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

1.1 Product identifier

Product name	mRef Cem
Product reference	Ceramic filler
CAS No.	None

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

Main use category:	For research use only, not for human or veterinary use
Industrial/Professional use spec:	For professional use only
Function or use category:	Research & Development Sample

1.3 Details of the supplier of the safety data sheet

Supplier	The Centre for Process Innovation (CPI) The Coxon Building John Walker Road NETPark Sedgefield County Durham TS21 3FE, UK.
Telephone No.	+44 (0)1740 625 734
Email	mona.gayle-jinadu@uk-cpi.com

1.4 Emergency telephone number

Emergency number:	+44 1740 625 734 (Office hours for this number are 8:30am to 5:00pm, an answerphone service operates outside these hours).

SECTION 2: Hazards Identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008
The product is not classified, according to the GB CLP regulation.

Physical hazards	Not Classified
Health hazards	Not Classified
Environmental hazards	Not Classified

2.2 Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Avoid dust inhalation and direct skin contact with the dust. Wash hands thoroughly before eating or smoking. Wash exposed skin at the end of the work shift. Respiratory protection: use an appropriate NIOSH approved respirator if airborne dust concentrations exceed the appropriate workplace exposure limit.

SECTION 3: Composition/information on ingredients

3.1 Substance

Not applicable

3.2 Mixtures

Hazardous ingredients according to Regulation (EC) No 1272/2008

Name	Product Identifier	wt %	Classification
Magnesium Oxide	CAS No. 1309-48-4 EC No. 215-171-9	20-30	Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.
Graphite	CAS No. 7782-42-5 EC No. 231-955-3	2.5-5	Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.
Spinel	CAS No. 1302-67-6 EC No. 215-105-9	5-10	Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.
Calcium carbonate	CAS No. 471-34-1 EC No. 207-439-9	20-30	Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.
Calcium Silicate	CAS No. 1344-95-2 EC No. 215-710-8	20 30	Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.
Fumed silica	CAS No. 69012-64-2 EC No. 273-761-1	2.5-5	Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.
Calcium sulphate	CAS No. 7778-18-9 EC No. 231-900-3	1.5-2.5	Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information — Get medical advice/attention if you feel unwell.

Inhalation — In case of inhalation during work operations remove to ventilated area. Consult a doctor.

Ingestion — After swallowing: immediately make victim drink water (two glasses at most). Consult a doctor.

Skin contact — In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

Eye contact — If particles comes into contact with eyes, treatment for mechanical irritation or injury may be required, rinse with plenty of water; in case of ongoing discomfort consult an ophthalmologist. Do not wear contact lenses when handling this material.

ACUTE

Swallowed — Non-toxic. No known detrimental effect from accident ingestion as may occur during normal handling. Ingestion of large amounts may cause irritation to the gastro-intestinal system due to abrasiveness.

Inhaled — Mainly regarded as nuisance dust but may be irritating if inhaled at high concentrations. May cause coughing and/or sneezing.

Skin — Low hazard.

Eye — Solid and dust can be moderately irritating due to abrasiveness.

CHRONIC

Silica — Crystalline silica is a known cause of lung fibrosis (silicosis). It has also been classified as a human carcinogen. Refractory waste may contain small amounts of respirable free quartz and precautions should be taken to avoid inhaling the dust.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available

Notes for the doctor Treat symptomatically. No specific recommendations

SECTION 5: Fire fighting measures

5.1 Extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products No data available

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment, and emergency procedures

Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all circumstances. Avoid substance contact. Ensure adequate ventilation.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and material for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Work under hood. Do not inhale mixture in the case of operations generating dust, like grinding, crushing and milling.

Wear gloves and suitable clothing to avoid skin contact.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store at room temperature. Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Component	CAS No.	Value	Control parameters	Basis
Magnesium Oxide	1309-48-4	TWA	10mg/m^3 Inhalable dust 4mg/m^3 Respirable dust	UK. EH40 WEL – Workplace Exposure Limits
Amorphous silica fume	69012-64-2	TWA	6 mg/m^3 Inhalable dust 2.4 mg/m^3 Respirable dust	UK. EH40 WEL – Workplace Exposure Limits
Silicic acid, calcium salt	1344-95-2	TWA	10 mg/m^3 inhalable dust 4 mg/m^3 Respirable dust	UK. EH40 WEL – Workplace Exposure Limits

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Where engineering and handling controls are not sufficient to minimise exposure to total dust and to respirable crystalline silica, personal respiratory protection may be required. The type of respirator depends on dust levels and exposure time. For low level dust a P1 or P2 mask is sufficient. When dust approaches the WEL limits then a more efficient cartridge type or powered respirator should be used.

Protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin Protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. The selection of gloves for a specific activity must be based on the material's properties and on possible permeation and degradation that may occur under the circumstances of use.

Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body Protection
Choose body protection in relation to its type, to the concentration and amount, of dangerous substances, and to the specific workplace.

Respiratory Protection
In case dust is released respiratory protection must be used to prevent any irritation or if the general level exceeds the

recommended occupational exposure limit.

Ventilation requirements will depend on handling methods and the amounts in use but should be sufficient to maintain dust levels below exposure limits.

Environmental exposure controls
Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information and basic physical and chemical properties

Physical state	Dusty Solid
Colour	Grey
pH	No data available
Melting point	2802°C
Freezing point	No data available
Boiling point	No data available
Flash point	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	No data available
Vapour pressure	No data available
Relative vapour density at 20°C	No data available
Density	No data available
Relative density	1.5
Solubility	No data available
Log Pow	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	No data available
Explosive properties	No data available
Oxidising properties	No data available
Explosive limits	No data available

9.2 Other information

Molecular weight	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Reactivity	No data available

10.2 Chemical stability

Stability	Stable under recommended storage conditions

10.3 Possibility of hazardous reactions

Possibility of hazardous reactions	No data available.

10.4 Conditions to avoid

Conditions to avoid	No data available.

10.5 Incompatible materials

Materials to avoid	No data available.

10.6 Hazardous decomposition products

Hazardous decomposition products	No data available.

SECTION 11: Toxicological information

Long Term Effects of Inhalation	Long term inhalation of respirable silica dust at levels over the WEL guidelines carries the risk of causing serious and irreversible lung disease such as bronchitis and silicosis.

SECTION 12: Ecological information

Very low risk of environmental damage. Unlikely to contaminate waterways or food chains.

SECTION 13: Disposal considerations

General information	Disposal must be made according to official regulation. Must not be disposed together with household garbage. DO not allow product to reach sewage system.
Disposal methods	Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

14.1 UN number

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID)

14.2 UN proper shipping name

Not classified for transportation.

14.3 Transport hazard class(es)

No transport warning sign required.

14.4 Packing Group

Not classified for transportation.

14.5 Environmental hazards

No

14.6 Special precautions for user

Not classified for transportation.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 453/2010.

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

EU legislation	No data available

15.2 Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Training advice	Only trained personnel should use this material.
Issued by	Mona Gayle-Jinadu
MSDS No.	NFC-MSDS-094
Revision date	30/05/2024
Revision	1

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