

MATERIAL SAFETY DATA SHEET

Manufacturer/information service:

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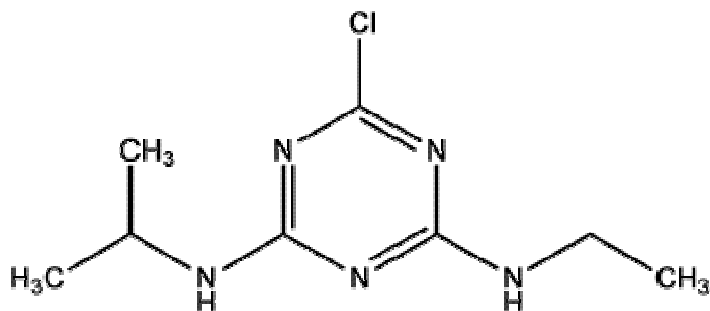
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1. Chemical Product Identification

Product Name: Atrazine

Molecular Formula: $C_8H_{14}ClN_5$

Structural formula:



Molecular Weight: 215.69g/mole

Chemical Name: 6-chloro-N'-ethyl-N-isopropyl-1,3,5-triazine-2,4-diamine

Color: White or grey

Odor: Odorless

CAS No.: 1912-24-9

UN No.: 2763

2. Composition / Information On Ingredients

Composition	CAS No.	Content %
Atrazine	1912-24-9	97.0%
Other ingredients		3.0%

3. Hazards Identification

Fire: Combustible under specific conditions. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.

Atrazine can affect when breathed in and by passing through the skin. It should be handled as a carcinogen—with extreme caution. Contact may irritate the eyes and skin.

Atrazine may cause a skin allergy. If allergy develops, very low future exposures can cause itching and a skin rash.

Exposure to very high levels may affect the nervous system.

4. First Aid Measures

Skin: Rinse and then wash skin with water and soap.

Eyes: First rinse with plenty of water for several minutes (remove contact lenses if easily possible), and then take to a doctor.

Inhalation: Refer for medical attention.

Ingestion: Rinse mouth. Refer for medical attention.

Note to physician: There is no specific antidote for Atrazine. If this product is ingested, induce emesis or lavage stomach. The use of an aqueous slurry of activated may be considered.

Antidote: not applicable

5. Fire-Fighting Measures

Flash point: >200 degree F

Extinguishing media: Powder, water spray, foam, carbon dioxide.

Fire fighting procedures: Assure protective clothing is worn and self-contained breathing apparatus is used, Prevent runoff if possible.

Measures of personal protection: safety glasses or goggles, rubber gloves, shoes plus socks, long-sleeved shirt, and long pants and hats.

6. Accidental Release Measures

Personal cautions: safety glasses or goggles, rubber gloves, shoes plus socks, long-sleeved shirt, and long pants and hats.

Cleaning methods

EX: clear the material in time. Transfer to a properly labeled deposit that will be closed and sealed until the recovery of elimination of the product.

Environmental cautions

EX: prevent the contamination of the floor and of beds of water.

7. Handling And Storage:

Storage: Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs.

Technical protective measures:

Fire and explosion protection: the area must be far from fire and flammable materials, high temperature and strong oxidizers.

8. Exposure Controls / Personal Protection

Personal protective equipment

Respiratory protection: Ventilation

Protective gloves: safety gloves.

Eye protection: Safely spectacles.

Industrial hygiene: Industrial hygienists are available to answer your questions regarding the control of chemical exposures using exhaust

ventilation, special work practices, good housekeeping, good hygiene practices, and personal protective equipment including respirators. In addition, they can help to interpret the results of industrial hygiene survey data.

9. Physical And Chemical Properties

Melting Point: 175-177 degrees C.

Density: 1.187(20°C)

Water solubility: very slightly soluble

Other solubility: readily soluble in dimethyl sulfoxide (183 g/litre), moderately soluble in methanol (18 g/litre), diethyl ether (12 g/litre), chloroform (52 g/litre), and ethyl acetate (28 g/litre),.

PH value: 6-9

Flash point: >200°F

Ignition temperature: not applicable

Vapor Pressure: 0.04 mPa @ 20 C

Partition Coefficient: 2.3404

Adsorption Coefficient: 100

10. Stability And Reactivity

Stability: Stable

Conditions to Avoid: High or excessive temperatures

Incompatibility: Acids or alkalies

Hazardous Decomposition Products: Carbon monoxide, hydrogen cyanide, acetonitrile

Hazardous Polymerization: Will not occur.

11. Toxicological Information

Contact with the skin: cause a skin allergy.

Contact with the eyes: irritate

Acute toxicity:

Oral LD50 (Rat) = 1,075-1,886 mg/kg

Dermal LD50 (Rabbit) = >5,000 mg/kg

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. 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.

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.

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.

Mutagenic effects: The weight of evidence from more than 50 studies indicates that atrazine is not mutagenic.

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. 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. Long-term consumption of high levels of atrazine has caused tremors, changes in organ weights, and damage to the liver and heart.

12. Ecological And Ecotoxicological Information

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.

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.

Effects on other organisms: Atrazine is non-toxic to bees.

13. Disposal Considerations

Spillage disposal: Do not wash away into sewer. Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.

14. Transport Information

UN NO. : 2763

Packing Group : III

UN Hazard Class: 6.1

15. Regulatory Information

Not Applicable

16. Other Information

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are presented in good faith and believed to be correct. This information applies to the product as such. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear. It is the responsibility of persons on receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipients subsequently produce formulations containing this product, it is the recipients' sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.