

**Material Safety Data Sheet (MSDS)**  
**Maxima 280 EC**

**IDENTIFICATION OF THE SUPPLIER:**

**AGRO CHEMICALS INDUSTRIES LTD**  
**JORDAN AMMAN**  
**P.O.Box 183020 Amman 11118 Jordan**  
**Tel. +962 6 5548224/5**  
**Fax. +962 6 5548220**  
**E-mail [info@aci.com.jo](mailto:info@aci.com.jo)**

**PRODUCT IDENTIFICATION:**

**Common Name:** cypermethrin 12% + tetramethrin 4% + PBO 4% w/v

**Trade Name:** Maxima 280 EC

**Type of formulation :** Emulsifiable Concentrate (EC)

**Chemical Name:**

**Cypermethrin:** cyano(3-phenoxyphenyl)methyl 3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate

**Tetramethrin:** (1,3,4,5,6,7-hexahydro-1,3-dioxo-2H-isoindol-2-yl)methyl 2,2-dimethyl-3-(2-methyl-1-propenyl)cyclopropanecarboxylate

**PBO:** 5-[[2-(2-butoxyethoxy)ethoxy]methyl]-6-propyl-1,3-benzodioxole

**Chemical Formula:**

**Cypermethrin:**  $C_{22}H_{19}Cl_2NO_3$

**Tetramethrin:**  $C_{19}H_{25}NO_4$

**PBO:**  $C_{19}H_{30}O_5$

**Molecular Weight:**

**Cypermethrin:** 416.3

**Tetramethrin:** 331.4

**PBO:** 338.4

**PRODUCT COMPOSITION:**

<b>Active Ingredient:</b>	<b>% w/v</b>	<b>CAS #</b>
Cypermethrin	12%	[52315-07-8]
Tetramethrin	4 %	[7696-12-0]
PBO	4 %	[51-03-6]
<b>Inert ingredient:</b>		
Emulsifier	8%	--
Solvent	Up to 100%	--



## FIRST AID MEASURES:

**Eyes:** Flush with water for at least 15 minutes. If irritation occurs and persists, obtain medical attention.

**Skin:** Wash with plenty of soap and water.

**Ingestion:** Drink 1 or 2 glasses of water and induce vomiting by touching the back of the throat with a finger or by giving syrup of ipecac. Never induce vomiting or give anything by mouth to an unconscious person. Contact a medical doctor.

**Inhalation:** Remove to fresh air. If breathing difficulty or discomfort occurs and persists, contact a medical doctor.

## FIRE FIGHTING MEASURES:

**EXTINGUISHING MEDIA:** Foam, carbon dioxide or dry chemical.

**EXPLOSION HAZARDS:** Slightly combustible.

**FIRE FIGHTING PROCEDURES:** Isolate fire area. Evacuate downwind. Wear full protective clothing and self-contained breathing apparatus. Do not breathe smoke, gases or vapors generated.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Heat and fire may result in thermal decomposition and the release of carbon monoxide, carbon dioxide, hydrogen cyanide, chlorine and hydrogen chloride.

Note: **FIRE FIGHTING:**

This product is contain a volatile liquid and gives off invisible vapors, either the liquid or vapor may settle in low areas or travel some distance along the ground or surface to ignition sources where they may ignite or explode.

## ACCIDENTAL RELEASE MEASURE:

**RELEASE NOTES:** Isolate and post spill area. Wear protective clothing and personal protective equipment .

Keep material out of lakes, streams, ponds and sewer drains. Large spills should be covered to prevent dispersal. prevent runoff or dispersion of excess liquid by diking and absorbing with a non-combustible absorbent such as clay, sand or soil. Vacuum, shovel or pump all waste material, including absorbent, into a drum and label contents for disposal.

## HANDLING AND STORAGE:



**GENERAL PROCEDURES:** Store in a cool, dry, well-ventilated place. Do not use or store near heat, open flame or hot surfaces. Store in original containers only. Keep out of reach of children and animals. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.

## EXPOSURE CONTROL / PERSONAL PROTECTION:

### PERSONAL PROTECTIVE EQUIPMENT

**Eyes and face:** wear chemical protective goggles or a face shield.

**Respiratory:** a properly fitted half-face or full-face air-purifying respirator which is approved for pesticides. Respirator use and selection must be based on airborne concentrations.

**Protective clothing:** wear coveralls or long-sleeved uniform and head covering. wear full body cover barrier suit, such as a PVC suit. Leather items - such as shoes, belts and watchbands - that become contaminated should be removed and destroyed. Launder all work clothing before reuse (separately from household laundry).

**Work hygienic practices:** Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking or using tobacco. Shower at the end of the workday.

**GLOVES:** Wear chemical protective gloves made of materials such as rubber, neoprene or nitrile. Thoroughly wash the outside of gloves with soap and water prior to removal. Inspect regularly for leaks.

## PHYSICAL AND CHEMICAL PROPERTIES:

<b>Appearance:</b>	yellow color- clear liquid
<b>Odor:</b>	mild odor
<b>PH:</b>	5 @ 20°C (5% in water)
<b>Solubility in water:</b>	Emulsion
<b>Density:</b>	0.94 gm/L

## STABILITY AND REACTIVITY:

<b>CONDITIONS TO AVOID:</b>	Excessive heat and fire.
<b>STABILITY:</b>	Stable
<b>POLYMERIZATION:</b>	Will not occur



## TOXICOLOGICAL INFORMATION:

**DERMAL LD50:** >2000 mg/kg (rabbit)

**ORAL LD50:** 2342 mg/kg (rat)

**INHALATION LC50:** 2.5 mg/L/4 hr (rat)

**ACUTE EFFECTS FROM OVEREXPOSURE:** It is expected to have low inhalation toxicity. It is minimally irritating to the eyes, and non-irritating to the skin.

**CHRONIC EFFECTS FROM OVEREXPOSURE:** No data available for the formulation. In studies with laboratory animals, cypermethrin did not cause reproductive toxicity, teratogenicity, neurotoxicity or carcinogenicity in male and female rats and male mice. Cypermethrin caused an increase in benign lung tumors in female mice at 1600 ppm in the diet. The EPA concluded on a weight of evidence approach that cypermethrin represents a low oncogenic potential to female mice at this dose level (approximately 228 mg/kg/day). Liver enlargement is often noted in laboratory animals that have ingested large doses of cypermethrin during their life span. An overall absence of genotoxicity has been demonstrated in tests of mutagenicity, DNA damage and chromosome aberrations.

## ECOLOGICAL INFORMATION

**ENVIRONMENTAL DATA:** cypermethrin degrades at a slower rate which is governed by soil characteristics (e.g., pH). The rate of cypermethrin hydrolysis is somewhat faster under alkaline conditions than at neutral or acidic pH. Cypermethrin has a high affinity for organic matter and a Log Pow of 5.0, but has demonstrated a low potential for bioconcentration (BCF = 17). Cypermethrin is not mobile in soil.

**ECOTOXICOLOGICAL INFORMATION:** Cypermethrin is considered highly toxic to fish and aquatic arthropods, and has LC50 values which range from 0.004 µg/L to 3.6 µg/L. The aquatic arthropods tended to be some of the more sensitive species. Care should be taken to avoid contamination of the aquatic environment.

## DISPOSAL CONSIDERATIONS



- 1) After intended use:** Triple rinse containers before disposal and add rinsings to the tank mix or dispose of in a disposal pit away from waterways. Destroy empty containers by breaking, crushing or puncturing them. Bury containers at a depth of 500 mm or more at a safe disposal site, or take them to a dump that does not burn its refuse. Do not burn empty containers or product.
- 2) After spill or accident:** Dispose of sealed containers at an approved local waste disposal site.

