MATERIAL SAFETY DATA SHEET Date Printed: 09-20-2010 Date Updated: 02/23/2009 Version 1.12 _____ Section 1 - Product and Company Information _____ SILICA GEL, 70-270 MESH, 60 ANGSTROM, FOR Product Name COLUMN CHROMATOGRAPHY Product Number 288616 Brand SIG-ALD Company Sigma-Aldrich Address 3050 Spruce Street SAINT LOUIS, MO 63103 USA Technical Phone: +1 800-325-5832 Fax: +1 800-325-5052 Emergency Phone: (314) 776-6555 _____ Section 2 - Composition/Information on Ingredient Substance Name CAS # SARA 313 SILICA, AMORPHOUS, PRECIPITATED 112926-00-8 No AND GEL RTECS Number: VV7315000 _____ Section 3 - Hazards Identification _____ EMERGENCY OVERVIEW Caution: Avoid contact and inhalation. Target organ(s): Lungs. HMIS RATING HEALTH: 1* FLAMMABILITY: 0 REACTIVITY: 1 NFPA RATING HEALTH: 1 FLAMMABILITY: 0 **REACTIVITY: 1** *additional chronic hazards present. 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 contact, immediately wash skin with soap and copious SIG-ALD - 288616 Page 1

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/AAUTOIGNITION TEMP N/A FLAMMABILITY N/A EXTINGUISHING MEDIA Suitable: Noncombustible. Use extinguishing media appropriate to surrounding fire conditions. FIREFIGHTING Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Emits toxic fumes under fire conditions. _____ Section 6 - Accidental Release Measures _____ PROCEDURE(S) OF PERSONAL PRECAUTION(S) Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust. 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. SPECIAL REQUIREMENTS Hygroscopic. _____ Section 8 - Exposure Controls / PPE _____ ENGINEERING CONTROLS Safety shower and eye bath. Mechanical exhaust required. 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: Protective gloves. Eye: Chemical safety goggles. SIG-ALD - 288616

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Wash thoroughly after handling. EXPOSURE LIMITS, RTECS Country Source USA ACGIH Type Value TWA 10 MG 10 MG/M3 Remarks: total dust PEL USA OSHA. 8H TWA 80 MG/M3/%SIO2 TWA 6 MG/M3 NIOSH USA _____ Section 9 - Physical/Chemical Properties _____ Physical State: Solid Appearance Property Value At Temperature or Pressure N/A рΗ BP/BP Range N/A MP/MP Range N/A Freezing Point N/A Vapor Pressure N/A Vapor Density N/A Saturated Vapor Conc. N/A Bulk Density N/A Odor Threshold N/A Volatile% N/A VOC Content N/A Water Content N/A Water ContentN/ASolvent ContentN/AEvaporation RateN/A Viscosity N/A Surface Tension N/A Partition Coefficient N/A Decomposition Temp. N/A N/A Flash Point Explosion Limits N/A Flammability N/A Autoignition TempN/ARefractive IndexN/AOptical RotationN/A Miscellaneous Data N/A Solubility N/A N/A = not available_____ Section 10 - Stability and Reactivity _____ STABILITY Stable: Stable. Conditions to Avoid: Moisture. Materials to Avoid: Strong acids, Hydrogen fluoride. HAZARDOUS DECOMPOSITION PRODUCTS Hazardous Decomposition Products: Nature of decomposition products not known. HAZARDOUS POLYMERIZATION Hazardous Polymerization: Will not occur _____ Section 11 - Toxicological Information _____ ROUTE OF EXPOSURE Skin Contact: May cause skin irritation. SIG-ALD - 288616 Page 3

irritating to mucous membranes and upper respiratory tract. Ingestion: May be harmful if swallowed. TARGET ORGAN(S) OR SYSTEM(S) Lungs. SIGNS AND SYMPTOMS OF EXPOSURE To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Amorphous silica is not classifiable as to its carcinogenicity to humans (Group 3); however, crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1) (IARC, Vol.: 68 (1997) (p. 41)). Therefore, amorphous silica should be handled as if possessing the same hazards as the crystalline form. CHRONIC EXPOSURE - CARCINOGEN Result: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification. IARC CARCINOGEN LIST Rating: Group 3 Section 12 - Ecological Information No data available. _____ Section 13 - Disposal Considerations _____ APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION Contact a licensed professional waste disposal service to dispose of this material. 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 _____ EU ADDITIONAL CLASSIFICATION S: 22-24/25 Safety Statements: Do not breathe dust. Avoid contact with skin and eyes. US CLASSIFICATION AND LABEL TEXT US Statements: Caution: Avoid contact and inhalation. Target organ(s): Lungs. UNITED STATES REGULATORY INFORMATION SIG-ALD - 288616

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Inhalation: May be harmful if inhaled. Material may be

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.