

1. Identification

Product identifier	Hydrochlorothiazide
Other means of identification	
Catalog number	1314009
CAS number	58-93-5
Chemical name	2H-1,2,4-Benzothiadiazine-7-sulfonamide, 6-chloro-3,4-dihydro-, 1,1-dioxide
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

Manufacturer

Company name	U. S. Pharmacopeia
Address	12601 Twinbrook Parkway Rockville MD 20852-1790 United States
Telephone	RS Technical Services 301-816-8129
Website	www.usp.org
E-mail	RSTECH@usp.org
Emergency phone number	CHEMTRAC within US & 1-800-424-9300 Canada CHEMTRAC outside US & +1 703-527-3887 Canada

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Carcinogenicity
Environmental hazards	Not classified.
OSHA defined hazards	Not classified.

Label elements



Signal word	Warning
Hazard statement	Suspected of causing cancer.
Precautionary statement	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If exposed or concerned: Get medical advice/attention.
Storage	Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	Pharmacologically active material.

3. Composition/information on ingredients

Substance

Chemical name	Common name and synonyms	CAS number	%
Hydrochlorothiazide		58-93-5	100
4. First-aid measures			
Inhalation	Move to fresh air. 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	Pharmacologically active material. Occupational exposure may cause physiological effects.		
Indication of immediate medical attention and special treatment needed	Treat symptomatically. Treatment of thiazide diuretic overdose may include the following: Administer activated charcoal as a slurry. Cathartics may potentiate fluid and electrolyte disturbances and should be AVOIDED. For dysrhythmias, first correct electrolyte imbalance. If dysrhythmias persist despite correction, treat with standard advanced cardiac life support protocols. Monitor fluid and electrolyte balance carefully.		
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	Water. Foam. Dry chemical or CO ₂ . Use fire-extinguishing media appropriate for surrounding materials.		
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.		
General fire hazards	No unusual fire or explosion hazards noted.		
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. Avoid inhalation of dust from the spilled material. Ensure adequate ventilation. Wear appropriate protective equipment and clothing during clean-up. For personal protection, see section 8 of the SDS.		
Methods and materials for containment and cleaning up	For waste disposal, see section 13 of the SDS. Avoid the generation of dusts during clean-up. Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean surface thoroughly to remove residual contamination.		
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.		
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. Select and use containment devices and personal protective equipment based on a risk assessment of material potency and exposure potential.		
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			
Occupational exposure limits	The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.		

Exposure limit values

Industrial Use Material	Type	Value
Hydrochlorothiazide (CAS 58-93-5)	TWA	500 micrograms/m3
Biological limit values	No biological exposure limits noted for the ingredient(s).	
Appropriate engineering controls	For laboratory operations, use local exhaust ventilation or a ventilated enclosure for high energy operations such as particle sizing. Control exposures to below the occupational exposure level (if available). Select and use containment devices and personal protective equipment based on a risk assessment of exposure potential. Cover all containers for solutions and slurries while being transferred.	
Individual protection measures, such as personal protective equipment		
Eye/face protection	Wear safety glasses with side shields, chemical splash goggles, or full face shield, if necessary. Base the choice of protection on the job activity and potential for contact with eyes or face. An emergency eye wash station should be available.	
Skin protection		
Hand protection	Wear nitrile or other impervious gloves if skin contact is possible. When the material is dissolved or suspended in an organic solvent, wear gloves that provide protection against the solvent.	
Other	Train employees in proper gowning and degowning practices. Wear lab coat. Base the choice of skin protection on the job activity, potential for skin contact and solvents and reagents in use. Do not wear protective garments in common areas (e.g., cafeterias) or out-of-doors.	
Respiratory protection	Respirators are generally not required for laboratory operations. Use a tight-fitting full-face respirator with HEPA filters for spill cleanup. Choose respiratory protection appropriate to the task and the level of existing engineering controls.	
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.	
General hygiene considerations	Handling practices in this SDS are recommendations for laboratory use of reference standards. Procedures for any other uses or quantities should be determined after an appropriate assessment.	

9. Physical and chemical properties**Appearance** Appearance descriptions are general information and not specific to any USP lot.**Physical state** Solid.**Form** Powder.**Color** White.**Odor** Odorless.**Odor threshold** Not available.**pH** Not available.**Melting point/freezing point** 523.4 - 527 °F (273 - 275 °C)**Initial boiling point and boiling range** Not available.**Flash point** Not available.**Evaporation rate** Not available.**Flammability (solid, gas)** Not available.**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 pressure** < 0.0000001 kPa at 25 °C**Vapor density** Not available.**Relative density** Not available.**Solubility(ies)****Solubility (water)** Slightly soluble.**Solubility (other)** Chloroform: Insoluble.

Dimethylformamide:	Freely soluble.
Ether:	Insoluble.
Methanol:	Sparingly soluble.
Sodium hydroxide solution:	Freely soluble.
Partition coefficient (n-octanol/water)	-0.07
Auto-ignition temperature	> 932 °F (> 500 °C)
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Chemical family	Benzothiadiazine.
Molecular formula	C7H8CN3O4S2
Molecular weight	297.74

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	None known.
Hazardous decomposition products	NOx. SOx. Cl-. Irritating and/or toxic fumes or gases. Emits toxic fumes under fire conditions.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Knowledge about health hazard is incomplete.
Skin contact	Knowledge about health hazard is incomplete.
Eye contact	Knowledge about health hazard is incomplete.
Ingestion	Knowledge about health hazard is incomplete.
Symptoms related to the physical, chemical, and toxicological characteristics	Thiazide diuretics: Central nervous system depression. Gastrointestinal disturbances. Dehydration. Increased urination. Fever. Headache. Sensitivity of skin to sunlight. Skin rash. Muscle cramps or pain. Mood or mental changes. Convulsions. Decreased sexual ability.

Information on toxicological effects

Acute toxicity

Product	Species	Test Results
Hydrochlorothiazide (CAS 58-93-5)		
Acute		
Oral		
LD50	Mouse	1175 mg/kg
	Rat	2750 mg/kg
Skin corrosion/irritation		
Serious eye damage/eye irritation		
Respiratory or skin sensitization		
Respiratory sensitization		
Skin sensitization		
Germ cell mutagenicity		
Mutagenicity		
Mouse lymphoma assay		
Result: Positive.		
Mutagenicity, Chromosome aberration test in Chinese hamster cells		
Result: Negative.		

Mutagenicity

Mutagenicity, Mitotic recombination and nondisjunction tests in *Aspergillus*
Result: Positive.
Mutagenicity, Sex-linked lethal mutations in *Drosophila*
Result: Negative.
Mutagenicity, Sister chromatid exchange in Chinese hamster cells
Result: Positive.

Carcinogenicity

Suspected of causing cancer.

2000 ppm Carcinogenicity

Result: No evidence of carcinogenicity.

Species: Rat

5000 ppm Carcinogenicity

Result: Increased incidence of hepatocellular neoplasms in males. No evidence of carcinogenicity in females.

Species: Mouse

IARC Monographs. Overall Evaluation of Carcinogenicity

Hydrochlorothiazide (CAS 58-93-5)

2B Possibly carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity

Knowledge about health hazard is incomplete. Thiazide diuretics decrease plasma volume but have not shown negative effects on fetal growth. Thiazide diuretics cross the placenta and distribute into breast milk. Suppression of lactation has been reported with large doses in therapeutic use.

Reproductivity

1000 mg/kg Reproductivity

Result: No evidence of birth defects.

Species: Rat

250 mg/kg Reproductivity

Result: No embryo or fetotoxicity.

Species: Rat

3000 mg/kg Reproductivity

Result: No evidence of birth defects.

Species: Mouse

Specific target organ toxicity - single exposure

Knowledge about health hazard is incomplete.

Specific target organ toxicity - repeated exposure

Knowledge about health hazard is incomplete.

Aspiration hazard

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

Further information

Pharmacologically active material. Occupational exposure may cause physiological effects.

12. Ecological information**Ecotoxicity**

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability

No data is available on the degradability of this product.

Bioaccumulative potential**Octanol/water partition coefficient log Kow**

-0.07

Mobility in soil

No data available.

Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

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

Dispose in accordance with all applicable regulations.

Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	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 dangerous goods.
IATA	Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.
General information	It is the shipper's responsibility to determine the correct transport classification at the time of shipment.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
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TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - No Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
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SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)	Not regulated.
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US state regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
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).
 A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

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

Issue date 08-24-2006

Revision date 09-21-2018

Version # 04

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