

GeoCement

POWDER PRECURSOR – PART A & C

Silico-aluminate powder mix

Total document pages: 6 Revised: 21 October 2025

1. Product and company identification

1.1. Product identifier

COMMERCIAL NAME Geopolymer Powder Precursor Part A & C **1.2. Relevant identified uses of the product or mixture uses advised against RELEVANT IDENTIFIED USES** Industrial use

1.3. Details of the supplier

COMPANY

Geopolymer International LLC

Headquarters

3745 Pacific Street
Las Vegas, NV 89121

Emergency telephone number

+1 (702) 279-7178

*** This Material Safety Data Sheet is for a product in development as of the date of shipping.** The information contained herein is based on the present state of our knowledge. It characterizes the product in development with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product. We believe that such information is accurate and reliable as of the date of this safety data sheet; but no representation, guarantee or warranty, express or implied, is made. We urge persons receiving this information to make their own determination about the product as to the information's suitability and completeness for their particular application. We further urge purchasers to determine compatibility of this product for their application prior to use by making their own tests, also with regard to possible applicational influences. The abundance of conditions or methods of handling, storage, use and disposal of the product by the client are beyond our control and may be beyond our knowledge. For this and other reasons we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way with the handling, storage, use or disposal of the product.

2. Hazards identification

EMERGENCY OVERVIEW Geopolymer cement is a consistent powder without odor with light gray or dark-gray color. Does not refer to explosives or flammables. Short single exposure to the dry powder does not or almost does not pose any threat. In case of long-term skin contact with the dry powder (in case the skin is wet) or fluid mortar, chemical burns are possible (corrosive substance burns) of various degrees of severity (including third degree) and potentially irreversible tissue damages (skin, eyes, respiratory system).

EYE CONTACT Floating dust can cause instantaneous or postponed irritation or inflammation. Contact with a large amount of dry powder or liquid mortar can cause moderate eye irritation, chemical burn or blindness. To avoid serious damage, administer first medical aid immediately; then it is highly recommended to consult a doctor.

SKIN CONTACT Contact with geopolymer cement can cause dryness, discomfort, skin irritation, dermatitis, severe burns.

BURNS Long-term skin contacts with a dry powder (if the skin is wet) or liquid mortar can cause chemical burns (corrosive substance burns) of various degrees of severity (including third degree) and potentially irreversible damage of skin, eyes, respiratory system and digestive system. Skin impact can be dangerous even without pain and discomfort.

DERMATITIS Contact with geopolymer cement can cause irritation and allergic reactions that can result in dermatitis. Dermatitis is characterized by reddening, itch, rash, peeling and cracking. Contact dermatitis is caused by such physical properties of geopolymer cement as alkali contents and abrasively. Allergic contact dermatitis is caused by hypersensitivity to hexavalent chromium. Intensity can vary from moderate rash to deep skin sores. Super Sensitive persons can experience a reaction even during the first contact with cement. Persons who are in constant contact with geopolymer cement can face allergic dermatitis after several years.

INHALATION (SHARP REACTION) Dust inhaling can cause irritation of the nose, throat, lungs, and suffocation (depending on the impact severity). Inhaling high concentrations of dust can result in chemical burns of nose, throat and lungs.

INHALATION (CHRONIC SICKNESS) duration and severity of exposure. Probability of disease is determined by the

FIRE/EXPLOSION HAZARD This material is not flammable or explosive. **EXTINGUISHING**

MEDIA This material is compatible with all extinguishing media.

HAZARDS FROM COMBUSTION PRODUCTS	FIGHTERS None.
SPECIAL PROTECTIVE PRECAUTIONS AND EQUIPMENT FOR FIRE	None required.

FLAMMABILITY Not flammable. 3.

Composition/Information on Ingredients SUBSTANCES

4. First aid measures

Calcium oxide: appr. 5% Can contain traces of other
Aluminum oxide: appr. 35% components.
Silicon oxide: appr. 60%

EYE Flush thoroughly with flowing water for 15 minutes to remove all traces. If symptoms such as irritation or redness persist, seek medical attention. If wet geopolymer cement is splashed in the eye, always treat as above, and seek urgent medical attention.

SKIN Wash off skin thoroughly with water. Use a mild soap if available. Shower if necessary. Seek medical attention for persistent irritation or burning of the skin.

INHALATION Remove to fresh air, away from the dusty area. If symptoms persist, seek medical attention.

INGESTION Rinse mouth and lips with water. Do not induce vomiting. Give water to drink to dilute stomach contents. If symptoms persist, seek medical attention.

5. Firefighting measures

6. Accidental release measures

COMMON MEASURES Spills are best cleaned up by vacuum devices to avoid generating airborne dust. Recommendations on Exposure Control and Personal Protection should be followed during spill clean-up. Keep products out of storm water and sewer drains. Wetting during clean-up will cause formation of clouds.

7. Handling and storage

COMMON RULES When supplied in bags these need to be handled in accordance with manual handling Code of Practice. Protect from moisture to prevent agglomeration. Storage of geopolymer cement may be in concrete silos, steel bins, big-bags or plastic lined multi-ply paper bags.

8. Exposure controls/personal protection

ENGINEERING CONTROLS All work with dry geopolymer cement should be carried out in such a way as to minimize dust generation, exposure to dust and repeated or extended skin contact. When handling dry geopolymer cement, use local mechanical ventilation or extraction in areas where dust could escape into the work environment. For bulk deliveries, closed pumping systems are recommended. For handling of individual bags, follow instructions below if no local exhaust ventilation is available. Local dust extraction and collection may be used, if necessary, to control airborne dust levels. Work methods and engineering should aim to minimize contact with wet geopolymer cement onto exposed skin. Work areas should be cleaned regularly.

RESPIRATORY PROTECTION respirator (approved by NIOSH).
Where engineering and handling controls are not Procedures for effective use of respirators should be
adequate to minimize exposure to total dust and to applied and supervised.
respirable crystalline silica wear a suitable particulate

SKIN PROTECTION Minimize contact with geopolymer cement materials. When handling dry or wet geopolymer cement, wet geopolymer concrete, mortar or grout, personnel should wear protective clothing and impervious footwear, and gloves such as PVC. Never kneel in wet geopolymer cement, or allow extended contact of skin with wet geopolymer cement.
Remove clothing which has become contaminated with wet or dry geopolymer cement to avoid prolonged contact with the skin. If geopolymer cement gets into boots, remove socks and boots immediately and wash skin thoroughly. Wash work clothes regularly. To avoid contamination of face and lips and ingestion, wash hands before eating or smoking.

EYE PROTECTION Splash resistant Safety Glasses with side shields or safety goggles or a face shield should be worn to ensure all contact with eyes is avoided.

9. Physical and chemical properties

APPEARANCE A fine powder ranging in color from light-grey to dark-grey

ODOR No distinctive odor

BOILING/MELTING POINT Melting point >1200°C

DENSITY 800 - 1000 kg/m³

WATER SOLUBILITY Partly soluble

PARTICLE SIZE Up to 50% of the fresh dry material may be respirable (below 10 microns)

FLASHPOINT Not applicable

FLAMMABILITY LIMITS Not applicable

VAPOR PRESSURE Not applicable

VAPOR DENSITY Not applicable

FREEZING POINT Not applicable

10. Stability and reactivity

CHEMICAL STABILITY Chemically stable.

CONDITIONS TO AVOID None

INCOMPATIBLE None.

MATERIALS

HAZARDOUS None.

DECOMPOSITION PRODUCTS

HAZARDOUS None.

REACTIONS

11. Toxicological information

ACUTE EXPOSURE Swallowed: unlikely under normal industrial use. Mildly abrasive and corrosive to mouth and throat if swallowed. May cause nausea, stomach cramps and constipation.

Eyes: irritating and corrosive to the eyes and may cause alkaline burns.

Geopolymer cement dust is irritating to the eyes. Exposure to dust may aggravate existing eye irritations.

Skin: dust is irritating and drying to the skin. Direct contact with wet Geopolymer cement may cause serious skin burns. Within 12 to 48 hours (after one- to six-hour exposures) possible first, second- or third-degree burns may occur. There may be no obvious pain at the time of the exposure. Chronic skin disorders may be aggravated by exposure to dust or contact with wet geopolymer cement.

Inhaled: geopolymer cement dust is irritating to the nose, throat and respiratory tract causing coughing and sneezing. Pre-existing upper respiratory and lung diseases including asthma and bronchitis may be aggravated.

CHRONIC EXPOSURE Eyes: dust may cause irritation and inflammation of the cornea.

Skin: repeated contact causes irritation and drying of the skin and can result in skin reddening and skin rash (dermatitis). Over time this may become chronic and can also become infected.

Persons who are allergic to chromium may develop an allergic dermatitis which aggravates the irritant effects and this combination can lead to chronic cement dermatitis and serious disability particularly affecting the hands.

Inhaled: Repeated exposure to the dust may result in increased nasal and respiratory secretions and coughing. Inflammation of lining tissue of the respiratory system may follow repeated exposure to high levels of dust, with increased risk of bronchitis and pneumonia.

Repeated and prolonged exposure to dust levels which exceed the OES for crystalline silica (see above) may occur. This can cause bronchitis, and silicosis (scarring of the lung). Long term overexposure to respirable crystalline silica dust may increase the risk of other irreversible and serious disorders including scleroderma (a disease affecting the connective tissue of the skin, joints, blood vessels and internal organs). Geopolymer cement is not classified as a carcinogen by OSHA. Of the ingredients Hexavalent Chromium (Cr VI) is classified as a carcinogen by OSHA. There is debate in the medical literature concerning whether there is any risk of lung cancer arising from long term high overexposure to respirable crystalline silica. Risk of lung cancer has not been identified from using geopolymer cements containing silica. The International Agency for Research on Cancer (IARC) has classified crystalline silica, inhaled in the form of quartz or cristobalite from occupational sources, as carcinogenic to humans (Group 1).

12. Ecological information

ECOTOXICITY

PERSISTENCE AND

DEGRADABILITY

MOBILITY

13. Disposal considerations

Product forms an alkaline slurry when mixed with water. Product is persistent and would have a low degradability.

A low mobility would be expected in a landfill

DISPOSAL METHOD

Geopolymer cement can be treated as a common waste for disposal or dumped into a landfill site,

in accordance with local authority guidelines.

14. Transport information

ADR Is not regulated hazardous goods.

IMDG Is not regulated hazardous goods.

IATA

Proper shipping name not applicable

Hazard class not applicable **Packing**

UN number none **Packaging**

group not applicable

exceptions none

General not a regulated article under United States DOT, IATA, ADR, IMDG, or RID.

15. Regulatory information

INTERNATIONAL LEGISLATION Not controlled by the Montreal Protocol or Stockholm Convention.

LEGISLATION

16. Other information

Technical data contained in the present data sheet are acquired from the tests, standardized norms or their modifications, and from the applied systems of GPI. For more detailed information contact the technical service of our company.

The information contained in this data sheet, while representing the current state of knowledge, do not release the user from the accurate preliminary tests in their conditions of employment and exercise. We assume no responsibility for the improper use of the product. Technical service of the company is at the client's disposal for providing any necessary information concerning correct use of the product.