



MATERIAL SAFETY DATA SHEET

COBRA[®] 400EC

ASTRA INDUSTRIAL COMPLEX CO., LTD. (ASTRACHEM)
P.O. BOX 30447, AL-KHOBAR 31952
KINGDOM OF SAUDI ARABIA

1. PRODUCT IDENTIFICATION

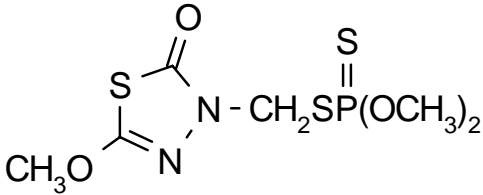
Product Name: COBRA[®] 400EC

Chemical Class: Insecticide, acaricide

Use: Cobra[®] 400EC is a non-systemic Organophosphorus insecticide and acaricide with stomach and contact action. It is used to control a variety of insects and mites and especially useful against scale insects in many crops such as fruit trees, vegetables, alfalfa, and sunflowers, and also in greenhouses and on rose-cultures. It works by inhibiting certain enzyme actions in the target pests.

Producer: Astra Industrial Complex Co., Ltd.
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Kingdom of Saudi Arabia
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2. COMPOSITION / INFORMATION ON INGREDIENTS

Substance	Proportions (% w/w)	Chemical structure
Methidathion Technical 96% CAS No. 950-37-8 Chemical Name: S-2,3-dihydro-5-methoxy-2-oxo-1,3,4-thiadiazol-3-ylmethyl O,O-dimethyl phosphorodithioate; 3-dimethoxyphosphinothioylthiomethyl-5-methoxy-1,3,4-thiadiazol-2(3H)-one (IUPAC)	39.83 (=400 g/L)	
Blend of anionic and nonionic emulsifiers	6.98	
Organic solvents	53.19	



3. HAZARD IDENTIFICATION

Signs of Poisoning:

Symptoms of acute exposure may include nausea, vomiting, cramps, diarrhea, salivation, headache, dizziness, muscle twitching, difficulty breathing, blurred vision, and tightness in the chest.

Acute exposure

May cause intense breathing problems including paralysis of the respiratory muscles.

The symptoms of acute methidathion poisoning are similar to acute exposure to parathion. The compound is also very highly toxic through exposure on the skin

Primary Routes of Entry:

Skin uptake is the main route of exposure. Inhalation of spray mist is a possible route of exposure.

Skin Absorption:

May be cause irritation and facial skin sensations.

Inhalation:

May be cause irritation to the respiratory system.

Eyes:

May be cause eye irritation.

4. FIRST AID MEASURES

Emergency and First aid Procedures

Ingestion:

If swallowed give one atropine tablet (0.6 mg) every 5 minutes until dryness of the mouth. Call a physician or poison control center. Do not induce vomiting. Do not give anything by mouth to an unconscious person. swallowed

Skin:

Wash affected area with plenty of soap and water. Remove contaminated clothing. Launder contaminated clothing separately. If poisoning occurs give atropine tablets (0.6 mg) Get medical attention.

Inhalation:

Remove victim to fresh air. If not breathing administer artificial respiration. Avoid unprotected mouth to mouth resuscitation. GET MEDICAL ATTENTION.



Eye:

Hold eyelids open and flush with a steady stream of water for at least 20 minutes. GET MEDICAL ATTENTION.

Note to Physician:

Treat as a potent cholinesterase inhibitor. Atropine sulphate is antidotal.

5. FIRE FIGHTING MEASURES

Fire and Explosion:

Flash point > 40 °C

COMBUSTIBLE

Flammable limits in air:

Not determined.

Auto ignition Temperature:

Not determined.

Extinguishing Media:

Use carbon dioxide or dry chemical for small fires and water fog or foam (alcohol, polymer or ordinary) for large fires. Cool containers from maximum distance.

Unusual fire and explosion hazards:

Noxious fumes may be emitted under fire conditions.

Special fire fighting procedures:

Fire fighters should use self contained breathing apparatus and full turnout gear. Prevent runoff of fire water. Avoid exposure to smoke. (Keep upwind).

6. ACCIDENTAL RELEASE MEASURES

Steps to be taken if material is released or spilled:

Dike the area using absorbent materials such as sand or clay. Recover and contain as much product as possible using absorbent. Clean spill area using a solution of water and detergent. Collect and contain wash water and all contaminated absorbent for disposal. If spilled on the ground, the affected area should be excavated to a depth of 1-2 inches. Prevent the spilled product or washing from reaching public sewers or waterways. Wear appropriate protective equipment during the cleanup. Ensure that tools and equipment are adequately decontaminated.



Waste disposal method:

Dispose of in accordance with local regulations.

Container disposal:

Dispose of in an approved facility according to local regulations.

7. HANDLING AND STORAGE

Store the product in a well-ventilated, secure area out of reach of children and domestic animals. Do not use or store near heat or open flame. Do not store food or feed in storage area. Prevent eating, drinking or smoking in areas where there is a potential exposure to the product. Wash hands before eating, drinking or smoking after using the product.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Protective equipment should be used during the following procedures:

- Manufacture, formulation or application of this product.
- Repair and maintenance of contaminated equipment
- Clear up of leaks and spills.
- Any other activity that may result in hazardous exposures.

Respiratory Protection:

Use MSHA/NIOSH approved respirator for organic vapors. Use positive pressure contained breathing apparatus where emergency conditions or where exposure limits are exceeded.

Ventilation:

Exhaust appropriate for removal of vapors.

Protective clothing:

Chemical resistant gloves, coveralls, apron and foot coverings.

Eye Protection:

Safety goggles or face shield.

User safety recommendations:

Safety showers and eye wash should be easily accessible.

Personnel Protection:

The product is very dangerous, particularly the concentrate. It is poisonous if absorbed by skin contact, inhaled or swallowed. Repeated minor exposure may have a cumulative poisoning effect.



Avoid contact with eyes and skin. Do not inhale vapour. Obtain an emergency supply of atropine tablets 0.6 mg. When opening container preparing spray or using the prepared spray, wear protective, wear cotton overalls buttoned to the neck and wrist and washable hat, elbow-length PVC gloves and face shield. After use and before eating drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, face shield and contaminated clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Assay	"Methidathion" 400 g/L
Appearance	Light brown to yellow liquid free from visible impurities.
Odour	Strong aromatic odour
Water Contents	< 0.2 %
Flammability	Not flammable
Flash Point	> 40 °C
Explosivity	Not explosive
Solubility in Water:	Forms emulsion

10. STABILITY AND REACTIVITY

Stability	Relatively stable in neutral and slightly acid media; does not change its content during three days in a phosphate buffer or in a 0.01 N HCl solution. Stability in alkaline media is low.
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Condition to avoid: Excessive heat.

11. TOXICOLOGICAL INFORMATION

Toxicology Data (Active ingredient):

Acute Oral LD ₅₀ (rat)	25-54, mg/kg
Acute Inhalation LC ₅₀ (4 h rat)	140. mg/m ³ air
Eye Irritation (rabbit)	Non-irritating to eyes
Dermal Irritation (rabbit)	Non-irritating to skin

Carcinogenicity:

Methidathion is unlikely to pose a developmental risk to humans.



Teratogenicity:

Methidathion did not induce any genetic changes in a number of tests for gene mutation, chromosomal aberrations, and DNA damage. The various gene mutation studies were conducted on hamster bone marrow cells, in mammalian cells, and on several species of bacteria. These data indicate that methidathion is not mutagenic

Mutagenicity

Methidathion caused malignant and benign liver tumors (adenomas) in male mice fed 2.5 mg/kg/day for 2 years. Additional tumors (carcinomas) were found in the male mice fed 5 mg/kg/day over the same period. This higher feeding level also produced numerous other signs of toxicity. Since these results apply to only one sex in one species, the carcinogenic potential of methidathion is unclear.

12. ECOLOGICAL INFORMATION

Keep out of water supplies ground water or open water. This product is toxic to bees, fish and other aquatic life.

13. DISPOSAL CONSIDERATION

Pesticide wastes are toxic. Do not reuse product containers. Dispose of product containers, waste containers and residues according to local health and environmental regulations.

14. TRANSPORT INFORMATION

Proper Shipping Name	Organophosphorus Pesticide (Methidathion)
UN number	UN No. 3018
Class	6.1 (Toxic)
Packing Group	II
Marine Pollutant	Yes

15. REGULATORY INFORMATION.

Agricultural use Insecticide/Acaricide

16. OTHER INFORMATION

Buyer assumes all responsibility for safety and use not in accordance with the product label instructions.