

SAFETY DATA SHEET

COLLOIDAL SILICA

SECTION 1: IDENTIFICATION

GHS PRODUCT IDENTIFIERS:

PRODUCT NAME: MAS Epoxies Colloidal Silica
SYNONYMS, TRADE NAMES: MAS Colloidal Silica, Filler
OTHER MEANS OF IDENTIFICATION: Not available

RECOMMENDED USE OF THE CHEMICAL AND RESTRICTIONS ON USE:

USES: Thixotropic Filler for Epoxy Resins
RESTRICTIONS ON USE: None Identified

SUPPLIER'S DETAILS:

MANUFACTURER/SUPPLIER: Endurance Technologies, Inc.
275 Bridge Point Drive
South Saint Paul, MN 55075, USA
TELEPHONE: +1 651 451 8000
FACSIMILE: +1 651 451 9728

CONTACT PERSON: Eric Frank

EMERGENCY PHONE NUMBER:

INFOTRAC (24 HRS): USA & CANADA 1 800 535 5053
INFOTRAC (24 HRS): INTERNATIONAL +1 352 323 3500

SECTION 2: HAZARDS IDENTIFICATION

GHS CLASSIFICATION OF SUBSTANCE OR MIXTURE: Not Hazardous

GHS LABEL ELEMENTS:

HAZARD SYMBOLS: Not Applicable
SIGNAL WORDS: Not Applicable
HAZARD STATEMENTS: Not Applicable

PRECAUTIONARY STATEMENTS:

PREVENTION: P264 Wash hands thoroughly after handling.
P280 Wear protective gloves, clothing, and eye/face protection.

RESPONSE: P301+P312 IF SWALLOWED: Call POISON CETNER and/or doctor if you feel unwell.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P332+P313 If skin irritation occurs: Get medical attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P304+P312 IF INHALED: Call POISON CENTER if you feel unwell.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical attention.
P308+P313 IF exposed or concerned: Get medical attention.
P391 Collect spillage.

STORAGE: P403+P233 Store in a well-ventilated place. Keep container tightly closed.

DISPOSAL: P501 Dispose of contents and containers in accordance with local, regional and



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international regulations.

Precautionary statements are listed according to the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS) – Annex III

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

| CHEMICAL NAME: | CAS NUMBER: | CONTENT: |
|------------------------|-------------|----------|
| Amorphous Fumed Silica | 112945-52-5 | >99% |

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits.

SECTION 4: FIRST-AID MEASURES

DESCRIPTION OF NECESSARY FIRST-AID MEASURES:

INHALATION: If affected, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Seek medical attention if breathing difficulties continue.

SKIN: Remove contaminated clothing and shoes. Wash the affected area with plenty of soap and water until no evidence of the material remains (at least 15-20 minutes). Launder clothing before reuse. Get medical attention if symptoms occur.

EYES: Immediately flush eyes with plenty of clean water for an extended time, not less than fifteen (15) minutes. Flush longer if there is any indication of residual chemical in the eye. Ensure adequate flushing of the eyes by separating the eyelids with fingers and roll eyes in a circular motion. Seek medical attention if irritation develops or persists.

INGESTION: Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse out the mouth with water. Get medical attention if you feel unwell.

MOST IMPORTANT SYMPTOMS AND EFFECTS, ACUTE AND DELAYED:

SYMPTOMS: Irritation. Pre-existing skin problems and respiratory conditions may be aggravated by prolonged or repeated contact. See section 11 for additional information.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED, IF NECESSARY:

TREATMENT: Treat symptomatically and eliminate over exposure.

SECTION 5: FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA:

SUITABLE: Use water spray, foam, dry chemical or carbon dioxide.

UNSUITABLE: Do not use full-force water jet in order to avoid dispersal and spread of fire.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL:

UNUSUAL FIRE & EXPLOSION HAZARDS: This product is an inorganic dust and will not create nor support conditions that would result in a dust explosion or fire. Product resists ignition and does not promote flame spread.

HAZARDOUS COMBUSTION PRODUCTS: Irritating or toxic substances may be emitted upon burning, combustion or decomposition. See Section 10 Hazardous decomposition products for additional information.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE-FIGHTERS: Wear self-contained



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breathing apparatus (SCBA) equipped with a full face piece and operated in a pressure-demand mode (or other positive pressure mode) and approved protective clothing. Personnel without suitable respiratory protection must leave the area to prevent significant exposure to hazardous gases from combustion, burning or decomposition. In an enclosed or poorly ventilated area, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations. See section 9 for additional information.

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES: See Section 8 for recommendations on the use of personal protective equipment. If spilled in an enclosed area, ventilate. Eliminate ignition sources. Personal Protective Equipment must be worn. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation.

ENVIRONMENTAL PRECAUTIONS: Do not flush product into public sewer, water systems or surface waters.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP: Wear proper personal protective clothing and equipment. Pick up and arrange disposal without creating dust. Vacuum, sweep up or shovel and place into labeled, closed container; store in safe location to await disposal. Do not create dust cloud by using a brush or compressed air. Change contaminated clothing and launder before reuse.

SECTION 7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: As with any chemical product, use good laboratory/workplace procedures. Do not cut, puncture, or weld on or near the container. Use under well-ventilated conditions. Wash thoroughly after handling this product. Always wash up before eating, smoking or using the facilities. Avoid eye and skin contact. Avoid inhalation of aerosol, mist, spray, fume, vapor or dust generated by this product. Avoid drinking, tasting, swallowing or ingesting this product. Wash contaminated clothing and shoes before reuse. Take precautions against static discharges.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES: Keep away from heat, sparks and open flames. Store dry at 15-40°C under well-ventilated conditions. Store this material away from incompatible substances (see section 10). Do not store in open, unlabeled or mislabeled containers. Keep container closed when not in use. Empty container contains residual product which may exhibit hazards of product. Do not reuse empty container without commercial cleaning or reconditioning. Do not store together with volatile chemicals as they may be absorbed onto product.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CONTROL PARAMETERS:

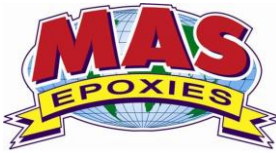
OCCUPATIONAL EXPOSURE LIMITS:

| INGREDIENT NAME | CAS NUMBER | OSHA-PEL | OSHA-PEL |
|------------------------|-------------|--|---|
| Amorphous Fumed Silica | 112945-52-5 | 5 mg/m ³ (TWA, respirable) | 15 mg/m ³ (TWA, total dust) |

APPOPRIATE ENGINEERING CONTROLS: Always provide effective general and, when necessary, local exhaust ventilation to draw spray, aerosol, fume, mist, vapors and dust away from workers to prevent routine inhalation. Ventilation must be adequate to maintain air concentrations below occupational exposure standards. When necessary use mechanical handling to reduce human contact with materials. If necessary, use local exhaust ventilation and process enclosure to control airborne dust.

INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT (PPE):

EYE/FACE Safety glasses with side sheilds. In extremely dusty environments wear unvented or



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|--------------------------------|---|
| PROTECTION: | indirectly vented goggles. Contact lenses should not be worn when working in extremely dusty environments. |
| SKIN PROTECTION: | Wear chemical resistant (impervious) gloves; PVC, neoprene, nitrile rubber, EVAL, butyl rubber. Wear chemical resistant protective clothing. Use good laboratory/ workplace procedures including personal protective clothing: lab coat and protective gloves. |
| RESPIRATORY PROTECTION: | Wear dust mask with P2 filter or an approved respirator (e.g., an organic vapor respirator, a full face air purifying respirator for organic vapors, or a self-contained breathing apparatus) whenever exposure to aerosol, mist, spray, fume, vapors or dust exceed the applicable exposure limit(s) of any chemical substance listed in this SDS. |
| GENERAL PROTECTION: | Eyewash fountains and safety showers are recommended in the work area. |

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---|----------------|--|---------------------|
| APPEARANCE: | Powder | UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS: | Not applicable |
| COLOR: | White | VAPOUR PRESSURE: | Not applicable |
| ODOUR: | Odourless | VAPOUR DENSITY: | Not applicable |
| ODOUR THRESHOLD: | Not applicable | RELATIVE DENSITY: | 2.2 |
| PH: | 3.7-4.5 | SOLUBILITY(IES): | >1 mg/L |
| MELTING POINT/ FREEZING POINT | 1700°C | PARTITION COEFFICIENT (n-octanol/water): | Not available |
| INITIAL BOILING POINT AND BOILING RANGE: | 2230°C | AUTO-IGNITION TEMPERATURE: | Not applicable |
| FLASH POINT: | Not applicable | DECOMPOSITION TEMPERATURE: | >2000°C |
| EVAPORATION RATE: | Not applicable | VISCOSITY: | Not applicable |
| FLAMMABILITY (SOLID, GAS): | Not applicable | EXPLOSIVE PROPERTIES: | Not to be expected. |

SECTION 10. STABILITY AND REACTIVITY

REACTIVITY: Not applicable.

CHEMICAL STABILITY: Stable under conditions of normal storage and use.

POSSIBILITY OF HAZARDOUS REACTIONS: Will not occur

CONDITIONS TO AVOID: Incompatible materials, moisture, excessive heat and ignition sources.

INCOMPATIBLE MATIERALS: None known.

HAZARDOUS DECOMPOSITION PRODUCTS: None known. Stable under normal conditions. Product will not undergo hazardous polymerization.

SECTION 11. TOXICOLOGICAL INFORMATION

INFORMATION ON THE LIKELY ROUTES OF EXPOSURE: Eyes, skin, inhalation and ingestion.

SYMPTOMS RELATED TO THE PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS:

| | |
|--------------|----------------------------|
| EYES: | May cause eye irritation. |
| SKIN: | May cause skin irritation. |



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INHALATION: May be harmful if inhaled.
INGESTION: May be harmful if swallowed.

DELAYED AND IMMEDIATE EFFECTS AND ALSO CHONIC EFFECTS FROM SHORT AND LONG TERM EXPOSURE: Further information is not available.

ACUTE TOXICITY:

| CHEMICAL NAME | LC ₀ INHALATION (RAT) | LD ₅₀ ORAL (RAT) | LD ₅₀ DERMAL (RABBIT) |
|------------------------|----------------------------------|-----------------------------|----------------------------------|
| Amorphous Fumed Silica | 0.139 mg/L (4 hrs) | >5,000 mg/kg | >5,000 mg/kg |

CORROSION / IRRITATION / SENSITIZATION INFORMATION:

SKIN CORROSION/IRRITATION: Information is not available.
SERIOUS EYE DAMAGE/IRRITATION: Information is not available.
RESPIRATORY OR SKIN SENSITIZATION: Information is not available.

CARCINOGENICITY / MUTAGENICITY / REPRODUCTIVE TOXICOLOGY INFORMATION:

GERM CELL MUTAGENICITY: No evidence of mutagenic effects.
CARCINOGENICITY: No evidence that cancer may be caused.
REPRODUCTIVE TOXICITY: No evidence of reproduction toxic properties.

SPECIFIC TARGET ORGAN TOXICITY (STOT):

STOT-SINGLE EXPOSURE: Information is not available.
STOT-REPEATED EXPOSRE: Information is not available.

ASPIRATION HAZARD: No aspiration toxicity classification

OTHER INFORMATION: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by IARC, ACGIH, NTP or OSHA.

SECTION 12. ECOLOGICAL INFORMATION

TOXICITY:

| CHEMICAL NAME | TEST | SPECIES | RESULT |
|------------------------|-------------------|-------------------|--------------|
| Amorphous Fumed Silica | OECD 203 (96 hrs) | Brachydanio rerio | >10,000 mg/L |
| | OECD 202 (24 hrs) | Daphnia magna | >10,000 mg/L |

PERSISTENCE AND DEGRADABILITY:

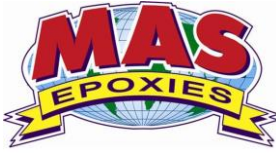
| CHEMICAL NAME | TEST | PERIOD | RESULT |
|------------------------|--|--------|--------|
| Amorphous Fumed Silica | Inorganic product, test of biodegradability cannot be carried out. | | |

BIOACCUMULATIVE POTENTIAL:

| CHEMICAL NAME | Log P _{ow} | BCF | POTENTIAL |
|------------------------|---------------------|---------------|--------------------|
| Amorphous Fumed Silica | Not available | Not available | Not to be expected |

MOBILITY IN SOIL:

| CHEMICAL NAME | SOIL/WATER PARTITION COEFFICIENT (K _{oc}) |
|------------------------|---|
| Amorphous Fumed Silica | No remarkable mobility in soil is to be expected. |



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OTHER ADVERSE EFFECTS: Additional information is not available

SECTION 13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS: Dispose of unused contents (incineration) in accordance with national and local regulations. Dispose of container in accordance with national and local regulations. Ensure the use of properly authorized waste management companies, where appropriate. See section 8 for recommendations on the use of personal protective equipment.

SECTION 14. TRANSPORTATION INFORMATION

UN NUMBER:

UN PROPER SHIPPING NAME: Non Regulated

TRANSPORT HAZARD CLASS:

| | |
|--|---------------------|
| U.S. DOT HAZARD CLASS: | Not dangerous goods |
| CANADA TDG HAZARD CLASS: | Not dangerous goods |
| EUROPE ADR/RID HAZARD CLASS: | Not dangerous goods |
| IMDG CODE (OCEAN) HAZARD CLASS: | Not dangerous goods |
| ICAO/IATA (AIR) HAZARD CLASS: | Not dangerous goods |

PACKING GROUP:

ENVIRONMENTAL HAZARDS:

| | |
|-----------------------------------|----|
| MARINE POLLUTANT: | No |
| HAZARDOUS SUBSTANCE (USA): | No |

SPECIAL PRECAUTIONS FOR USER: Information is not available.

TRANSPORTING IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE:
Information is not available.

LABEL FOR CONVEYANCE:

OTHER INFORMATION: For surface shipments within the United States: Not regulated.

SECTION 15. REGULATORY INFORMATION

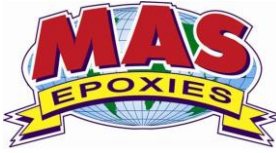
SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS SPECIFIC FOR THE PRODUCT IN QUESTION:

| | |
|--|------------------------------------|
| EU Regulation (EC) No. 1907/2006 (REACH) Annex XIV – List of substances subject to authorization, Substances of very high concern | None of the components are listed. |
| Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles | None of the components are listed. |

OTHER REGULATIONS: Additional information is not available.

CHEMICAL INVENTORIES:

| | |
|--|---|
| Canadian Domestic Substances List (DSL): | Y |
| Canadian Non-Domestic Substances List (NDSL): | N |
| European Inventory of Existing Chemical Substances (EINECS): | Y |



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European List of Notified Chemical Substances (ENCS): N
U.S. Toxic Substances Control Act (TSCA): Y

A "Y" listing indicates all intentionally added components are either listed or are otherwise compliant with the regulation. A "N" listing indicates that for one or more components: 1) there is no listing on the public inventory; 2) no information is available; or 3) the component has not been reviewed.

SECTION 16. OTHER INFORMATION

REVISION DATE: June 29, 2017

LEGEND: ACGIH: American Conference of Governmental Industrial Hygienists
ADR/RID: European dangerous goods transport road and rail regulations
CAS No: Chemical Abstract Service Registry Number
DOT: Department of Transportation (U.S.)
GHS: Globally Harmonized System of Classification and Labeling of Chemicals
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
IMDG: International Maritime Dangerous Goods code
OEL: Occupational Exposure Limits
OSHA: Occupational Safety and Health Administration (U.S.)
PEL: Permissible Exposure Limit
RQ: Reportable Quantity
SDS: Safety Data Sheet
STEL: Short Term Exposure Limit (15 minute Time Weighted Average)
TDG: Canadian Transportation of Dangerous Goods Act and Regulations
UN: United Nations
U.S.: United States

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