SAFETY DATA SHEET

1. Identification

Product identifier Cocaine Hydrochloride

Other means of identification

Catalog number 1143008

Chemical name 8-Azabicyclo[3.2.1]octane-2-carboxylic acid, 3-(benzoyloxy)-8-methyl-, methyl ester, hydrochloride, [1R-(exo,exo)]-

Synonym(s) Cocaine muriate

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 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

Acute toxicity, oral Category 3

Serious eye damage/eye irritation Category 2B

Reproductive toxicity Category 1B

Specific target organ toxicity, single exposure Category 3 narcotic effects

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Toxic if swallowed. Causes eye irritation. May cause drowsiness or dizziness. May damage fertility or the unborn child.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

Response If swallowed: Immediately call a poison center/doctor. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If exposed or concerned: Get medical advice/attention. Call a poison center/doctor if you feel unwell. Rinse mouth. If eye irritation persists: Get medical advice/attention.

Storage Store locked up. Store in a well-ventilated place. Keep container tightly closed.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) Not classified.
3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance</th>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cocaine muriate</td>
<td>Cocaine Hydrochloride</td>
<td></td>
<td>53-21-4</td>
<td>100</td>
</tr>
</tbody>
</table>

4. First-aid measures

**Inhalation**
Move to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Call a POISON CENTER or doctor/physician if you feel unwell.

**Skin contact**
Before washing use a dry brush to remove dust from skin. Remove and isolate contaminated clothing and shoes. Wash clothing separately before reuse. Immediately flush skin with plenty of water. Get medical attention if irritation develops or persists.

**Eye contact**
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.

**Ingestion**
Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

**Most important symptoms/effects, acute and delayed**
Irritation of eyes and mucous membranes. Central nervous system effects.

**Indication of immediate medical attention and special treatment needed**
Treatment of overdose should be symptomatic and supportive and may include the following: 1. Monitor vital signs and core body temperature continuously. 2. Secure and maintaining a patent airway, administer 100% oxygen, and institute assisted or controlled respiration as required. In some patients, endotracheal intubation may be necessary. 3. Establish intravenous lines using an isotonic or hypotonic intravenous solution; hypertonic or hyperosmolar solutions should be avoided. All medications must be administered intravenously because cocaine-induced vasostenosis may prevent absorption following intramuscular administration. 4. Minimize all forms of sensory stimulation since these hyperstimulated patients may be agitated and/or paranoid and may become aggressive. 5. For cardiac arrhythmias - Administer propranolol or other beta-adrenergic blocking agents to treat tachycardia or other cardiac arrhythmias. However, pure beta-adrenergic blocking agents do not reduce cocaine-induced hypertension and may actually increase the risk of hypertension, bradycardia, and possibly heart block. Labetalol has been recommended instead. Administration of a pure alpha-adrenergic blocking agent may also be required. Lidocaine hydrochloride or other antiarrhythmics may also be administered. In addition, cardiac massage and/or electrical defibrillation may be required for ventricular fibrillation. 6. For cardiovascular depression - Place the patient in a 30-degree head down (Trendelenburg) position to increase venous return to the heart. Blood pressure should be maintained with intravenous fluids; administration of vasopressors is dangerous. For severe cardiovascular depression, cardiopulmonary resuscitation may be required, but inotropic agents should be given with great caution. 7. For convulsions - If convulsions do not respond to respiratory support, administration of a benzodiazepine such as diazepam or an ultrashort-acting barbiturate such as thiopental or thiamyl.

**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 spray, dry chemical, carbon dioxide, or foam as appropriate for surrounding fire and 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**
As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing equipment and protective clothing.

**Specific methods**
Cool containers exposed to flames with water until well after the fire is out.
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. 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. Wash spill site.

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. Use of a designated area is recommended for handling of potent materials.

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).

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).

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance

Colorless crystals or white, crystalline powder.

Physical state

Solid.

Form

Powder.

Odor

Odorless.

Odor threshold

Not available.

pH

Neutral (1% solution).

Melting point/freezing point

Not available.

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 pressure < 0.0000001 kPa at 25 °C
Vapor density Not available.
Relative density Not available.
Solubility in water Very soluble.
Auto-ignition temperature Not available.
Decomposition temperature Not available.
Viscosity Not available.
Other information
 Chemical family Tropane derivative.
 Molecular formula C17H21NO4 . HCl
 Molecular weight 339.81
 Solubility (other) Freely soluble in alcohol; soluble in chloroform and in glycerin; insoluble in ether.

10. Stability and reactivity
Reactivity None known.
Chemical stability Stable at normal conditions.
Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.
Conditions to avoid None known.
Incompatible materials Calomel, soluble silver salts, iodides, tannins, alkaloid precipitants, mercuric oxide, and silver nitrate.
Hazardous decomposition products NOx. HCl. Irritating and/or toxic fumes or gases. Emits toxic fumes under fire conditions.

11. Toxicological information
Information on likely routes of exposure
 Ingestion Toxic if swallowed.
 Inhilation Due to lack of data the classification is not possible.
 Skin contact Due to lack of data the classification is not possible.
 Eye contact Causes eye irritation.
Symptoms related to the physical, chemical, and toxicological characteristics
Delayed and immediate effects of exposure
 Increase in blood pressure. Cardiac arrest. Hyperthermia. Death.
Chronic effects
 Psychological dependence. Heart damage. Central nervous system effects.
Medical conditions aggravated by exposure
 Cardiovascular or cerebrovascular disease. High blood pressure. Porphyria. Tourette's syndrome. Thyroid problems.
Acute toxicity
 Toxic if swallowed.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cocaine Hydrochloride (CAS 53-21-4)</td>
<td>Mouse</td>
<td>96 mg/kg</td>
</tr>
<tr>
<td>Oral LD50</td>
<td>Mouse</td>
<td>96 mg/kg</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Mouse</td>
<td>Due to lack of data the classification is not possible.</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Mouse</td>
<td>Causes eye irritation.</td>
</tr>
<tr>
<td>Local effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eye</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Result: Mild (2% solution)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Species: Rabbit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory sensitization</td>
<td>Mouse</td>
<td>Due to lack of data the classification is not possible.</td>
</tr>
<tr>
<td>Skin sensitization</td>
<td>Mouse</td>
<td>Due to lack of data the classification is not possible.</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Mouse</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
</tbody>
</table>
Mutagenicity

Chinese hamster ovary K1 cells
Result: Positive (with activation)
 Chromosome aberrations in micronucleus formation
Result: Positive
 Sister chromatid exchanges
Result: Positive

Carcinogenicity
Due to lack of data the classification is not possible. This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

Reproductive toxicity
May damage fertility or the unborn child. Studies in drug-abusing pregnant women have shown that cocaine may increase the risk of miscarriage, premature labor, stillbirth, congenital malformations, decreased fetal growth, and neurobehavioral impairment and withdrawal symptoms in the newborn.

Reproductivity
Gestational study (1-3 times human dose)
Result: Increased congenital anomalies, including brain, eye, and cardiovascular defects.
Species: Mouse
Gestational study (2.5 to 4 x human dose)
Result: Increased frequency of limb and tail defects; increased CNS anomalies.
Species: Rat
Gestational study (equivalent human doses)
Result: Decreased birth weigh, length, and head circumference; lower fetal survival rate.
Species: Rhesus monkey

Specific target organ toxicity - single exposure
Narcotic effects.

Specific target organ toxicity - repeated exposure
Due to lack of data the classification is not possible.

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

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.

Mobility in soil
Not available.

Other adverse effects
Not available.

13. Disposal considerations

Disposal instructions
This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). 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 regulated.

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
UN number: UN1544
UN proper shipping name: Alkaloid Salts, solid, n.o.s. (Cocaine Hydrochloride)
Transport hazard class(es): 6.1
Subsidiary risk: -
Packing group: II

IATA
UN number: UN1544
UN proper shipping name: Alkaloid salts, solid, n.o.s. (Cocaine hydrochloride)
Transport hazard class(es): 6.1
Subsidiary risk: -

Packing group: II

Other information:
- Passenger and cargo aircraft: Allowed.
- Cargo aircraft only: Allowed.
- Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

DOT; IATA

15. Regulatory information

US federal regulations:
- CERCLA/SARA Hazardous Substances - Not applicable.

One or more components are not listed on TSCA.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories:
- Immediate Hazard - Yes
- Delayed Hazard - Yes
- Fire Hazard - No
- Pressure Hazard - No
- Reactivity Hazard - No

SARA 302 Extremely hazardous substance:
- Not listed.

SARA 311/312 Hazardous chemical:
- No

SARA 313 (TRI reporting):
- Not regulated.

Other federal regulations:
- Safe Drinking Water Act (SDWA):
  - Not regulated.

Drug Enforcement Administration (DEA) (21 CFR 1308.11-15):
- Schedule II - 9041

Food and Drug Administration (FDA):
- Not regulated.

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.

US. California Proposition 65:
- Not Listed.

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>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>No</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>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>No</td>
</tr>
</tbody>
</table>

Material name: Cocaine Hydrochloride

Version #: 04    Revision date: 09-09-2015    Issue date: 04-01-2009
<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)</th>
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</thead>
<tbody>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
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<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>No</td>
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<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>No</td>
</tr>
</tbody>
</table>

*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 | 04-01-2009 |
| Revision date | 09-09-2015 |
| Version # | 04 |
| Further information | Not available. |

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Revision Information

Hazard(s) identification: Hazard statement
Hazard(s) identification: Response
Physical & Chemical Properties: Multiple Properties
Physical and chemical properties: Appearance
Physical and chemical properties: Form
Stability and reactivity: Reactivity
Toxicological information: Carcinogenicity
Transport Information: Material Transportation Information
Regulatory Information: United States
GHS: Classification