# CHEMSYNTH CORPORATION

*(manufacturer and exporter of chemical raw materials)*

**Kailas Business Park ,Veer Savarkar Marg , Vikroli west Mumbai 400 078, India.**

**Tele: +91 22 2578 9174 fax: +91 22 2569 0837, Email info@chemsynth.co.in**


## Material safety data sheet

## Phenylbenzimidazole Sulfonic Acid

1. Product and Company Identification Material name Ensulizole Catalog number 1530809 Version # 02 Revision date 11-17-2011 Chemical name 1H-Benzimidazole-5-sulfonic acid-2-phenylCAS # 27503-81-7 Synonym(s) Phenylbenzimidazole Sulfonic Acid

2. Hazards Identification OSHA regulatory status This product is considered not hazardous under 29 CFR 1910.1200 (Hazard Communication). Potential health effects Eyes Health injuries are not known or expected under normal use. Skin Health injuries are not known or expected under normal use. Inhalation Health injuries are not known or expected under normal use. Ingestion Health injuries are not known or expected under normal use. Non-hazardous components CAS # Percent

3. Composition / Information on Ingredients Phenylbenzimidazole Sulfonic Acid cas no - 27503-81-7

4. First Aid Measures General advice 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 Flammable properties 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. Extinguishing media Suitable extinguishing media Water spray, dry chemical, carbon dioxide, or foam as appropriate for surrounding fire and materials. Protection of firefighters Protective equipment and precautions for firefighters Wear suitable protective equipment. Fire fighting equipment/instructions Move containers from fire area if you can do so without risk. In the event of fire, cool tanks with water spray. 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. Material name: Ensulizole MSDS No. 1530809 Version #: 02 Revision date: 11-17-2011 Print date: 11-17-2011 USP MSDS US 1 / 5

6. Accidental Release Measures Personal precautions Keep unnecessary personnel away. Environmental precautions Prevent further leakage or spillage if safe to do so. Methods for cleaning up 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 labeled container for disposal. Wash spill site.

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. 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. 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.

8. Exposure Controls / Personal Protection 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. 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. 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. Skin protection 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 & Chemical Properties Physical state Solid. Appearance White to ivory-colored clumpy powder. Form Powder. Color Not available. Odor Slight odor or odorless. Odor threshold Not available. pH 4.2 (saturated aqueous solution); 5.0 (0.1% aqueous solution) Vapor pressure < 0.0000001 kPa at 25°C Vapor density Not available. Boiling point Not available. Melting point/Freezing point 770 °F (410 °C) (decomposes) Solubility (water) Practically insoluble Other data Solubility (other) Soluble in alcohol Specific gravity Not available. Relative density Not available. Material name: Ensulizole MSDS No.

1530809 Version #: 02 Revision date: 11-17-2011 Print date: 11-17-2011 USP MSDS US 2 / 5 Flash point > 212 °F (> 100 °C) (CC); >300 ° C (method not specified) Flammability limits in air, upper, % by volume Not available. Flammability limits in air, lower, % by volume Not available. Auto-ignition temperature Not available. Partition coefficient (n-octanol/water) 1.8 Molecular weight 274.3 Molecular formula $C_{13}H_{10}N_2O_3S$

10. Chemical Stability & Reactivity Information Chemical stability Stable at normal conditions. Conditions to avoid None under normal conditions. Incompatible materials Not available. Hazardous decomposition products When heated to decomposition, material emits toxic fumes of NOx and SOx. Emits toxic fumes under fire conditions. Possibility of hazardous reactions Will not occur. Toxicological data

11. Toxicological Information Product Test Results Phenylbenzimidazole Sulfonic Acid (27503-81-7) Dermal LD50 Rat: > 3000 mg/kg Oral LD50 Rat: > 16000 mg/kg Sensitization Product Test Results Ensulizole Result: Non-sensitizing Species: Guinea pig Organ: Skin Local effects Product Test Results Ensulizole Irritation Result: Non-irritant Species: Rabbit Organ: Eye Ensulizole Irritation Result: Non-irritant Species: Rabbit Organ: Skin Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. Mutagenicity Phenylbenzimidazole sulfonic acid tested negative in the Ames S. typhimurium assay, with and without activation, in E. coli, with and without activation, and in an in vitro chromosome aberration test in human peripheral blood lymphocytes. Reproductive effects The sodium salt of phenylbenzimidazole sulfonic acid (sodium phenylbenzimidazole sulfonate) did not cause an increase in malformations in the offspring of pregnant rats administered up to 1000 mg/kg.

12. Ecological Information Persistence and degradability Not available. Partition coefficient 1.8 Material name: Ensulizole MSDS No. 1530809 Version #: 02 Revision date: 11-17-2011 Print date: 11-17-2011 USP MSDS US 3 / 5

13. Disposal Considerations Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. 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. Dispose in accordance with all applicable regulations. Dispose of waste in accordance with all applicable Federal, State, and local laws. Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport Information IATA Not regulated as dangerous goods. DOT Not regulated as dangerous goods.

15. Regulatory Information US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List. CERCLA/SARA Hazardous Substances - Not applicable. CERCLA (Superfund) reportable quantity None Superfund Amendments and Reauthorization Act of 1986 (SARA) Hazard categories Immediate Hazard - No Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Section 302 extremely hazardous substance No Section 311 hazardous chemical No Inventory status 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) Yes Europe European Inventory of Existing Commercial Chemical Substances Yes (EINECS) Europe European List of Notified Chemical Substances (ELINCS) No Japan Inventory of Existing and New Chemical Substances (ENCS) No Korea Existing Chemicals List (ECL) No New Zealand New Zealand Inventory Yes Philippines Philippine Inventory of Chemicals and Chemical Substances Yes (PICCS) 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) State regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm. Material name: Ensulizole MSDS No. 1530809 Version #: 02 Revision date: 11-17-2011 Print date: 11-17-2011 USP MSDS US 4 / 5

16. Other Information Disclaimer USP Reference Standards are sold for chemical test and assay purposes only, and NOT for human consumption. The information contained herein is applicable solely to the chemical substance when used as a USP Reference Standard and does not necessarily relate to any other use of the substance described, (i.e. at different concentrations, in drug dosage forms, or in bulk quantities). USP Reference Standards are intended for use by persons having technical skill and at their own discretion and risk. This information has been developed by USP staff from sources considered reliable but has not been independently verified by the USP. Therefore, the USP Convention cannot guarantee the accuracy of the information in these sources nor should the statements contained herein be considered an official expression. NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE is made with respect to the information contained herein.