MATERIAL SAFETY DATA SHEET

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Section 1 - Product and Company Information Product Name 5BETA-PREGNANE-3ALPHA, 20BETA-DIOL Product Number 81580 Brand FLUKA Company Sigma-Aldrich Address 3050 Spruce Street SAINT LOUIS MO 63103 US Technical Phone: 800-325-5832 Fax: 800-325-5052 Emergency Phone: 314-776-6555 Section 2 - Composition/Information on Ingredient Substance Name CAS # SARA 313 5B-PREGNANE-3A-20B-DIOL 80-91-1 No Formula C21H36O2 Chemical Family Bioactive peptide. 3-alpha,20-beta-Dihydroxy-5-beta-pregnane * Synonyms Pregnane-3,20-diol, (3-alpha,5-beta,20R)- (9CI) * 5-beta-Pregnane-3-alpha,20-beta-diol (8CI) * Pregnanediol V RTECS Number: TU4157110 Section 3 - Hazards Identification EMERGENCY OVERVIEW Caution: The chemical, physical, and toxicological properties of this product have not been thoroughly investigated. Exercise due care. HMIS RATING HEALTH: 3 FLAMMABILITY: 0 REACTIVITY: 0 NFPA RATING HEALTH: 3 FLAMMABILITY: 0 REACTIVITY: 0 For additional information on toxicity, please refer to Section 11. Section 4 - First Aid Measures ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE If inhaled, remove to fresh air. If breathing becomes difficult, call a physician. DERMAL EXPOSURE In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician. EYE EXPOSURE In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician. Section 5 - Fire Fighting Measures FLASH POINT N/A AUTOIGNITION TEMP N/A FLAMMABILTTY N/A EXTINGUISHING MEDIA Suitable: Carbon dioxide, dry chemical powder, or appropriate foam. FIREFIGHTING Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Section 6 - Accidental Release Measures PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL Evacuate area. PROCEDURE(S) OF PERSONAL PRECAUTION(S) Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves. METHODS FOR CLEANING UP Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete. Section 7 - Handling and Storage HANDLING User Exposure: Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. STORAGE Suitable: Keep tightly closed. Section 8 - Exposure Controls / PPE ENGINEERING CONTROLS

Mechanical exhaust.

PERSONAL PROTECTIVE EQUIPMENT Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Hand: Compatible chemical-resistant gloves. Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties Color: Colorless Appearance Form: Crystals At Temperature or Pressure Property Value Molecular Weight 320,5000 AMU рΗ N/A N/A BP/BP Range 231,000 °C MP/MP Range Freezing Point N/A Vapor Pressure N/A N/A Vapor Density Saturated Vapor Conc. N/A Bulk Density N/A Odor Threshold N/A Volatile% N/A VOC Content N/A Water Content N/A Solvent Content N/A Evaporation Rate N/A Viscosity N/A Surface Tension N/A Partition Coefficient N/A Decomposition Temp. N/A Flash Point N/A Explosion Limits N/A N/A Flammability Autoignition Temp N/A Refractive Index N/A Degree of Rotation: 10,000 g/l Solvent: EtOH Optical Rotation +22 - +19 (+/-1)Miscellaneous Data N/A Solubility N/A

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

HAZARDOUS DECOMPOSITION PRODUCTS Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Section 11 - Toxicological Information

ROUTE OF EXPOSURE Multiple Routes: May be harmful by inhalation, ingestion, or skin absorption. SIGNS AND SYMPTOMS OF EXPOSURE Some steroids show carcinogenic and teratogenic activity. CONDITIONS AGGRAVATED BY EXPOSURE The toxicological properties have not been thoroughly investigated. TOXICITY DATA Intravenous Mouse 10 MG/KG LD50 Remarks: Behavioral:Tremor. Behavioral:Convulsions or effect on seizure threshold. CHRONIC EXPOSURE - CARCINOGEN Result: Some steroids show carcinogenic and teratogenic activity. CHRONIC EXPOSURE - TERATOGEN Result: Some steroids show carcinogenic and teratogenic activity. Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: None Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

US CLASSIFICATION AND LABEL TEXT US Statements: Caution: The chemical, physical, and toxicological properties of this product have not been thoroughly investigated. Exercise due care.

UNITED STATES REGULATORY INFORMATION SARA LISTED: No

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR. DSL: No NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2010 Sigma-Aldrich Co. License granted to make unlimitedpaper copies for internal use only.