SAFETY DATA SHEET

1. Identification

Product identifier: Acetazolamide

Other means of identification:
- Catalog number: 1005004
- Chemical name: Acetamide, N-[5-(aminosulfonyl)-1,3,4-thiadiazol-2-yl]-

Recommended use: Specified quality tests and assay use only.

Recommended restrictions: Not for use as a drug. Not for administration to humans or animals.

Manufacturer/Importer/Supplier/Distributor information

Company name: U. S. Pharmacopeia
Address: 12601 Twinbrook Parkway
          Rockville
          MD
          20852-1790
          US

Telephone: RS Technical Services 301-816-8129
Website: www.usp.org
E-mail: RSTECH@usp.org

Emergency phone number:
- CHEMTREC within US & Canada 1-800-424-9300
- CHEMTREC outside US & Canada +1 703-527-3887

2. Hazard(s) identification

Physical hazards: Not classified.

Health hazards:
- Skin corrosion/irritation: Category 2
- Serious eye damage/eye irritation: Category 2A

OSHA hazard(s): Not classified.

Label elements

Signal word: Warning
Hazard statement: Causes skin irritation. Causes serious eye irritation.

Precautionary statement

Prevention: Wash thoroughly after handling. Wear protective gloves. Wear eye/face protection.

Response: If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage: Not available.
Disposal: Not available.

Hazard(s) not otherwise classified (HNOC): Not classified.

3. Composition/information on ingredients

Substance: Acetazolamide

Hazardous components:

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetazolamide</td>
<td></td>
<td>59-66-5</td>
<td>100</td>
</tr>
</tbody>
</table>

4. First-aid measures

Inhalation: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Skin contact: Rinse skin with water/shower. Get medical attention if irritation develops and persists.

Eye contact: Rinse with water. Get medical attention if irritation develops and persists.

Ingestion: Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.

Most important symptoms/effects, acute and delayed: Irritant effects.

Indication of immediate medical attention and special treatment needed: Treatment of overdose should be symptomatic and supportive. Administer activated charcoal with sorbitol to decrease absorption. For acidosis, administer sodium bicarbonate. Monitor fluid and electrolyte status. Correct fluid and electrolyte disturbances. Hemodialysis may be of benefit. (Poisindex)

General information: Remove from exposure. Remove contaminated clothing. For treatment advice, seek guidance from an occupational health physician or other licensed health-care provider familiar with workplace chemical exposures. In the United States, the national poison control center phone number is 1-800-222-1222. If person is not breathing, give artificial respiration. If breathing is difficult, give oxygen if available. Persons developing serious hypersensitivity (anaphylactic) reactions must receive immediate medical attention.

5. Fire-fighting measures

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials. Water. Foam. Dry chemical or CO2.

Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: No unusual fire or explosion hazards noted.

Special protective equipment and precautions for firefighters: Wear suitable protective equipment.

Fire-fighting equipment/instructions: Use water spray to cool unopened containers. As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing equipment and protective clothing.

Specific methods: Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Keep unnecessary personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Avoid inhalation of dust from the spilled material. Wear appropriate personal protective equipment.

Methods and materials for containment and cleaning up: Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid the generation of dusts during clean-up. For waste disposal, see section 13 of the SDS. Clean surface thoroughly to remove residual contamination.

7. Handling and storage

Precautions for safe 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. Clean equipment and work surfaces with suitable detergent or solvent after use. After removing gloves, wash hands and other exposed skin thoroughly.

Conditions for safe storage, including any incompatibilities: Store in tight container as defined in the USP-NF. This material should be handled and stored per label instructions to ensure product integrity.

8. Exposure controls/personal protection

Biological limit values: No biological exposure limits noted for the ingredient(s).

Exposure guidelines: No exposure standards allocated.

Appropriate engineering controls: Airborne exposure should be controlled primarily by engineering controls such as general dilution ventilation, local exhaust ventilation, or process enclosure. Local exhaust ventilation is generally preferred to general exhaust because it can control the contaminant at its source, preventing dispersion into the work area. An industrial hygiene survey involving air monitoring may be used to determine the effectiveness of engineering controls. Effectiveness of engineering controls intended for use with highly potent materials should be assessed by use of nontoxic surrogate materials. Local exhaust ventilation such as a laboratory fume hood or other vented enclosure is recommended, particularly for grinding, crushing, weighing, or other dust-generating procedures.

Individual protection measures, such as personal protective equipment

Eye/face protection: Safety glasses with sideshields are recommended. Face shields or goggles may be required if splash potential exists or if corrosive materials are present. Approved eye protection (e.g., bearing the ANSI Z87 or CSA stamp) is preferred. Maintain eyewash facilities in the work area.
Skin protection

Hand protection
Chemically compatible gloves. For handling solutions, ensure that the glove material is protective against the solvent being used. Use handling practices that minimize direct hand contact. Employees who are sensitive to natural rubber (latex) should use nitrile or other synthetic nonlatex gloves. Use of powdered latex gloves should be avoided due to the risk of latex allergy.

Other
For handling of laboratory scale quantities, a cloth lab coat is recommended. Where significant quantities are handled, work clothing may be necessary to prevent take-home contamination.

Respiratory protection
Where respirators are deemed necessary to reduce or control occupational exposures, use NIOSH-approved respiratory protection and have an effective respirator program in place (applicable U.S. regulation OSHA 29 CFR 1910.134).

Thermal hazards
Not available.

General hygiene considerations
Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance
White to slightly yellow crystalline powder.

Physical state
Solid.

Form
Powder.

Odor
Odorless.

Odor threshold
Not available.

Melting point/freezing point
496.4 - 500.9 °F (258 - 260.5 °C) (decomposes)

Initial boiling point and boiling range
Not available.

Flash point
Not available.

Evaporation rate
Not available.

Flammability (solid, gas)
Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)
Not available.

Flammability limit - upper (%)
Not available.

Explosive limit - lower (%)
Not available.

Explosive limit - upper (%)
Not available.

Vapor density
Not available.

Relative density
Not available.

Solubility in water
Very slightly soluble; sparingly soluble in practically boiling water.

Partition coefficient (n-octanol/water)
-0.26

Auto-ignition temperature
Not available.

Decomposition temperature
Not available.

Viscosity
Not available.

Other information

Chemical family
Sulfonamide.

Molecular formula
C4H6N4O3S2

Molecular weight
222.25

pH in aqueous solution
9 - 10 (10% solution)

Solubility (other)
Readily soluble in 1 N sodium carbonate solution; slightly soluble in ethanol and in acetone; soluble in dilute solutions of alkali hydroxides; insoluble in chloroform, in diethyl ether, and in carbon tetrachloride.

10. Stability and reactivity

Reactivity
No reactivity hazards known.

Chemical stability
Material is stable under normal conditions.

Possibility of hazardous reactions
No dangerous reaction known under conditions of normal use.

Conditions to avoid
None known.

Incompatible materials
11. Toxicological information

Information on likely routes of exposure

**Ingestion**
Based on available data, the classification criteria are not met.

**Inhalation**
Due to lack of data the classification is not possible.

**Skin contact**
Causes skin irritation.

**Eye contact**
Causes serious eye irritation.

**Symptoms related to the physical, chemical, and toxicological characteristics**

**Delayed and immediate effects of exposure**

**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.

**Medical conditions aggravated by exposure**

**Acute toxicity**

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetazolamide (CAS 59-66-5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Mouse</td>
<td>4300 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Rat</td>
<td>15 - 30 g/kg</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td></td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td></td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>Respiratory sensitization</td>
<td></td>
<td>Due to lack of data the classification is not possible.</td>
</tr>
<tr>
<td>Skin sensitization</td>
<td></td>
<td>Due to lack of data the classification is not possible.</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td></td>
<td>Due to lack of data the classification is not possible. Data from germ cell mutagenicity tests were not found.</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td></td>
<td>Result: Negative (with or without activation).</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td></td>
<td>Due to lack of data the classification is not possible. This material is not considered to be a carcinogen by IARC, NTP, or OSHA.</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td></td>
<td>Due to lack of data the classification is not possible. Reproductivity studies in animals have yielded mixed results.</td>
</tr>
<tr>
<td>Reproductivity</td>
<td></td>
<td>Result: Teratogenic (skeletal defects). Species: Rabbit Reproductivity study result.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Result: Teratogenic (forelimb defects). Species: Mouse Reproductivity study result.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Result: Teratogenic (forelimb defects). Species: Rat Reproductivity study result.</td>
</tr>
<tr>
<td>Specific target organ toxicity</td>
<td></td>
<td>Due to lack of data the classification is not possible.</td>
</tr>
<tr>
<td>- single exposure</td>
<td></td>
<td>Due to lack of data the classification is not possible.</td>
</tr>
<tr>
<td>Specific target organ toxicity</td>
<td></td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>- repeated exposure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. Ecological information

**Ecotoxicity**
No ecotoxicity data noted for the ingredient(s).

**Persistence and degradability**
No data is available on the degradability of this product.

**Bioaccumulative potential**
Not available.
13. Disposal considerations

Disposal instructions: Dispose in accordance with all applicable regulations. Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

Local disposal regulations: Not available.

Hazardous waste code: Not available.

Waste from residues / unused products: Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT: Not regulated as a hazardous material by DOT.

IATA: Not regulated as a dangerous good.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: No information available.

15. Regulatory information

US federal regulations: CERCLA/SARA Hazardous Substances - Not applicable. All components are on the U.S. EPA TSCA Inventory List.

Superfund Amendments and Reauthorization Act of 1986 (SARA)


SARA 302 Extremely hazardous substance: No.

SARA 311/312 Hazardous chemical: No.

Other federal regulations


Food and Drug Administration (FDA): Not regulated.

US state regulations: WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>No</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>No</td>
</tr>
</tbody>
</table>
Country(s) or region  | Inventory name                          | On inventory (yes/no)*
---------------------|----------------------------------------|---------------------
United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other information, including date of preparation or last revision

Issue date: 06-26-2008
Revision date: 08-07-2014
Version #: 03

Further information: Not available.

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Revision Information

This document has undergone significant changes and should be reviewed in its entirety.