



Material Safety Data Sheet

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Rockville, MD 20852 USA

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

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ASPIRIN

Catalog Number: 1044006

Revision Date: August 13, 2009

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Common Name: Aspirin

Manufacturer: U. S. Pharmacopeia

Responsible Party: Reference Standards Technical Services

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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

EMERGENCY OVERVIEW : Toxic. Allergen. Irritant. Reproductive Hazard.

Adverse Effects: Adverse effects may include heartburn, nausea, and vomiting. Inhalation may cause cough and sore throat. Allergic reactions may include difficult breathing, sneezing, eye and nose irritation, and skin rash. Possible allergic reaction to material if inhaled, ingested, or in contact with skin.

Overdose Effects: Overdose of salicylates may cause salicylism characterized by nausea, vomiting, stomach discomfort, diarrhea, ringing in ears or hearing loss, headache, dizziness, drowsiness, vision problems, flushing, sweating, thirst, agitation, confusion, and fast or deep breathing. Severe overdose may cause delirium, mental disturbances, lethargy, fever, dehydration, seizures, stupor, coma, respiratory failure, cardiovascular collapse, and death.

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

Chronic: Possible hypersensitization, salicylism (see Overdose Effects), kidney or liver impairment, gastrointestinal bleeding, anemia, and death.

Medical Conditions Aggravated by Exposure: Hypersensitivity to material; nasal polyps, asthma, rhinitis syndrome; anemia; hemophilia, vitamin K deficiency, or other bleeding problems; peptic ulcers; impaired liver or kidney function; diabetes mellitus; circulatory disorders; gout; G6PD deficiency; uncontrolled hypertension; angina; and active alcoholism.

Cross Sensitivity: Persons sensitive to other salicylates, other nonsteroidal anti-inflammatory agents, or to tartrazine dye may be sensitive to this material also.

Target Organs: n/f

For additional information on toxicity, see Section 11.

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SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Common Name: Aspirin

Formula: C₉H₈O₄

Synonym: Acetylsalicylic acid; salicylic acid acetate

Chemical Name: Benzoic acid, 2-(acetyloxy)-

CAS: 50-78-2

RTECS Number: VO0700000

Chemical Family: Aromatic carboxylic acid

Therapeutic Category: Analgesic; antipyretic; antirheumatic

Composition: Pure material

SECTION 4 - FIRST AID MEASURES

Inhalation: Causes irritation and is a known respiratory allergen. Remove to fresh air.

Eye: Causes severe irritation. Flush with copious quantities of tepid water for at least 15 minutes.

Skin: Causes irritation. This material is absorbed through the skin and excessive amounts can cause systemic toxicity. Flush with copious quantities of water.

Ingestion: Causes irritation and toxicity. Flush out mouth with water. This material is rapidly and completely absorbed from the gastrointestinal tract.

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 salicylate overdose should be symptomatic and supportive and may include the following:

1. Administer activated charcoal as a slurry. Multiple doses may be beneficial.
2. Perform gastric lavage, unless contraindicated, soon after ingestion. Protect airway and control seizures first.
3. Correct dehydration with 0.9% NaCl until good urine flow is obtained. Do not over hydrate. Add potassium to subsequent fluid. Monitor pulmonary status, urine output, urine pH, and serum potassium.
4. Alkalinize urine with sodium bicarbonate in D5W to achieve a urine pH greater than 7.5. Additional potassium chloride may be required.
5. For acidosis, administer sodium bicarbonate intravenously. Correct pH to 7.4. Monitor ABGs
6. Treat hyperthermia with external cooling.
7. Early treatment with hemodialysis may be useful if blood salicylate levels are high or if symptoms of salicylism persist. Hemodialysis rapidly increases salicylate clearance and corrects acid-base, fluid, and electrolyte disturbances.
8. For seizures, administer a benzodiazepine intravenously. If seizures recur, consider phenobarbital or propofol. Monitor for hypotension, dysrhythmias, respiratory depression, and need for endotracheal intubation. Evaluate for hypoglycemia, electrolyte imbalances, and hypoxia.
9. For active bleeding or coagulation disorders, give blood or blood platelets if needed. Vitamin K may improve prothrombin time. [Poisindex 2009]

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 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.

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SECTION 6 - ACCIDENTAL RELEASE MEASURES

Spill Response: Wear approved respiratory protection, chemically compatible gloves, and protective clothing. Remove sources of ignition. 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 first with 60 to 70% ethanol, then with soap and water.

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.

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: ACGIH : 5 mg/m³
NIOSH : 5 mg/m³

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: Colorless or white crystals or crystalline powder; odorless or faint odor.

Odor Threshold: n/f

pH: n/f

Melting Range: 135 - 144° C

Boiling Point: n/f

Flash Point: 250° C

Autoignition Temperature: 490° C

Evaporation Rate: n/f

Upper Flammability Limit: n/f

Lower Flammability Limit: n/f

Vapor Pressure: 2.52 x 10⁻⁵ mm Hg

Vapor Density: n/f

Specific Gravity: 1.40

Solubility in Water: Slightly soluble

Fat Solubility: Highly lipid soluble

Other Solubility: Freely soluble in alcohol; soluble in chloroform, in ether, and in benzene.

Partition Coefficient: n-octanol/water: 1.19

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Percent Volatile: n/f

Reactivity in Water: n/f

Explosive Properties: n/f

Oxidizing Properties: n/f

Formula: C₉H₈O₄

Molecular Weight: 180.16

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SECTION 10 - STABILITY AND REACTIVITY

Conditions to Avoid: Ignition sources

Incompatibilities: Strong oxidizers, strong acids, strong bases, and solutions of alkali hydroxides or carbonates.

Decomposition Products: When heated to decomposition, material emits acrid smoke and fumes. Emits toxic fumes under fire conditions.

Stable? Yes **Hazardous Polymerization?** No

SECTION 11 - TOXICOLOGICAL PROPERTIES

Oral Rat: LD50 : 200 mg/kg; 1500 mg/kg

Oral Mouse: LD50 : 250 mg/kg; 1100 mg/kg

Other Toxicity Data: Oral Rabbit LD50 : 1010 mg/kg
Oral Dog LD50 : 700 mg/kg
Oral Guinea pig LD50 : 1075 mg/kg

Irritancy Data: Skin/Rabbit : slight
Skin/Human : irritating
Eye/Rabbit : slight
Eye/Human : irritating

Corrosivity: n/f

Sensitization Data: n/f

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

Other Carcinogenicity Data: Aspirin was not carcinogenic in rats when administered at 0.5% in feed for 68 weeks. An 18-month study in rats given oral doses of 200 mg/kg showed no gastrointestinal tumors.

Mutagenicity Data: Aspirin was not mutagenic in vitro in the Ames Salmonella assay with and without activation, the E. coli reverse mutation assay, and in the rat kidney fibroblast micronucleus assay. It induced chromosomal aberrations in cultured human fibroblasts and tested positive in a mammalian cell gene mutation assay in Chinese hamster lung cells. It was negative in vivo in the drosophila SLRL test.

Reproductive and Developmental Effects: Salicylates are associated with increased prenatal and newborn mortality, anemia, prolonged pregnancy, maternal bleeding complications, and prolonged or complicated deliveries when used therapeutically in the third trimester of pregnancy. It has been suggested that maternal ingestion of salicylates may cause premature closure of the fetal ductus arteriosus and lead to pulmonary hypertension in some infants. Studies in humans concerning therapeutic use of aspirin during pregnancy have had mixed results. Some have shown evidence of an association between birth defects and aspirin use during pregnancy, but others have not. Female rats given aspirin in oral doses of 600 mg/kg/day had no viable litter, and doses of 30 mg/kg/day in males inhibited spermiogenesis. A study in rats given doses of 300 mg/kg during gestation showed no increase in the incidence of birth defects, but doses of 400 and 500 mg/kg did cause an increase. In cats gavaged with 50 mg/kg doses, there was an increase in non-specific malformations.

SECTION 12 - ECOLOGICAL INFORMATION

Ecological Information: Easily biodegradable

SECTION 13 - DISPOSAL CONSIDERATIONS

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

SECTION 14 -TRANSPORT INFORMATION

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Shipping Name: Toxic solid, organic, n.o.s. (Aspirin)

Class: 6.1

UN Number: UN2811

Packing Group: III

Additional Transport Information: n/f

SECTION 15 - REGULATORY INFORMATION

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

International Regulatory Information: EINECS # 200-064-1
Hazard code : T
Risk phrases : R25, R36/37/38, R61
Canada : WHMIS classification D2A

SECTION 16 - OTHER INFORMATION

Revision: 13-Aug-09

Previous Revision Date: 13-Jul-09