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

1.1. **Product identifier**

Name of substance: **Calcium-aluminate cements - GÓRKAL 40, GÓRKAL 40M, GÓRKAL 50, GÓRKAL 50+**

EINECS: 266-045-5 (calcium aluminates)
CAS: 65997-16-2 (calcium aluminates)

The substance is **exempt from registration** (Art. 2.7 (b) and Annex V.10 of REACH).

1.2. **Relevant identified uses of the substance or mixture and uses advised against**

High aluminate cements GÓRKAL 40,GÓRKAL 40M, GÓRKAL 50, GÓRKAL 50+

Hydraulic binding agent. When used in the right quantity and mixed with aggregate and water, it creates concrete or mortar.

1.3. **Details of the supplier of the safety data sheet**

Manufacturer: Górka Cement Sp. z o.o.
Address: ul. Lipcowa 58
32-540 Trzebinia
Poland
Telephone: 032 758 10 01
E-mail: msds@gorka.com.pl
Website: www.gorka.com.pl

1.4. **Emergency telephone number**

National Poison Information Centre (KCIT) in Poland /48 42/ 6314724

Service is available within working hours. Information is given in Polish.

## SECTION 2: Hazards identification

2.1. **Classification of the substance or mixture**

According to Regulation (EC) No. 1272/2008: **not classified** (based on test data, literature survey and read across)

2.2. **Label elements**

According to Regulation (EC) No. 1272/2008 [CLP/GHS]: labelling is not necessary as the substance is not hazardous

2.3. **Other hazards**

Cement does not meet the criteria for PBT or vPvB in accordance with Annexe XIII of REACH Regulation (EC) No. 1907/2006. It is not a substance which is persistent, bioaccumulative and toxic (PBT), it is also not very persistent and very bioaccumulative (vPvB).
Do not disrupt the functioning of the endocrine system.

After mixing with water an alkaline solution is formed which can cause temporary irritation.
Dust from aluminous cement may cause respiratory irritation.

## SECTION 3: Composition/information on ingredients

3.1. Substance

**Aluminous cement clinker – 100%.**

Does not contain:
- soluble chromium VI – the chromium content (VI) controlled in accordance with the Polish standard PN EN 196-10 (below 2 ppm). Chrome reducing agents are not used.
- respirable crystalline silica.

## SECTION 4: First aid measures

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| 4.1. | **Description of first aid measures** | General notes<br>No personal protective equipment is needed for first aid responders. First aid workers should avoid contact with wet cement.<br><br>Following contact with eyes<br>Do not rub eyes in order to avoid possible corneal damage by mechanical stress.<br>Remove contact lenses if any. Incline head to injured eye, open the eyelids widely and flush eye(s) immediately by thoroughly rinsing with plenty of clean water for at least 20 minutes to remove all particles. Avoid flushing particles into the uninjured eye. If possible, use isotonic water (0.9% NaCl). Contact a specialist of occupational medicine or an eye specialist.<br><br>Following skin contact<br>For dry cement, remove and rinse abundantly with water. For wet/damp cement, wash skin with plenty of water.<br>Remove contaminated clothing, footwear, watches, etc. and clean thoroughly before re-using them. Seek medical treatment in all cases of irritation or burns.<br><br>Following inhalation<br>Move the person to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact a physician if irritation persists or later develops or if discomfort, coughing or other symptoms persist.<br><br>Following ingestion<br>Do not induce vomiting. If the person is conscious, wash out mouth with water and give plenty of water to drink. Get immediate medical attention or contact a poison centre. |
| 4.2. | **Most important symptoms and effects, both acute and delayed** | Eyes:<br>eye contact with aluminous cement (dry or wet) may cause mechanical irritation.<br><br>Skin:<br>no specific effect.<br><br>Inhalation:<br>repeated inhalation of aluminous cement dust over a long period of time increases the risk of developing lung diseases, like in the case of any other dust. |
| 4.3. | **Indication of any immediate medical attention and special treatment needed** | There are no special requirements for immediate medical attention.<br>When visiting a physician, this MSDS should be presented. |

## SECTION 5: Firefighting measures

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| 5.1. | **Extinguishing media** | Not required – substance is **not flammable**. |
| 5.2. | **Special hazards arising from the substance or mixture** | Cement is non-combustible and non-explosive and will not facilitate or sustain the combustion of other materials. |
| 5.3. | **Advice for firefighters** | Cement poses no fire-related hazards. There is no requirement for special |

protective equipment for firefighters.

## SECTION 6: Accidental release measures

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| **6.1.** | **Personal precautions, protective equipment and emergency procedures** | Wear protective equipment as described under Section 8 and follow the advice for safe handling and use given under Section 7. |
| **6.1.1** | **For non-emergency personnel** | Wear protective equipment as described under Section 8 and follow the advice for safe handling and use given under Section 7. |
| **6.1.2.** | **For emergency responders** | Emergency procedures are not required. However, respiratory protection is needed in situations with high dust levels. When working with wet cement, hands should be protected. |
| **6.2.** | **Environmental precautions** | Do not wash cement down sewage and drainage systems or into surface and ground water. |
| **6.3.** | **Methods and material for containment and cleaning up** | Collect spilled material and use it.<br><br>Use dry clean-up methods such as vacuum clean-up or vacuum extraction (industrial portable units equipped with high efficiency particulate filters (HEPA filter) or equivalent techniques) which do not cause airborne dispersion. Never use compressed air.<br><br>Ensure that workers wear appropriate personal protective equipment and prevent dust from spreading.<br>Avoid inhalation of dust. Place spilled material in a container for future use.<br>**Wet cement**<br>Collect the wet cement and place in a container. Wait until the material dries and binds before storage. |
| **6.4.** | **Reference to other sections** | See sections 8 and 13 for more details. |

## SECTION 7: Handling and storage

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| 7.1. | **Precautions for safe handling** | Measures to prevent fire: not applicable.<br><br>Measures to prevent aerosol and dust generation: use dry clean-up methods such as vacuum clean-up or vacuum extraction. Packaging needs to be treated with care. Clean-up instructions are given in point 6.3.<br><br>Measures to protect the environment: no specific measures.<br><br>Information on general occupational hygiene: when working with cement workers should not eat, drink or smoke. Contact with skin or lips should be avoided. After working with cement or with materials containing cement, workers should wash.<br>Remove contaminated clothing, footwear, watches, etc. and clean thoroughly before re-using them. |
| 7.2. | **Conditions for safe storage, including any incompatibilities** | Cement should be stored in waterproof and dry conditions; clean and protected from contamination.<br>Engulfment hazard: cement can build-up or adhere to the walls of a |

confined space, the cement build-up can then release or fall unexpectedly. To prevent engulfment or suffocation, do not enter a confined space, such as a silo, bin, bulk truck, or other storage containers or vessels that store or contain cement, without ensuring adequate safety measures.

Bags should be stacked in way which guarantees stability.

7.3. **Specific end use(s)** — No additional information for the specific end uses.

## SECTION 8: Exposure controls/personal protection

8.1. **Control parameters**

| Type of dust | | Value (8 h) [mg/m³] | Legal reference |
|---|---|---|---|
| Poland | | | |
| Total dust – other non-poisonous industrial gases – also gases including respirable (crystalline) silica below 2 %. | | 10 | Rozporządzenia Ministra Pracy i Polityki Społecznej z dnia 29 listopada 2002 w sprawie najwyższych dopuszczalnych stężeń i natężeń czynników szkodliwych dla zdrowia w środowisku pracy (Dz. U. nr 217 poz. 1833 z późniejszymi zmianami) |
| Germany | | | |
| Allgemeiner Staubgrenzwert | Einatembare Fraktion | 10 | Technische Regeln für Gefahrstoff TRGS 900 |
| | Alveolengängige Fraktion | 3 | |
| France | | | |
| General dust | OELV total inhalable dust | 10 | Article R.4222-10 of Occupational Code |
| | OELV alveolar fraction | 5 | |

8.2. **Exposure controls**

8.2.1. **Appropriate engineering controls**

Measures to reduce generation of dust and to avoid dust propagating in the environment such as dedusting, exhaust ventilation and dry clean-up methods which do not cause airborne dispersion.

8.2.2. **Individual protection measures such as personal protection equipment**

Eye/face protection

Wear approved glasses or safety goggles according to EN 166 standard when handling dry or wet cement to prevent contact with eyes.

Skin protection

Use impervious, abrasion and alkali resistant gloves, boots, closed long-sleeved protective clothing as well as skin care products to protect the skin from prolonged contact with wet cement.

Respiratory protection

When a person is potentially exposed to dust levels above exposure limits, use appropriate respiratory protection. It should be adapted to the dust level and conform to the relevant EN standards (i.e. EN 149 EN 140, EN14387, EN 1827) or national standards.

Thermal hazards

Do not exist.

8.2.3. **Environmental exposure controls**

According to available technology and regulations on dust emission.
See engineering control measures to avoid dust propagating in the environment – point 6.3.
Take measures to ensure that cement or cement dust does not reach water (drains, sewage systems, ground or surface water).

## SECTION 9: Physical and chemical properties

9.1. **Information on basic physical and chemical properties**

(a) Appearance: aluminous cement is of grey and white colour or yellow and white colour; it is a granular inorganic solid material
(b) Odour: Odourless
(c) Odour threshold: no odour threshold, odourless
(d) pH: (T = 20°C in water, water/cement ratio 9:1): ≈11,0
(e) Melting point: > 1 250 °C
(f) Initial boiling point and boiling range: Not applicable as under normal atmospheric conditions melting point >1 250°C
(g) Flash point: Not applicable as is not a liquid
(h) Evaporation rate: Not applicable as is not a liquid
(i) Flammability (solid, gas) : Not applicable as is a solid which is non combustible and does not cause or contribute to fire through friction
(j) Upper/lower flammability or explosive limits: Not applicable as is not a flammable gas
(k) Vapour pressure: Not applicable as melting point > 1250 °C
(l) Vapour density: Not applicable as melting point > 1250 °C
(m) Relative density: 3,1 g/ $cm^3$; Apparent density (ES): 1,3 g/$cm^3$
(n) Solubility(ies) in water (T = 20 °C): low (0.1-1.5 g/l)
(o) Partition coefficient: n-octanol/water: Not applicable (inorganic substance)
(p) Auto-ignition temperature: Not applicable (no pyrophoricity – no

organo-metallic, organo- malloid or organo-phosphine bindings or of their derivatives, and no other pyrophoric constituent in the composition)

(q) Decomposition temperature: Not applicable

(r) Viscosity: Not applicable as not a liquid

(s) Explosive properties: Not applicable as not explosive or pyrotechnic as it is not in itself capable by chemical reaction of producing gas at such temperature and pressure and at such a speed as to cause damage to the surroundings. It is not capable of a self-sustaining exothermic chemical reaction.

(t) Oxidising properties: Not applicable as does not cause or contribute to the combustion of other materials.

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| 9.2. | **Other information** | Not applicable. |

## SECTION 10: Stability and reactivity

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|---|---|---|
| 10.1. | **Reactivity** | When mixed with water, cement hardens into a stable mass that is not reactive in normal environments. |
| 10.2. | **Chemical stability** | Cement is stable as long as it is properly stored (see Section 7). It should be kept in a dry place. Contact with acids and ammonium salts should be avoided. Wet cement is alkaline and incompatible with acids and with ammonium salts. |
| 10.3. | **Possibility of hazardous reactions** | Does not cause hazardous reactions. |
| 10.4. | **Conditions to avoid** | Damp conditions during storage may cause lump formation and loss of product quality. |
| 10.5. | **Incompatible materials** | Acids, ammonium salts. |
| 10.6. | **Hazardous decomposition products** | Cement does not decompose into any hazardous products. |

## SECTION 11: Toxicological information

11.1. **Information on toxicological effects**

| Hazard class | Cat. | Effect |
|---|---|---|
| Acute toxicity - dermal | - | In aqueous media the soluble fraction of the product is mainly composed of aluminium hydroxide, depending on pH, and calcium hydroxide. Based on literature and since the product has no systemic toxicity at the maximum dose by oral route, it is reasonably assumed that the dermal route is of no concern for acute systemic toxicity. |
| Acute toxicity- inhalation | - | In aqueous media the soluble fraction of the product is mainly composed of aluminium hydroxide, depending on pH, and calcium hydroxide. Based on literature and since the product has no systemic toxicity at the maximum dose by oral route, it is reasonably assumed that the dermal route is of no concern for acute systemic toxicity. |
| Acute toxicity - oral | - | LD 50 > 2000 mg/kg.<br>Based on test data (OECD 423) *on a similar substance*, the classification criteria are not met. |
| Skin corrosion/ irritation | - | Based on test data (OECD 404) *on a similar substance*, the classification criteria are not met. |
| Serious eye damage/irritation | - | Based on test data (OECD 405) *on a similar substance*, the classification criteria are not met. |
| Skin sensitisation | - | Based on test data (OECD 406) *on a similar substance*, the classification criteria are not met |
| Respiratory sensitisation | - | Data lacking on ACC. By read across with aluminium hydroxide, the product is not considered a sensitising substance to the respiratory system. |
| Germ cell mutagenicity | - | Data lacking on ACC and on aluminium hydroxide. By read across with cement and cement types, the product is not considered mutagenic. |
| Carcinogenicity | - | Data lacking on ACC and on aluminium hydroxide. By read across with cement and cement types, the product is not considered carcinogenic. |
| Reproductive toxicity; | - | No evidence from human experience.<br>By read across with aluminium hydroxide, the product is not considered reprotoxic. |
| STOT-single exposure | - | Aluminous cement dust may irritate the throat and respiratory tract. Coughing, sneezing, and shortness of breath may occur following exposures in excess of occupational exposure limits.<br>Overall, the pattern of evidence clearly |

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| | | indicates that occupational exposure to cement dust has produced deficits in respiratory function. However, evidence available at the present time is insufficient to establish with any confidence the dose-response relationship for these effects. |
| STOT-repeated exposure | - | Studies which have been made on various animal species (rats, rabbits, chickens, pigs) where concentrations of up to 5% of aluminous cement was administered into their diet – they have shown that it does not cause adverse effect on their life and its length. The mean calculated daily dose was approximately 130 mg/kg of body weight. |
| Aspiration hazard | - | Not applicable. |

Medical conditions aggravated by exposure:
Aluminous cement dust may aggravate existing respiratory system diseases and/or medical conditions such as emphysema or asthma and/or existing skin and/or eye conditions.

| | | |
|---|---|---|
| 11.2 | **Information about other threats** | There is no information about endocrine disruptors. |

## SECTION 12: Ecological information

| | | |
|---|---|---|
| 12.1. | **Toxicity** | The only chemical compound present in water is aluminium hydroxide. By read across with aluminium hydroxide, the product is not hazardous to the environment. |
| 12.2. | **Persistence and degradability** | Not relevant as cement is an inorganic material. After hydration it presents no toxicity risks. |
| 12.3. | **Bioaccumulative potential** | Not relevant as cement is an inorganic material. After hydration it presents no toxicity risks. |
| 12.4. | **Mobility in soil** | Not relevant as cement is an inorganic material. After hydration it presents no toxicity risks. |
| 12.5. | **Results of PBT and vivo assessment** | Not relevant as cement is an inorganic material. After hydration it presents no toxicity risks. |
| 12.6 | **Endocrine disrupting properties** | No data available |
| 12.7. | **Other adverse effects** | N/A |

## SECTION 13: Disposal considerations

| | | |
|---|---|---|
| 13.1. | **Waste treatment methods** | Do not store next to irrigation systems or ground waters.<br><br>**Product – unused dry residue**<br>Collect while keeping it dry. Use “dry” cleaning methods, such as vacuuming and vacuum extracting (portable industrial units equipped with highly-efficient particle filters (HEPA filters)) or equivalent methods which do not disperse substances in the air. Do not use compressed air.<br>Label containers. Possible use without exceeding the standards relating to dust. Storage after hardening with water acc. to point Product – after mixing with water.<br><br>**Product – semi-fluid**<br>Allow the product to bind, avoid discharging it to the sewerage system, drainage system, reservoirs and watercourses.<br>Storage acc. to point Product – after mixing with water. |

**Product – after mixing with water, bonded**
Store the bonded product as concrete rubble. Concrete waste is not dangerous in relation to reactivity.

## SECTION 14: Transport information

| | | |
|---|---|---|
| 14.1. | **UN number** | N/A |
| 14.2. | **UN proper shipping name** | N/A |
| 14.3. | **Transport hazard class(es)** | N/A |
| 14.4. | **Packing group** | N/A |
| 14.5. | **Environmental hazards** | N/A |
| 14.6. | **Special precautions for user** | N/A |
| 14.7. | **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | N/A |

## SECTION 15: Regulatory information

| | | |
|---|---|---|
| 15.1. | **Safety, health and environmental regulations/legislation specific for the substance or mixture** | Cements GÓRKAL 40, GÓRKAL 40M, GÓRKAL 50 are **exempt from registration** (Art. 2.7 (b) and Annex V.10 of REACH).<br><br>Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency<br><br>Commission Regulation (EC) No. 987/2008 of 8 October 2008 amending Regulation (EC) No. 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as regards Annexes IV and V<br><br>Regulation (EC) No. 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures |
| 15.2. | **Chemical safety assessment** | No chemical safety assessment has been carried out. |

## SECTION 16: Other information

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| 16.1. | **Indication of changes** | The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the relevant regulations. |
| 16.2. | **Abbreviations and acronyms** | PBT Persistent, bioaccumulative and toxic<br>vPvB Very persistent, very bioaccumulative<br>DNEL Derived no-effect level<br>PNEC Predicted no-effect concentration<br>SDS Safety Data sheet<br>STOT Specific Target Organ Toxicity<br>EINECS European Inventory of Existing Commercial chemical Substances |

CAS Chemical Abstracts Service (CAS number)
HEPA Type of high efficiency air filter
REACH Registration, Evaluation and Authorisation of Chemicals (REACH Regulation)

| | | |
|---|---|---|
| 16.3 | **Training advice** | The employer must ensure that workers have read, understood and apply the requirements of this SDS. |
| 16.4. | **Literature references and sources of data** | 1. Cement and Concrete Chemistry – Wiesław Kurdowski<br>2. Lea's Chemistry of Cement and Concrete – Peter C. Hewlett.<br>3. Calcium Aluminate Cements - Proceedings of the Centenary Conference 2008 – Charles Fentiman, Raman Mangabhai, Karen Scrivener.<br>4. A.M. Neville – Properties of Concrete<br>5. C.M. George – Industrial Aluminous Cements |
| 16.5. | **Disclaimer** | The information on this data sheet reflects the currently available knowledge and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product, including the use of the product in combination with any other product or any other process, is the responsibility of the user.<br>It is implicit that the user is responsible for determining appropriate safety measures and for applying the legislation covering his/her own activities.<br><br>END |