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READ THE ENTIRE LABEL BEFORE USING THIS PRODUCT.

USE ONLY IN ACCORDANCE WITH INSTRUCTIONS.

KEEP OUT OF REACH OF CHILDREN

## ANTICHOKE 500 SC



### INGREDIENTS

Atrazine.....50%  
Other ingredients .....50%

ANTICHOKE 500 SC is a triazine herbicide. It contains as its active ingredient, Atrazine.

ANTICHOKE 500 SC is a selective triazine herbicide used to control broadleaf and grassy weeds in corn, sorghum, sugarcane, pineapple, christmas trees, and other crops, and in conifer reforestation plantings. It is also used as a nonselective herbicide on non-cropped industrial lands and on fallow lands. Over 64 million acres of cropland were treated with atrazine in the U.S. in 1990. It is available as dry flowable, flowable liquid, liquid, water dispersible granular, and wettable powder formulations.

Trade Names Of Other Firms: Trade names for products containing atrazine include Aatrex, Aktikon, Alazine, Atred, Atranex, Atrataf, Atratol, Azinotox, Crisazina, Farmco Atrazine, G-30027, Gesaprim, Giffex 4L, Malermals, Primatol, Simazat, and Zeapos

### What is ANTICHOKE 500 SC and how does it work?

ANTICHOKE 500 SC is a triazine herbicide. Triazines react through a chlorine group with hydroxyl groups present in cellulose fibres in nucleophilic substitution.

### Key Benefits of ANTICHOKE 80 WP:

1. Quick knockdown effect.
2. Highly effective against broadleaf weeds

### PRECAUTIONS

Harmful if swallowed, inhaled or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco. Remove contaminated clothing and wash before reuse. Keep children or pets away from treated area until dry.

### SYMPTOMS OF POISONING

Irritation on skin or eyes.

### MEDICAL TREATMENT

No specific antidote is available. Treatment is symptomatic.

### FIRST AID

If on skin, remove contaminated clothes. Rinse and then rinse skin immediately with plenty of water and soap for 15-20 minutes. Call a poison control centre or doctor for treatment advice. If inhaled, move person for fresh air. If person is not breathing, call for an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control centre or doctor for further treatment advice. If in eyes, first hold eye open and rinse with plenty of water for 15-20 minutes (remove contact lenses if easily possible). Call poison control center or doctor for treatment advice. If ingested, call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do NOT induce vomiting unless told to do so by poison control center or doctor. Do not give anything to an unconscious person.

### DIRECTIONS OF USE

ANTICHOKE 500 SC can be applied preplant surface, preplant incorporated, pre-emergence or post-emergence. The total maximum application (pre and post treatments combined) that can be applied each calendar year is 2.5 lbs./a.i. per acre (5.0 pts. ANTICHOKE 50 SC). For corn and sorghum, do not exceed a single application rate of 2.0 lbs./a.i. per acre. In a post-emergence application, crop oil may be added to sprays in corn and sorghum to improve weed control. However, under certain conditions, crop oil may seriously injure the crop. Please see label for guidelines.

**Ground Application:** For all applications spray

the mixture at a minimum of 10 gals./A.

**Aerial Application:** Apply in a minimum of 1.0 qt. of water for each qt. of product applied per acre. For post-emergence treatments on corn and sorghum, apply recommended rate in a minimum of 2.0 gals. of water per acre. Use aerial application only when broadcast applications are specified. Aerial drift may occur if improperly applied. See label for detailed application instructions. Do not apply this product through any type of irrigation system.

**CORN OR GRAIN SORGHUM  
Preplant Surface-Applied, Preplant Incorporated, or Preemergence (or Postemergence at 4 pts./A of ANTICHOKE 500 EC With Oil)**

#### **Broadleaf and Grass Weeds Controlled**

- barnyardgrass (watergrass)\*\*\*
- cocklebur\*\*
- giant foxtail\*\*
- groundcherry
- green foxtail\*\*\*
- jimsonweed
- large (hairy) crabgrass\*\*
- kochia
- wild oats
- lambsquarters
- witchgrass (*Panicum capillare*)\*\*\*
- annual morningglory
- yellow foxtail\*\*\*
- mustards
- nightshade
- pigweed
- purslane
- ragweed
- sicklepod\*\*
- velvetleaf (buttonweed)\*\*\*
- annual morningglory
- pigweed
- cocklebur
- ragweed
- jimsonweed
- smartweed
- lambsquarters
- wild buckwheat
- mustards
- velvetleaf\*\*

\*\*Partial control only.

\*\*\*Partial control only on medium- and fine-textured soils.

**Turfgrass for Fairways, Bermudagrass Sod Production, and Residential Sites (Including Homes, Daycare Facilities, Schools, Playgrounds, Parks, Recreational Areas, and Sports Fields)**

#### **Bermudagrass, Centipedegrass, St. Augustinegrass, and Zoysiagrass**

- Do not apply more than 1.0 lb. a.i./A (2 pts. of ANTICHOKE 500 EC) for any application.
- Do not apply more than 2.0 lbs. a.i./A (4 pts. of ANTICHOKE 500 EC) per year.

Apply ANTICHOKE 500 EC after October 1 before emergence of winter annual weeds for control of annual bluegrass, burclover, carpet burweed, chickweed, corn speedwell, henbit, hop clover, and spurweed. ANTICHOKE 500 EC will control annual bluegrass even if it is emerged at time of treatment. For control of summer annual weeds listed in the preemergence section of the **ANTICHOKE 500 EC Applied Alone – Corn or Grain Sorghum** section of this label, also apply ANTICHOKE 500 EC in late winter before the weeds emerge. Apply in a minimum of 15 gals. of water per acre or 1 gal./1,000 sq. ft.

For continued summer annual weed control, apply another 2 pts./A of ANTICHOKE 500 EC at least 30 days after the previous application. However, do not make more than 2 applications of this product per year. On bermudagrass, spring applications may slow green-up and do not apply after April 15.

*Precautions: On newly sprigged turfgrass and hybrid bermudagrass, temporary slowing of growth and yellowing may occur following application. To avoid turf injury, (1) Use only on turfgrass reasonably free of infestations of insects, nematodes, and diseases. (2) Do not use on golf greens. (3) Do not use north of NC (except in the VA Coastal Plains) or west of the high rainfall areas of eastern OK and eastern TX. (4) Do not use on muck or alkaline soils. (5) Do not apply over the rooting area of trees or ornamentals not listed on this label. (6) Do not overseed with desirable turfgrass within 4 months before or 6 months after treatment. (7) Do not apply this product to newly seeded bermudagrass or zoysiagrass until it has overwintered and has a well-developed rhizome system.*

**Note:** Do not graze or feed turf clippings to animals, or illegal residues may result.

#### **MACADAMIA NUTS**

- Do not apply more than 4.0 lbs. a.i./A of atrazine for any application.
- Do not apply more than 8.0 lbs. a.i./A of atrazine per year.

For preemergence control of many broadleaf and grass weeds, including crabgrass, foxtail, wiregrass, Flora's paintbrush, spanishneedles, and fireweed, broadcast 4-8 pts./A of ANTICHOKE 500 EC before harvest and before weeds emerge. Repeat as necessary. Do not

spray when nuts are on ground during harvest period. Do not apply by air.

#### **GUAVA**

- Do not apply more than 4.0 lbs. a.i./A of atrazine per acre for any application.
- Do not apply more than 8.0 lbs. a.i./A of atrazine per year.

Use only on established plantings which are at least 18 months old. Apply as a directed spray at 4-8 pts./A of ANTICHOKE 500 EC in 20-50 gals. of spray mix preemergence or early postemergence to weeds. When applying postemergence, the use of a surfactant and greater spray volume (80-100 gals. of spray mix per acre) may enhance weed control. This product controls many annual broadleaf and grass weeds, including fireweed, purslane, scarlet pimpernel, spanishneedles, and sowthistle.

**Notes:** To avoid illegal residues, (1) Do not allow spray to contact foliage or fruit. (2) Do not apply more frequently than at 4-month intervals. (3) Do not apply more than 16 pts. of ANTICHOKE 500 EC per year.

#### **DISPOSAL METHODS**

Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

#### **STORAGE CONDITION**

Store in the closed, original container in a cool, well-ventilated area. Do not store for prolonged periods in direct sunlight. Store in a locked room or place away from children, animals, flood, feedstuffs, seed and fertilizers. Triple or preferably pressure rinse containers before disposal. Add rinsing to spray tank.

For More Details including effects on environment email [contact@ivorychem.com](mailto:contact@ivorychem.com) with Subject "ANTICHOKE 500 EC DETAILS"

More Details:

#### **TOXICOLOGICAL EFFECTS**

- **Acute toxicity:** Atrazine is slightly to moderately toxic to humans and other

animals. It can be absorbed orally, dermally, and by inhalation. Symptoms of poisoning include abdominal pain, diarrhea and vomiting, eye irritation, irritation of mucous membranes, and skin reactions [3]. At very high doses, rats show excitation followed by depression, slowed breathing, incoordination, muscle spasms, and hypothermia [3]. After consuming a large oral dose, rats exhibit muscular weakness, hypoactivity, breathing difficulty, prostration, convulsions, and death [16]. Atrazine is a mild skin irritant. Rashes associated with exposure have been reported. The oral LD50 for atrazine is 3090 mg/kg in rats, 1750 mg/kg in mice, 750 mg/kg in rabbits, and 1000 mg/kg in hamsters. The dermal LD50 in rabbits is 7500 mg/kg and greater than 3000 mg/kg in rats [15,16]. The 1-hour inhalation LC50 is greater than 0.7 mg/L in rats. The 4-hour inhalation LC50 is 5.2 mg/L in rats [3,6].

- **Chronic toxicity:** Some 40% of rats receiving oral doses of 20 mg/kg/day for 6 months died with signs of respiratory distress and paralysis of the limbs. Structural and chemical changes in the brain, heart, liver, lungs, kidney, ovaries, and endocrine organs were observed [3,16]. Rats fed 5 or 25 mg/kg/day of atrazine for 6 months exhibited growth retardation. In a 2-year study with dogs, 7.5 mg/kg/day caused decreased food intake and increased heart and liver weights. At 75 mg/kg/day, there were decreases in food intake and body weight gain, increased adrenal weight, lowered blood cell counts, and occasional tremors or stiffness in the rear limbs [3].
- **Reproductive effects:** Dietary doses of atrazine given to rats on days 3, 6 and 9 of gestation up to about 50 mg/kg/day caused no adverse reproductive effects [3].
- **Teratogenic effects:** Atrazine does not appear to be teratogenic. In mice, atrazine did not cause abnormalities in fetuses whose dams were given doses of 46.4 mg/kg/day during days 6 through 14 of gestation [3].
- **Mutagenic effects:** The weight of evidence from more than 50 studies indicates that atrazine is not mutagenic [3].
- **Carcinogenic effects:** Atrazine did not cause tumors when mice were given oral doses of 21.5 mg/kg/day from age 1 to 4 weeks, followed by dietary doses of 82 mg/kg for an additional 17 months.

However, mammary tumors were observed in rats after lifetime administration of high doses of atrazine [3]. Thus, available data regarding atrazine's carcinogenic potential are inconclusive.

- **Organ toxicity:** Lethal doses of atrazine in test animals have caused congestion and/or hemorrhaging to the lungs, kidneys, liver, spleen, brain, and heart [3]. Long-term consumption of high levels of atrazine has caused tremors, changes in organ weights, and damage to the liver and heart [3].
- **Fate in humans and animals:** Atrazine is readily absorbed through the gastrointestinal tract. When a single dose of 0.53 mg atrazine was administered to rats by gavage, 20% of the dose was excreted in the feces within 72 hours. The other 80% was absorbed across the lining of the gastrointestinal tract into the bloodstream. After 72 hours, 65% was eliminated in the urine and 15% was retained in body tissues, mainly in the liver, kidneys, and lungs [3].

## ECOLOGICAL EFFECTS

- **Effects on birds:** Atrazine is practically nontoxic to birds. The LD50 is greater than 2000 mg/kg in mallard ducks. At dietary doses of 5000 ppm, no effect was observed in bobwhite quail and ring-necked pheasants [15,16].
- **Effects on aquatic organisms:** Atrazine is slightly toxic to fish and other aquatic life. Atrazine has a low level of bioaccumulation in fish. In whitefish, atrazine accumulates in the brain, gall bladder, liver, and gut [16].
- **Effects on other organisms:** Atrazine is not toxic to bees [16].

## ENVIRONMENTAL FATE

- **Breakdown in soil and groundwater:** Atrazine is highly persistent in soil. Chemical hydrolysis, followed by degradation by soil microorganisms, accounts for most of the breakdown of atrazine. Hydrolysis is rapid in acidic or basic environments, but is slower at neutral pHs. Addition of organic material increases the rate of hydrolysis. Atrazine can persist for longer than 1 year under dry or cold conditions [21]. Atrazine is moderately to highly mobile in soils with low clay or organic matter content. Because it does not adsorb strongly to

soil particles and has a lengthy half-life (60 to >100 days), it has a high potential for groundwater contamination despite its moderate solubility in water [20].

Atrazine is the second most common pesticide found in private wells and in community wells [16]. Trace amounts have been found in drinking water samples and in groundwater samples in a number of states [23,21]. A 5-year survey of drinking water wells detected atrazine in an estimated 1.7% of community water systems and 0.7% of rural domestic wells nationwide. Levels detected in rural domestic wells sometimes exceeded the MCL [23]. The recently completed National Survey of Pesticides in Drinking Water found atrazine in nearly 1% of all of the wells tested [23].

- **Breakdown in water:** Atrazine is moderately soluble in water. Chemical hydrolysis, followed by biodegradation, may be the most important route of disappearance from aquatic environments. Hydrolysis is rapid under acidic or basic conditions, but is slower at neutral pHs. Atrazine is not expected to strongly adsorb to sediments. Bioconcentration and volatilization of atrazine are not environmentally important [21]. Atrazine has been detected in each of 146 water samples collected at 8 locations on the Mississippi, Ohio and Missouri Rivers and their tributaries. For several weeks, 27% of these samples contained atrazine concentrations above the EPA's maximum contaminant level (MCL) [24].
- **Breakdown in vegetation:** Atrazine is absorbed by plants mainly through the roots, but also through the foliage. Once absorbed, it is translocated upward and accumulates in the growing tips and the new leaves of the plant. In susceptible plant species, atrazine inhibits photosynthesis. In tolerant plants, it is metabolized [6]. Most crops can be planted 1 year after application of atrazine. Atrazine increases the uptake of arsenic by treated plants [16].

## PHYSICAL PROPERTIES AND GUIDELINES

### Physical Properties:

- **Appearance:** Atrazine is a white, crystalline solid [6].
- **Chemical Name:** 2-chloro-4-

ethylamine-6-isopropylamino-S-triazine  
[6]

- **CAS Number:** 1912-24-9
- **Molecular Weight:** 215.69
- **Water Solubility:** 28 mg/L @ 20 C [6]
- **Solubility in Other Solvents:**  
chloroform v.s.; diethyl ether v.s.;  
dimethyl sulfoxide v.s. [6]
- **Melting Point:** 176 C [6]
- **Vapor Pressure:** 0.04 mPa @ 20 C [6]
- **Partition Coefficient:** 2.3404 [6]
- **Adsorption Coefficient:** 100 [20]



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