

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

GeoAer™ Controlled Density Geopolymer Powder

Product identifier:

Product name: GeoAer™ Controlled Density Geopolymer Powder

Relevant identified uses of the substance or mixture and uses advised against:

Identified uses: GeoAer™ Powder when combined with water and GeoAer™ Aeration Liquid forms an aerated geopolymer concrete with tunable physical properties for use as a structural cementitious material in geotechnical applications including soil stabilization, road bases and other civil infrastructure applications

Uses advised against: None

Details of the supplier of the safety data sheet:

Company Identification:

Milliken Infrastructure Solutions, LLC.
1733 Majestic Drive
Suite 101
Lafayette, CO 80026 USA
(720)-921-8810 (8:00 - 17:00 M-F)
sds@milliken.com

Emergency telephone number:

Chemtrec:
1-800-424-9300 (Chemtrec - US)
1-703-527-3887 (International)

SECTION 2: Hazards identification

Classification of the substance or mixture:

The product has not been classified as hazardous according to the legislation in force.

Hazard summary:

Physical hazards: No data available.

Health hazards:

Inhalation: Crystalline silica: Overexposure to the respirable dust of crystalline silica (quartz or cristobalite, less than or equal to 5 microns in size) may lead to silicosis in humans, which is a progressive and irreversible lung disease. Dust in high concentrations may irritate the respiratory system.

Eye contact: Dust may be irritating to the eyes and respiratory tract and may cause a low level inflammatory response in the lungs. Not known to cause permanent injury to eye tissue.

Skin contact: Severely irritating to skin. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. Prolonged or repeated skin contact may cause drying, cracking, or irritation.

Ingestion: Ingestion may cause severe irritation of the mouth, the esophagus and the gastrointestinal tract.

Other Health Effects: No data available.

Environmental hazards: No data available.

Label elements: Not applicable

Other hazards: No data available.

SECTION 3: Composition/information on ingredients

Mixtures

General information:

Chemical name	Concentration	CAS-No.	EC No.	REACH Registration No.	Notes
Crushed stone or gravel	0 to 50 %	Not available.	Not available.	Not available.	
Sand		Not available.	Not available.	Not available.	
Portland Cement			Not available.	Not available.	
Fly Ash		Not available.	Not available.	Not available.	
Crystalline Silica		14808-60-7	Not available.	Not available.	
Proprietary Ingredients		Not available.	Not available.	Not available.	

SECTION 4: First aid measures

Description of first aid measures:

Inhalation: Dust irritates the respiratory system, and may cause coughing and difficulties in breathing. If breathing is difficult, give oxygen. Get medical attention if any discomfort continues.

Eye contact: In the event of contact with the eyes, rinse thoroughly with clean water. Continue to rinse for at least 15 minutes and seek medical attention.

Skin contact: Wash the skin immediately with soap and water. Take off immediately all contaminated clothing. If skin irritation or an allergic skin reaction develops, get medical attention.

Ingestion: If swallowed, rinse mouth with water (only if the person is conscious). Get medical attention if any discomfort continues.

Most important symptoms and effects, both acute and delayed: No data available.

Indication of any immediate medical attention and special treatment needed:

Hazards: No data available.

Treatment: No data available.

SECTION 5: Firefighting measures

General fire hazards: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Extinguishing media:

Suitable extinguishing media: Water fog. Alcohol resistant foam. Dry chemical. Carbon dioxide or dry powder.

Unsuitable extinguishing media: No data available.

Special hazards arising from the substance or mixture: Material reacts with water.

**Advice for firefighters:
Special fire fighting procedures:** No data available.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: Wear appropriate personal protective equipment. The risk of inhalation of dust must be minimized as much as possible.

Environmental precautions: Do not release into the environment.

Methods and material for containment and cleaning up: Dam and absorb spillages with sand, earth or other non-combustible material. Ensure that waste and contaminated materials are collected and removed from the work area as soon as possible in a suitably labeled container. All waste materials should be packaged, labeled and transported in accordance with all national, state/provincial, and local requirements.

Reference to other sections: No data available.

SECTION 7: Handling and storage:

Precautions for safe handling: No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals. Wash promptly with soap and water if skin becomes contaminated. Practice good housekeeping. Avoid conditions which create dust.

Conditions for safe storage, including any incompatibilities: Keep containers tightly closed. Store in a cool, dry place with adequate ventilation. Keep away from incompatible materials, open flames, and high temperatures.

Specific end use(s): No data available.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational exposure limits:

Chemical name	Type	Exposure Limit values	Source
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No data available.

Exposure controls

Appropriate engineering controls: No specific recommendation made, but protection against nuisance dust must be used when the general level exceeds 10 mg/m³.

Individual protection measures, such as personal protective equipment:

General information: No data available.

Eye/face protection: Wear necessary protective equipment. Avoid contact with eyes and prolonged skin contact. Chemical goggles are recommended.

Skin protection:	
Hand protection:	Wear suitable protective clothing as protection against splashing or contamination. Wash promptly with soap and water if skin becomes contaminated. Protective gloves should be used if there is a risk of direct contact or splash. Chemical resistant gloves are recommended. If contact with forearms is likely wear gauntlet style gloves.
Other:	Wear rubber boots. Wear appropriate clothing to prevent repeated or prolonged skin contact.
Respiratory Protection:	Wear dust masks in dusty areas. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Hygiene measures:	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.
Environmental Controls:	No data available.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties:

Appearance:

Physical State:	Grey Powder (Dry)/ Grey Fluid Hydraulic Mixture (Wet)
Form:	Solid Powder (Dry)/ Fluid Slurry (Wet)
Color:	Grey
Odor:	No data available.
Odor Threshold:	No data available.
pH:	12 - 13 Aqueous suspensions
Melting point/freezing point	No data available.
Boiling Point:	No data available.
Flash Point:	No data available.
Evaporation Rate:	No data available.
Flammability (solid, gas):	No data available.
Flammability Limit - Upper (%)-:	No data available.
Flammability Limit - Lower (%)-:	No data available.
Vapor pressure:	No data available.
Vapor density (air=1):	No data available.
Relative density:	3,15 g/cm ³
Solubility(ies):	
Solubility in Water:	No data available.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Autoignition Temperature:	No data available.
Decomposition Temperature:	No data available.
Viscosity:	No data available.
Explosive properties:	No data available.
Oxidizing properties:	No data available.
Other information	

No data available.

SECTION 10: Stability and reactivity

Reactivity:	Material is stable under normal conditions.
Chemical stability:	No data available.
Possibility of hazardous reactions:	The product reacts with water and will generate heat.
Conditions to avoid:	No data available.
Incompatible materials:	No data available.
Hazardous decomposition products:	No data available.

SECTION 11: Toxicological information

Information on likely routes of exposure

Inhalation:	No data available.
Ingestion:	No data available.
Skin contact:	No data available.
Eye contact:	No data available.

Information on toxicological effects:

Acute Toxicity:

Oral:	
Product:	No data available.
Dermal:	
Product:	No data available.
Inhalation:	
Product:	No data available.

Repeated dose toxicity:	
Product:	No data available.

Skin corrosion/irritation:	
Product:	No data available.

Serious eye damage/eye irritation:	
Product:	No data available.

Respiratory or skin sensitization:	
Product:	No data available.

Germ cell mutagenicity:

In vitro:	
Product:	No data available.
In vivo:	
Product:	No data available.

Carcinogenicity:

EU SDS

Product:	No data available.
Reproductive toxicity:	
Product:	No data available.
Specific target organ toxicity - single exposure:	
Product:	No data available.
Specific target organ toxicity - repeated exposure:	
Product:	No data available.
Aspiration hazard:	
Product:	No data available.
Other adverse effects:	None

SECTION 12: Ecological information

Toxicity

Acute toxicity

Fish:

Product: No data available.

Aquatic invertebrates:

Product: No data available.

Chronic Toxicity:

Fish:

Product: No data available.

Aquatic invertebrates:

Product: No data available.

Toxicity to Aquatic Plants:

Product: No data available.

Persistence and degradability:

Biodegradation:

Product: No data available.

BOD/COD ratio:

Product: No data available.

Bioaccumulative potential:

Product: No data available.

Mobility in soil:

No data available.

Results of PBT and vPvB assessment:

No data available.

Other adverse effects:

No data available.

SECTION 13: Disposal considerations

Waste treatment methods

General information: No data available.

Disposal methods

Product: Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated packaging: No data available.

European Waste Codes: None

SECTION 14: Transport information

Land (ADR/RID)
Not regulated.

Sea (IMDG)
Not regulated.

Air (ICAO/IATA)
Not regulated.

Environmental hazards: Not regulated.

Special precautions for user: No special precautions.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Ready mix concrete/cement/geopolymer is considered a hazardous chemical under USDOL-OSHA Hazard Communication Rule, 29 CFR 1910.1200 and should be part of any hazard communication program.

Ready mix concrete/cement/geopolymer qualifies as a hazardous substance with delayed health effects under SARA (Title III), Sections 311 and 312.

Some substances in Ready Mix Concrete/cement/geopolymer are on the TSCA inventory list.

Ready mix concrete/cement/geopolymer is a hazardous substance under the Federal Hazardous Substance Act (USA)

Under California Proposition 65, this product contains chemicals (trace metals) known to the State of California to cause cancer, birth defects, or other reproductive harm. California law requires the manufacturer to give the above warning in the absence of definitive testing to prove the defined risks do not exist.

Portland cement is considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products Regulations and is therefore subject to the labeling and MSDS requirements of the Workplace Hazardous Materials Information System (WHMIS)

This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all the information required by the CPR.

Chemical safety assessment: No data available.

SECTION 16: Other information

Revision Information: Not relevant.

Key literature references and sources for data: No data available.

Wording of the R-phrases and H-statements in section 2 and 3:

Training information: No data available.

Issue date: 29.08.2013

SDS No.:

Disclaimer: This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.