled material with inert, non-combustible absorbent material, such as sand. Sweep up and shovel into suitable containers for disposal. For a water spill, confine the spill immediately with booms. Large spills that soak into the ground should be dug up, placed into suitable containers and disposed of appropriately (see Section 13). Notify the appropriate authorities as required.

Prohibited materials: None known.

Special spill response procedures: In case of a transportation accident, in the United States contact CHEMTREC at the phone numbers listed in Section 1. If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8002).

US CERCLA Reportable quantity (RQ): Dimethoate (10 lbs / 4.54 kg); Cyclohexanone (5000 lbs / 2270 kg)

SECTION 7 — HANDLING AND STORAGE

Safe handling procedures: This material is a toxic liquid. Wear chemically resistant protective equipment during handling. Use only in well-ventilated areas. Avoid contact with eyes, skin and clothing. Do not breathe vapors or spray mist. Keep away from children and all unprotected persons. Do not use near sources of heat, flame or direct sunlight. Dimethoate should never be heated above 95oF / 35oC. Heat only indirectly and with solvent present. Local heating with, for example, electric heating equipment or steam, may significantly increase the risk of explosion and should never take place. Keep away from incompatibles. Use caution when opening cap. Keep containers tightly closed when not in use. Wash thoroughly after handling.

Storage recommendations: Store in a cool, dry, well ventilated area. Keep away from excessive heat, open flames, sparks and other possible sources of ignition. Avoid storage above 77°F / 25°C for prolonged period of time. Keep away from incompatibles. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.

Special packaging materials: Always keep in containers made of the same materials as the supply container.

SECTION 8 — EXPOSURE CONTROLS AND PERSONAL PROTECTION

Ventilation and engineering controls: Minimize airborne concentrations. Provide sufficient ventilation to keep vapor concentration below the given TLV and/or PEL.

Respiratory protection: Respiratory protection is required. Wear a pesticide respirator jointly approved by the MSHA and NIOSH. Advice should be sought from respiratory protection specialists.

Protective gloves: Wear impervious gloves, such as barrier laminate, butyl rubber, nitrile rubber or viton. Advice should be sought from glove suppliers.

Eye protection: Chemical splash goggles must be worn when handling this material.

Other protective equipment: Wear impervious chemical apron and protective clothing (water-proof pants, coat, hat and boots) to prevent skin contact. An eyewash station and safety shower should be made available in the immediate working area.

Permissible exposure levels: See Section 3.

General hygiene considerations: Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Before removing gloves clean them with soap and water. Always wash hands, face and arms with soap and water before smoking, eating or drinking. After work, take off all protective equipment, work clothes and shoes, and wash with soap and water. Respirator should be cleaned and filter replaced according to manufacturer's instructions. Wear only clean, uncontaminated clothes when leaving place of work. Persons working with this product for a longer period should have frequent blood tests for cholinesterase levels. If the cholinesterase levels fall below a critical point, no further exposure should be allowed until it has been determined, by means of blood tests, that cholinesterase levels have returned to normal.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Colorless to light yellow liquid

Odor: Mercaptanic odor

Odor threshold: ND

pH: NA

Melting/freezing point: <41° F (<5° C)

Initial boiling point and boiling range: Dimethoate decomposes at temperatures above 176° F (80° C)
Cyclohexanone: 316° F (156° C)

Aromatic solvent naphtha: 318-338° F (159-170° C)

Flash point: 108° F (42° C)

Evaporation rate: ND

Flammability: Combustible liquid

Upper flammability or explosive limits: 1.3 – 1.9 (based on ingredients)

Lower flammability or explosive limits: 9.4 – 12.6 (based on ingredients)

Vapor pressure:

Dimethoate:	1.85 x 10 ⁻⁶ mmHg @ 25° C
Cyclohexanone:	3.5 mmHg @ 20° C
Aromatic solvent naphtha:	4 mmHg @ 20° C

Vapor density (Air=1.0): ND

Density: ND

Specific gravity: 1.09 – 1.11 @ 25° C

Solubilities: Dimethoate:

Water	39800	mg/L
xylene	40	mg/L
toluene	1030000	mg/L
n-hexane	295	mg/L
methanol	1590000	mg/L

Coefficient of n-Octanol/water distribution: log K_{ow} = 0.704 (Dimethoate)

Auto-ignition temperature: ND

Decomposition temperature: Dimethoate decomposes at temperatures above 176° F (80° C)

Viscosity: ND

SECTION 10 — REACTIVITY AND STABILITY DATA

Stability and reactivity: It is strongly advised not to heat this product above 95°F / 35°C and only heat indirectly with solvent present. Above 176°F (80° C) the product will decompose rapidly, significantly increasing the risk of inducing explosions. The released heat from decomposition can raise the temperature further and accelerate decomposition.

Hazardous polymerization: The decomposition is to a considerable extent dependant on time as well as temperature due to exothermic and autocatalytic reactions. The reactions involve rearrangements and polymerization.

Conditions to avoid: Keep this product away from heat, sparks, flame, and other sources of ignition (e.g. pilot lights, electric motors, static electricity).

Materials to avoid (incompatibles): Avoid contact with incompatible materials. See Section 7 (Handling and Storage) for further details.

Hazardous decomposition products: None known. Refer to 'Hazardous combustion products', Section 5.

SECTION 11 — TOXICOLOGICAL INFORMATION

Routes of exposure: Inhalation, ingestion, eye contact, skin contact.

Toxicological data: Information is based on data on the components and the toxicology of similar products.

LC₅₀, inhalation, (mg/L/4 hrs) = 2.5

LD₅₀, oral, rat (mg/kg) = 450

LD₅₀, dermal, rat (mg/kg) = >2000

Eye irritation: Irritating

Dermal irritation: Irritating

Skin sensitization: Not a skin sensitizer

Carcinogenicity: None of the ingredients are classified as carcinogenic by IARC, ACGIH, OSHA or NTP.

Teratogenicity, mutagenicity, other reproductive effects: No known teratogenic, mutagenic or reproductive effects.

Conditions aggravated by exposure: None

SECTION 12 — ECOLOGICAL INFORMATION

Environmental hazards: Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge

effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

Ecotoxicological information: This pesticide is toxic to mammals, fish and aquatic invertebrates. The ecotoxicity measured on the active ingredient (dimethoate) is:

Fish – 96-hr LC₅₀, Rainbow trout (*Oncorhynchus mykiss*) = 30.2 mg/l

21-day NOEC, Rainbow trout (*Oncorhynchus mykiss*) = 0.4 mg/l

Invertebrates – 48-Hr EC₅₀, Daphnids (*Daphnia magna*) = 2.0 mg/l

21-day NOEC, Daphnids (*Daphnia magna*) = 0.04 mg/l

Algae – 72-hr IC₅₀, Green algae (*Raphidocelis subcapitata*) = 90.4 mg/l

Birds – LD₅₀, Bobwhite quail (*Colinus virginianus*) = 10.5 mg/kg

Earthworms – 14-day LC₅₀, *Eisenia foetida foetida* = 31 mg/kg

14-day NOEC, *Eisenia foetida foetida* = 2.87 mg/kg

Bees – 48-hr LD₅₀, Honey bees (*apis mellifera*), acute oral > 0.12 µg/bee

Mobility: Moderate mobility. Absorption depends on soil pH and organic matter content.

Persistence and degradability: Not readily degradable.

Bioaccumulative potential: Not expected to bioaccumulate.

SECTION 13 — DISPOSAL CONSIDERATIONS

Handling for disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Methods of disposal: Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems. Refer to product label for specific container disposal instructions.

SECTION 14 — TRANSPORTATION INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
49CFR/DOT	UN3017	Organophosphorous pesticides, liquid, toxic, flammable (Dimethoate, Cyclohexanone)	6.1	III	
49CFR/DOT Additional information	None.				
TDG	UN3017	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE (Dimethoate, Cyclohexanone)	6.1	III	
TDG Additional information	None.				

SECTION 15 — REGULATORY INFORMATION

FIFRA: This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels on non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

WARNING

Colorless to light yellow liquid. Mercaptanic odor.

May be fatal if swallowed.

Causes substantial but temporary eye injury.

Do not get on eyes or on clothing.

Harmful if absorbed through skin.

Dimethoate 4E
August 06, 2020

Avoid contact with skin.

SARA TITLE III:

Sec. 302, Extremely Hazardous Substance Notification: Dimethoate

Sec. 311/312, Hazard Categories: Acute (immediate) health hazard
Chronic (delayed) health hazard
Fire

Sec. 313, Toxic Chemicals Notification: Dimethoate (30-60 %) CAS#: 60-51-5

California Proposition 65: Not applicable

CERCLA RQ: Dimethoate (10 lbs)
Cyclohexanone (5,000 lbs)

SECTION 16 — OTHER INFORMATION

NFPA Rating: 2 Health; 2 Flammability; 2 Reactivity
0-minimal 1- slight 2-moderate 3-severe 4-extreme

Prepared by: FMC Corporation

Revision date: August 06, 2020

Revision reasons: Format change