



# 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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## PREDNISONE

Catalog Number: 1559006

Revision Date:

February 22, 2006

### SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

**Common Name:** Prednisone

**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:** Therapeutic use of corticosteroids may cause adverse effects due to the mineralocorticoid or glucocorticoid actions or from inhibition of the hypothalamic-pituitary-adrenal axis. The incidence of adverse effects increases with dose and duration of exposure; effects are rare with administration of less than three weeks. Symptoms from chronic exposure may include acne; pain in hips, shoulders, back, ribs, arms, or legs; filling or rounding out of face; increased hair growth; menstrual irregularities; muscle weakness, cramps, or pain; reddish-purple lines on skin; bruising; weight gain or loss; change in appetite; swelling of feet or lower legs; changes in vision; eye pain; irregular heartbeat; unusual tiredness or weakness; headache; insomnia; abdominal or stomach pain; nausea; vomiting; bloody or black, tarry stools; mood or mental changes; and increased susceptibility to infection. Possible allergic reaction to material if inhaled, ingested or in contact with skin.

**Overdose Effects:** Overexposure may lead to effects listed above.

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

**Chronic:** Possible hypersensitization, adrenal suppression, immune system depression, and hypercorticism or Cushing's syndrome.

**Medical Conditions Aggravated by Exposure:** Hypersensitivity to material and active infection.

**Cross Sensitivity:** Persons sensitive to one corticosteroid may be sensitive to this material as well.

**Target Organs:** Endocrine system

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

### SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

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**Common Name:** Prednisone

**Formula:** C<sub>21</sub>H<sub>26</sub>O<sub>5</sub>

**Synonym:** 1-Dehydrocortisone

**Chemical Name:** Pregna-1,4-diene-3,11,20-trione, 17,21-dihydroxy-

**CAS:** 53-03-2

**RTECS Number:** TU4154100

**Chemical Family:** Corticosteroid

**Therapeutic Category:** Glucocorticoid

**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. Material may be absorbed through the skin.

**Ingestion:** May cause irritation and bitter aftertaste. Flush out mouth with water. This material is readily 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 overdose should be symptomatic and supportive. For current information about the treatment of overdose, consult a certified Regional Poison Control Center by calling the number listed in your local telephone directory.

## 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 labelled 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.

**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.

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**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:** Industry: TWA 5 micrograms/m<sup>3</sup>; STEL 40 micrograms/m<sup>3</sup>

<b>SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES</b>
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Properties as indicated on the MSDS are general and not necessarily specific to the USP Reference Standard Lot provided.

**Appearance and Odor:** White or nearly white crystalline powder; odorless.

**Odor Threshold:** n/f

**pH:** n/f

**Melting Range:** 230 - 235° 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

**Fat Solubility:** n/f

**Other Solubility:** Slightly soluble in alcohol, in chloroform, in dioxane, and in methanol

**Partition Coefficient: n-octanol/water:** 1.46

**Percent Volatile:** n/f

**Reactivity in Water:** n/f

**Explosive Properties:** n/f

**Oxidizing Properties:** n/f

**Formula:** C<sub>21</sub>H<sub>26</sub>O<sub>5</sub>

**Molecular Weight:** 376.44

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## SECTION 10 - STABILITY AND REACTIVITY

**Conditions to Avoid:** n/f

**Incompatibilities:** Oxidizing agents

**Decomposition Products:** When heated to decomposition material emits toxic fumes. Emits toxic fumes under fire conditions.

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

## SECTION 11 - TOXICOLOGICAL PROPERTIES

**Oral Rat:** LD50: n/f

**Oral Mouse:** LD50: n/f

**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:** This material is not classifiable as to its carcinogenicity in humans.  
NCI Carcinogenesis Study: Mouse (ipr): No evidence; Rat (ipr): Equivocal evidence.

**Mutagenicity Data:** Prednisone was not mutagenic to bacteria, and did not induce chromosome aberrations in bone marrow cells of rats treated in vivo.

**Reproductive and Developmental Effects:** There is evidence that therapeutic doses of corticosteroids may increase the risk of placental insufficiency, decreased birth weight, or stillbirth. However, birth defects in humans have not been confirmed. Studies in animals have shown that prednisone increases the incidence of abnormal fetal development, cleft palate, and miscarriage.

## 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:** n/f

**International Regulatory Information:** EINECS # 200-160-3  
Hazard Code: Xn  
Risk Phrase: R68  
Safet Phrases: S36, S22

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**SECTION 16 - OTHER INFORMATION**

**Revision:** 22-Feb-06

**Previous Revision Date:** 28-Mar-03