Safety Data Sheet

For Compliance with OSHA 29 CFR 1910.1200 and ANSI Z400.1-1998

Section 1: Identification

Product Name Nadolol USP
Commercial Name Not available
Product Use Drug substance. B-Adrenergic blocker
Restrictions On Use Not available

Product Code 30-2776

Company
PCCA
9901 South Wilcrest
Houston, TX 77099
Phone: 1-800-331-2498
Fax: 1-800-874-5760

In case of emergency contact:
CHEMTREC (24hr) 1-800-424-9300

Section 2: Hazard(s) Identification

OSHA Haz Com: CFR 1910.1200 Not available

Signal Word DANGER

Hazard Statement(s) Causes damage to organs through prolonged or repeated exposure.

Pictogram(s) or Symbol(s)

Precautionary Statement(s):

Prevention P260 - Do not breathe dust/fume/gas/mist/vapours/spray
Response P314 - Get medical advice/attention if you feel unwell
Storage Not available.
Disposal Not available.

Section 3: Composition/Information on Ingredients

Substance/Mixture Substance
Components Nadolol USP
% By Weight 100
CAS# 42200--33-9
Molecular Weight Not available
Chemical Formula C17H27NO4
Synonym(s) 1-(TERT-BUTYLAMINO)-3-((5,6,7,8-TETRAHYDRO-CIS-6,7-DIHYDROXY-1-) TjETBT/PjCourier 10 SOLGOL * SQ 11725 * 2,3-CIS-1,2,3,4-TETRAHYDRO-5-((2-HYDROXY-3-TERT-) TjETBT/PjCourier

Mixtures

Name	CAS#	% by Weight	TLV/PEL	LC50/LD50
Nadolol USP	42200-33-9			

Section 4: First-Aid Measures

Inhalation If inhaled, remove to fresh air, if breathing becomes difficult, call a physician.

Skin Contact Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops and persists.

Eye Contact Immediately flush eyes with running water for at least 15 minutes, keeping eye lids open. COLD water may be used. Seek medical attention.

Ingestion Induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested: the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Have conscious person drink several glasses of water or milk. Seek immediate medical attention

Symptoms/Effects

Acute Not available

Delayed Not available

Immediate Medical Attention

Not available.

Section 5: Fire-Fighting Measures

Suitable Extinguishing Media

Use fire-extinguishing media appropriate for surrounding materials. Water. Foam. Dry chemical or CO2. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam.

Unsuitable Extinguishing Media

Do not use water jet.

Products of Combustion

May emit toxic fumes of oxides of nitrogen during heating or fire.

Firefighters Special Equipment and Precautions

Wear suitable protective equipment. Use standard firefighting procedures and consider the hazards of other involved materials.

Section 6: Accidental Release Measures

Small spill and leak Vacuum or sweep up spillage. Avoid dust. Place spillage in appropriate labeled solid pharmaceutical waste class 261N container for waste disposal. Wash contaminated clothing before reuse. Ventilate area and wash spill site. Follow appropriate safe work practice. Large spill and leak Use a shovel put the material into a appropriate labeled waste disposal container. Finish cleaning by spreading water on the contaminated surface. Label and dispose as pharmaceutical waste class 261N. Follow appropriate safe work practices. Protective clothing in case of large spill Hooded full suit – Tyvek coveralls or equivalent air purifying respirator with particulate cartridge P100 (HEPA). Boots gloves.

Section 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. Packaging and Storage condition: Preserve in well-closed container at below 25°C, excursions permitted between 15°C and 30°C.

Section 8: Exposure Controls/Personal Protection

Exposure Limits Not available

Engineering Controls

Exposure to This material can be controlled in many ways. The measures appropriate for a particular worksite depend on how this material is used and on the extent of exposure. This general information can be used to help develop specific control measures. Ensure that control systems are properly designed and maintained. Comply with occupational, environmental, fire and other applicable regulations. Engineering methods to control hazardous conditions are preferred. Methods include mechanical (local exhaust) ventilation, process or personnel enclosure and control of process conditions. Administrative controls and personnel enclosure and control of process conditions. Administrative controls and personnel protective equipment may also be required. Supply sufficient replacement air to make up for air removed by exhaust system.

Personal Protection

Personal protection: Splash goggles. Full suit with hood, or disposable/washable cover all. Half face piece Air purifying respirator with particulate cartridge P100 (HEPA) (Less than 1g). Powdered air purifying respirator (PAPR) with particulate cartridge P100 (HEPA) (greater than 1g). Boots rubber gloves (impervious). Chemical fume hood. Personal protective equipment: If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment, including approved respiratory protection. Have appropriate equipment available for use in emergencies such as spills or fire. If respiratory protection is required, institute a complete respiratory protection program, including selection, fit testing, training, maintenance and inspection. Refer to the CSA standard Z94,4-M1982," selection care and use of respirators," available from the Canadian standards association, Rexadale, Ontario, M9W 1R3, or equivalent local codes and standards. Respiratory protection guidelines: Where barrier technology or a high degree of process contaminant exists, respiratory protection may not be required. When working with quantities less than 1 kg and in the absence of appropriate local exhaust ventilation (LEV) or other containment, a half face piece Air purifying respirator with particulate cartridge P100 (HEPA) and goggles is adequate. When working with quantities greater than 1 kg and in the absence of local exhaust ventilation (LEV) or other containment, a powdered Air purifying respirator (PAPR) with particulate cartridge P100 (HEPA) and helmet/hooder supplied air respirator is recommended. The specific respirator selected must be based on contamination levels found in the work place, the specific operation and not exceed the working limits of the respirator. When performing cleaning activities refer to appropriate cleaning solution MSDS. NOTE: barrier technology utilizes physical containment facilities and methods to prevent human contact with a chemical or biological material with hazardous properties. Examples include glove boxes, flexible isolators, robotics or remote operation. EYE/FACE PROTECTION: Safety glasses with side shields 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. 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 non-latex gloves.

Section 9: Physical and Chemical Properties

Appearance	White to off-white, crystalline powder.
Odor	practically odorless,
Odor Threshold	Not available

Melting Point	124°C (255.2°F) – 136° C.	**pH**	Not available
Freezing Point	Not available	**Vapor Pressure**	Not available
Boiling Point/Range	Not available	**Vapor Density**	Not available
Decomposition temperature	Not available	**Viscosity**	Not available
Partition Coefficient: n-octanol/water	Not available	**Evaporation Rate**	Not available
Flash Point	Not available	**Autoignition temperature**	Not available
Flammability	Not available	**Flammability or Explosive Limits:**	
		Lower	Not available
		Upper	Not available

Solubility(ies)	Freely soluble in Methanol, Soluble in water at pH 2, Soluble in alcohol, Slightly soluble in chloroform, Slightly soluble in methylene chloride, Slightly soluble in Isopropyl alcohol, Slightly soluble in water, Practically insoluble in acetone, Practically insoluble in ether, Practically insoluble in hexane and Practically insoluble in Trichloroethane
Other	Not available.

Section 10: Stability and Reactivity

Reactivity	Not available
Chemical Stability	Stable at normal conditions.
Hazardous Polymerization	Has not been reported.
Conditions to Avoid	Not available
Incompatible Materials	Strong oxidizing agents.
Hazardous Decomposition Products	Carbon monoxide, Carbon dioxide, Nitrogen oxides

Section 11: Toxicological Information

RTECS Not available

Acute Toxicity
Oral LD50 (Mouse): 3800 mg/Kg

Skin Corrosion/Irritation
May cause skin irritation.

Serious Eye Damage/Irritation
May cause eye irritation.

Respiratory or Skin Sensitization
May cause respiratory tract irritation.

Germ Cell Mutagenicity
Not available

Carcinogenicity
Not available

Reproductive Toxicity
May cause adverse reproductive effects and birth defects (teratogenic)

Routes of Entry
Inhalation. Ingestion.

Symptoms Related to Exposure

Ingestion: May affect vision (visual disturbances,blurred vision), behavior/central nervous system (antipsychotic, headache, sedation, mental depression progressing to catatonia, hallucinations, slurred speech, dizziness, fatigue, weakness, numbness, disorientation, short term memory loss, emotional lability, decreased performance on neuropsychometric tests, convulsions), respiration (increased airway resistance, cough, nasal stuffiness, pulmonary edema, bronchospasm, cyanosis), cardiovascular system (hypotension, bradycardia, congestive heart failure in sensitive persons).

Potential Health Effects

May also cause sweating, tinnitus peripheral vascular insufficiency, facial swelling, dry mouth. Chronic Potential Health Effects: Ingestion: Prolonged or repeated ingestion may affect behavior/central nervous system, urinary system (kidneys), cardiovascular system, and cause weight loss or weight gain, decreased libido, and other symptoms similar to that of acute ingestion.

Target Organ(s) May cause damage to the following organs: lungs, heart and upper respiratory tract.

Section 12: Ecological Information

Ecotoxicity

Aquatic toxicity LC50 (48 h) : > 100 mg/l, fish LC50 (48 h): > 100 mg/l, Daphnia magna EC50 (48 h): 163,4 mg/l, Ceriodaphnia dubia

Persistance and Degradability

Not available

Bioaccumulative Potential

An estimated BCF of 3 was calculated for nadolol(SRC), using a log Kow of 0.71(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

Mobility in Soil

The Koc of nadolol is estimated as 60(SRC), using a log Kow of 0.71(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that nadolol is expected to have high mobility in soil.

Other Adverse Effects

Not available

Section 13: Disposal Considerations

Waste Disposal

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.

Disposal of Container

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

Other Considerations

Not available

Section 14: Transport Information

DOT Classification

DOT Not a DOT controlled material (United States).

Section 15: Regulatory Information

Regulations

Not available.

Other

Not available.

Section 16: Other Information

nformation which has been added, deleted or revised' Storage 7.2: Storage conditions have been corrected: ' °G) / at room temperature. The information above is based on available knowledge, literature and experience and cannot be considered as complete.