



# Material Safety Data Sheet

12601 Twinbrook Parkway,  
Rockville, MD 20852 USA

Phone Calls: 301-816-8129  
8 a.m. to 5 p.m. EST Mon. - Fri.

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## ACETAZOLAMIDE

Catalog Number: 1005004

Revision Date:

June 26, 2008

### SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

**Common Name:** Acetazolamide

**Manufacturer:** U. S. Pharmacopeia

**Responsible Party:** Reference Standards Technical Services

**Mailing Address:** 12601 Twinbrook Parkway, Rockville, MD 20852 USA

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**Product Use:** USP Reference Standards and Authentic Substances are used for chemical tests and assays in analytical, clinical, pharmaceutical, and research laboratories.

### SECTION 2 - HAZARD INFORMATION

**Adverse Effects:** Adverse effects may include unusual tiredness or weakness; diarrhea; increased frequency or amount of urination; loss of appetite; metallic taste; nausea or vomiting; numbness, tingling or burning in mouth, anus, or extremities; weight loss; blood in urine; difficult urination; pain in lower back; pain or burning while urinating; sudden decrease in amount of urine; mental depression; dizziness; headache; and drowsiness. Possible allergic reaction to material if inhaled, ingested, or in contact with skin.

**Overdose Effects:** Overdose effects may include destruction of the gastric mucosal barrier, pancreatitis, and metabolic acidosis.

**Acute:** Possible eye, skin, gastrointestinal, and/or respiratory tract irritation.

**Chronic:** Possible hypersensitization.

**Medical Conditions Aggravated by Exposure:** Hypersensitivity to material, chronic noncongestive angle-closure glaucoma, diabetes mellitus, lung obstruction or emphysema, adrenal gland failure, adrenocortical insufficiency, hyperchloremic acidosis, electrolyte imbalance, kidney stones, and liver or kidney disease or function impairment.

**Cross Sensitivity:** Persons sensitive to antibacterial sulfonamides, thiazide diuretics, other sulfonamide-derivative diuretics, or other carbonic anhydrase inhibitors may be sensitive to this material also.

**Target Organs:** Kidneys and blood.

**For additional information on toxicity, see Section 11.**

### SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

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**Common Name:** Acetazolamide

**Formula:** C<sub>4</sub>H<sub>6</sub>N<sub>4</sub>O<sub>3</sub>S<sub>2</sub>

**Synonym:** n/f

**Chemical Name:** Acetamide, N-[5-(aminosulfonyl)-1,3,4-thiadiazol-2-yl]-

**CAS:** 59-66-5

**RTECS Number:** AC8225000

**Chemical Family:** 1,3,4-Thiadiazole derivative (sulfonamide)

**Therapeutic Category:** Carbonic anhydrase inhibitor

**Composition:** Pure Material

## SECTION 4 - FIRST AID MEASURES

**Inhalation:** May cause irritation. Remove to fresh air.

**Eye:** May cause irritation. Flush with copious quantities of water.

**Skin:** May cause irritation. Flush with copious quantities of water.

**Ingestion:** May cause irritation. Flush out mouth with water. This material is rapidly and well absorbed from the gastrointestinal tract. Onset of action is 60 to 90 minutes; duration of action is 8 to 12 hours.

**General First Aid Procedures:** Remove from exposure. Remove contaminated clothing. Persons developing serious hypersensitivity (anaphylactic) reactions must receive immediate medical attention. If person is not breathing, give artificial respiration. If breathing is difficult, give oxygen. Obtain medical attention.

### Note to Physicians

**Overdose Treatment:** Treatment of acetazolamide overdose should be symptomatic and supportive and may include the following:

1. Do NOT induce vomiting, which may exacerbate fluid/electrolyte imbalances.
2. Administer activated charcoal as a slurry. Cathartics may potentiate fluid and electrolyte imbalance and should be avoided.
3. Monitor fluid and electrolyte balance carefully and obtain arterial blood gases in symptomatic patients in case of metabolic acidosis.
4. Treat severe acidosis with IV sodium bicarbonate.
5. Hemodialysis may be helpful, especially in cases of kidney failure. [Poisindex 2008]

## SECTION 5 - FIREFIGHTING MEASURES

**Extinguisher Media:** Water spray, dry chemical, carbon dioxide, or foam as appropriate for surrounding fire and materials.

**Fire and Explosion Hazards:** This material is assumed to be combustible. As with all dry powders, it is advisable to ground mechanical equipment in contact with dry material to dissipate the potential buildup of static electricity.

**Firefighting Procedures:** As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing equipment and protective clothing.

## SECTION 6 - ACCIDENTAL RELEASE MEASURES

**Spill Response:** Wear approved respiratory protection, chemically compatible gloves, and protective clothing. Wipe up spillage or collect spillage using a high-efficiency vacuum cleaner. Avoid breathing dust. Place spillage in appropriately labeled container for disposal. Wash spill site.

## SECTION 7 - HANDLING AND STORAGE

**Handling:** As a general rule, when handling USP Reference Standards, avoid all contact and inhalation of dust, mists, and/or vapors associated with the material. Wash thoroughly after handling.

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**Storage:** Store in tight container as defined in the USP-NF. This material should be handled and stored per label instructions to ensure product integrity.

## SECTION 8 - EXPOSURE CONTROL / PERSONAL PROTECTION

**Engineering Controls:** Engineering controls such as exhaust ventilation are recommended.

**Respiratory Protection:** Use a NIOSH-approved respirator, if it is determined to be necessary by an industrial hygiene survey involving air monitoring. In the event that a respirator is not required, an approved dust mask should be used.

**Gloves:** Chemically compatible

**Eye Protection:** Safety glasses or goggles

**Protective Clothing:** Protect exposed skin.

**Exposure Limits:** n/f

## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Properties as indicated on the MSDS are general and not necessarily specific to the USP Reference Standard Lot provided.

**Appearance and Odor:** White to yellowish-white crystalline powder; odorless.

**Odor Threshold:** n/f

**pH:** 9 - 10 (in a 10% aqueous solution)

**Melting Range:** 258 - 260.5° C (decomposes)

**Boiling Point:** n/f

**Flash Point:** n/f

**Autoignition Temperature:** n/f

**Evaporation Rate:** n/f

**Upper Flammability Limit:** n/f

**Lower Flammability Limit:** n/f

**Vapor Pressure:** n/f

**Vapor Density:** n/f

**Specific Gravity:** n/f

**Solubility in Water:** Very slightly soluble; sparingly soluble in practically boiling water.

**Fat Solubility:** n/f

**Other Solubility:** Readily soluble in 1 N sodium carbonate solution; slightly soluble in alcohol and in acetone; soluble in dilute solutions of alkali hydroxides; insoluble in chloroform, in diethyl ether, in carbon tetrachloride.

**Partition Coefficient: n-octanol/water:** - 0.26

**Percent Volatile:** n/f

**Reactivity in Water:** n/f

**Explosive Properties:** n/f

**Oxidizing Properties:** n/f

**Formula:** C<sub>4</sub>H<sub>6</sub>N<sub>4</sub>O<sub>3</sub>S<sub>2</sub>

**Molecular Weight:** 222.25

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## SECTION 10 - STABILITY AND REACTIVITY

**Conditions to Avoid:** n/f

**Incompatibilities:** Strong oxidizing agents.

**Decomposition Products:** When heated to decomposition, material emits very toxic fumes of NO<sub>x</sub> and SO<sub>x</sub>. Emits toxic fumes under fire conditions.

**Stable?** Yes      **Hazardous Polymerization?** No

## SECTION 11 - TOXICOLOGICAL PROPERTIES

**Oral Rat:** LD50: >1000 mg/kg; 15 to 30 grams/kg

**Oral Mouse:** LD50: 4300 mg/kg; >3000 mg/kg

**Other Toxicity Data:** n/f

**Irritancy Data:** n/f

**Corrosivity:** n/f

**Sensitization Data:** n/f

**Listed as a Carcinogen by:**      **NTP:** No      **IARC:** No      **OSHA:** No

**Other Carcinogenicity Data:** No

**Mutagenicity Data:** In a bacterial mutagenicity assay, acetazolamide was not mutagenic when evaluated with and without metabolic activation.

**Reproductive and Developmental Effects:** There are isolated reports of adverse effects in children of women treated with acetazolamide during pregnancy; however, retrospective studies have not shown an increased risk of birth defects in humans.  
Acetazolamide, administered orally or paranterally at high doses, has been shown to cause defects of the limbs in mice, rats, hamsters, and rabbits.

## SECTION 12 - ECOLOGICAL INFORMATION

**Ecological Information:** n/f

## SECTION 13 - DISPOSAL CONSIDERATIONS

**Disposal:** Dispose of waste in accordance with all applicable Federal, State, and local laws.

## SECTION 14 - TRANSPORT INFORMATION

**Shipping Name:** n/f

**Class:** n/f

**UN Number:** n/f

**Packing Group:** n/f

**Additional Transport Information:** n/f

## SECTION 15 - REGULATORY INFORMATION

**U.S. Regulatory Information:** California Proposition 65: Developmental Toxicity

**International Regulatory Information:** EINECS#: 200-440-5

## SECTION 16 - OTHER INFORMATION

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**Revision:** 26-Jun-08**Previous Revision Date:** 01-Jun-04