



MATERIAL SAFETY DATA SHEET

ETHIO[®] 400EC

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

1. PRODUCT IDENTIFICATION

Product Name: **ETHIO[®] 400EC**

Chemical Class: **Organophosphorus** Acaricide/Insecticide.

Use: ETHIO 400EC is an emulsifiable concentrate acaricide/insecticide formulation based on organophosphorus active ingredient "Ethion". It is used for the control of spider mites, aphids, scale insects, thrips, lepidopterous larvae, leafhoppers and other insects in pome fruits, stone fruits, citrus, vines, vegetables, ornamentals, cotton, maize, sorghum, cucurbits, strawberries, turf, and other crops. It has active against mobile stages of mites when applied as a dormant spray, and overwintering forms of many pest species.

Producer: **Astra Industrial Complex Co., Ltd.**
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2. COMPOSITION / INFORMATION ON INGREDIENTS

| Substance | Proportions (% w/w) | Chemical structure |
|--|------------------------|--------------------|
| Ethion 95.5% Tech CAS No. 563-12-2 Chemical Name: O,O,O',O'-tetraethyl S,S'-methylene bis(phosphorodithioate) (IUPAC) | 41.83 (400 g/L) | |
| Blend of anionic and nonionic Surfactants | 5.05 | |
| Organic Solvent | 53.12 | |



3. HAZARD IDENTIFICATION

Ethio 400EC is classified as moderately hazardous. Not irritating to skin, non-irritant to eyes and not a known skin sensitizer.

Toxicity class WHO (a.i.) II; EPA (formulation) II, **EC hazard** T; R25/ Xn; R21

4. FIRST AID MEASURES

First Aid:

Ingestion

Do not induce vomiting. Do not administer milk or fats. If you feel unwell, get medical advice. Gastric lavage with 5% sodium bicarbonate may be given if swallowed.

Inhalation

Remove the victim to fresh air. If not breathing, give artificial respiration. Obtain immediate medical attention

Eye

Rinse with plenty of water or saline solution at least for 15 minutes. If irritation persists call a physician.

Skin

Remove contaminated clothing immediately. Wash with plenty of soap and water. Get medical attention immediately.

Antidote

Atropine 2 - 4 mg. I.M or sub-cutaneous at 3-10 minutes intervals, until full atropinization. 2 – PAM, 1-2 g dissolved in 10 c.c of distilled water and inject intervenously slowly for 10 – 15 minutes, 2-PAM should be used in conjunction with atropine and not alone.

Information for Physicians:

Atropinise the patient immediately and maintain full atropinisation by repeated doses at 2 to 4 mg at 5 min to 10 min. interval for hours together. The need for further atropine administration is indicated by the continuance of symptoms. As much as 24 to 50 mg may be required in a day. The extent of salivation is a useful criterion to follow in adjusting the dosage of atropine. Administer 1-2 gm of 2-pyridine-2-aldozine-N-methyl-odine (2-PAM) diluted in 10 cc of



distilled water and injected intravenously, very slowly taking 10 to 15 min.

5. FIRE FIGHTING MEASURES

Extinguishing Media

Dry chemicals, CO₂, halon, water spray or standard foam. For large fires, use water spray, fog or standard foam.

Special Fire Fighting Procedures.

Wear full protective clothing and self-contained breathing apparatus. Do not breathe smoke, gases or vapours generated. Try to keep containers cool with soft stream water fog.

Hazardous Decomposition Products:

Thermal decomposition products may release sulfur and phosphorus.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Keep unnecessary people away. Isolate hazard area and deny entry. Do not smoke. Avoid contact and inhalation of closed places before entering.

Cleanup Methods:

Wear protective equipment.

Small Spillage:

Absorb on inert absorbing material. Shovel up into covered containers for disposal.

Large Spillage:

Should be dammed-off and pumped into containers, soak up remainder with absorbent material and dispose of in accordance with local regulations.

Precautions for the environment:

Avoid dispersion. Isolate discharged material and keep material out of water sources. Prevent product from entering drains.



Personal Protection

Wear suitable chemical protective clothing, boots, natural rubber gloves, goggles and respiratory protective mask.

7. HANDLING AND STORAGE

General precautions:

Do not smoke, drink or eat during handling. Wash hands using liquid detergents. Wear protective clothing to avoid contact and/or inhalation with the product. Eliminate all sources of ignition from areas where the material is handles or used. Good personal hygiene procedures must be practiced.

Keep in original containers, tightly closed and locked up. Keep out of the reach of children and away from food.

Specific Conditions

Good local exhaust ventilation. Full - face protective mask.

Storage

Place in cool and ventilated areas. This would indicate a potential explosion hazard from exposure of the material to heat in a closed container. Store in area designated specifically for pesticides and keep away from excessive heat. Properly keep away from food and drink.

Fire fighting Measures:

The product is not considered flammable. Only the packaging will burn. In case of fire, suitable extinguishing media are: any dry media, foam, carbon dioxide (CO₂). If water has been used to absorb toxic vapours. Avoid breathing toxic vapors, keep upwind. Consider evacuation of downwind area if material is leaking.

In compatible materials:

Ethion: Bases: may hydrolyze. Lime: may hydrolyze. Acid: may hydrolyze.



8. EXPOSURE CONTROLS / PERSONAL PROTECTION.

Exposure Standards

Ethion: 0.4 mg/m³ OSHA TWA (Skin). 0.4 mg/m³ ACGIH TWA
(skin)

General Precautions:

Good local exhaust ventilation.

Avoid long-term exposure, even small quantities. Repeated inhalation or skin contact may without symptoms progressively increase susceptibility to Ethio poisoning

Personnel Protection

Facial skin contact may cause temporary facial numbness. Sensitive workers should use protective clothing. Avoid contact with eyes and skin. Do not inhale spray mist. When preparing spray wear cotton overalls buttoned to the neck and wrist and washable hat, elbow-length PVC gloves and face shield or goggles. 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 or goggles and contaminated clothing.

Skin Protection:

Natural rubber gloves and appropriate protective clothing, necessary to prevent skin contact with the product

Other protective equipment:

Showers and eye - washers in working area.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Appearance: | Clear yellow Liquid free of visible impurities. |
| Water contents: | < 2 g / Kg |
| Acidity as H ₂ SO ₄ : | < 0.5% g / Kg |
| Density: | 0.996 – 1.008 Kg/L |
| Flash point: | >27°C |



10. STABILITY AND REACTIVITY

Conditions to Avoid:

May burn but does not ignite readily. Containers may explode in heat of fire.

Materials to avoid

Acidic and alkaline materials.

Hazardous Decomposition Products

Thermal decomposition may release toxic oxides of sulphur and phosphorous.

11. TOXICOLOGICAL INFORMATION

Route of Exposure:

Moderately toxic by dermal absorption and ingestion. Effects of exposure are cholinesterase inhibitor and may affect nervous system.

Ethion Technical:

Acute Toxicity:

| | |
|---|------------------------------------|
| LD₅₀ Oral (rats): | 208 mg/Kg |
| (mice) | 62.5 mg/Kg |
| LD₅₀ Dermal (male rats) | 838 mg/kg |
| (female rats) | 891 mg/Kg |
| LC₅₀ (4 h) (rats) | 0.45 mg Tech |
| LC₅₀ inhalation (female rats) | 270.5 µg/l air |
| Eye irritation | Non irritant to eyes (Rabbits) |
| Skin irritation | Non irritant to skin (Rabbits) |
| Sensitization | Not a skin sensitizer (guinea pig) |
| ADI | 0.002 mg/kg b.w (JMPR, 1990) |



12. ECOLOGICAL INFORMATION

Effects on Birds

| | |
|---------------------------------------|-----------------|
| Acute oral LD ₅₀ (Chicken) | 11640 mg/Kg |
| (Pigeon) | 331 mg/Kg |
| Ducks | >2000 mg/kg |
| Quail | 128 mg/Kg (a.i) |

Fish.

Toxic to fish. Average lethal concentration 0.72 mg/l (24 h); 0.52 mg/l (48 h).

Effect on Non-Target Organisms.

Bees: Toxic to bees

13. DISPOSAL CONSIDERATION.

Disposal Method

Do not contaminate ponds, waterways or ditches with chemical or used containers. Dispose of in facility permitted for hazardous waste.

Container disposal:

Empty container retains product residue. Triple rinse, or equivalent, empty container, return rinse water to dilution mixture, and dispose of dilution mixture as a hazardous waste if it cannot be disposed of by use according to label instructions. Do not reuse container. Offer if for recycling or reconditioning, or puncture and dispose of in properly permitted landfill.

14. TRANSPORT INFORMATION

| | |
|-----------------------|--|
| Proper Shipping Name: | Organophosphorus, LIQUID, FLAMMABLE (Ethion) |
| UN number | UN 2903 |
| Class | 6.1 |
| Packing Group | III |
| Marine Pollutant | |



15. REGULATORY INFORMATION.

Ethio 400EC is General Use Pesticides (GUP) that is moderately toxic compound. Label bears the Signal Word WARNING. Ethion technical falls under toxicity class II in EPA classification.

16. OTHER INFORMATION

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