



Molten Metal Systems

# Safety Data Sheet

(Information provided in this SDS has been prepared by competent and appropriately qualified and trained persons in accordance with The Morgan Crucible Company plc compliance procedures. It meets the requirements of the following standards and regulations: American National Standard ANSI Z400.1-2004, Australia National Code of Practice NOHSC:2011(2003), European Council Regulation (EC) 1907/2006 Annex II, United Nations Globally Harmonized System for Classification and Labelling of Chemicals Annex 4 (2005), and USA OSHA Hazard Communication Standard.)

SDS No: B4 Salpack Products - Phosphate-based preparations	Date of First Issue: 31/01/2005 Date of Last Revision: 04/02/2010
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**Section 1 – Products and Suppliers**

Identification of the Product: MORCEM 2, MORCEM 3, MORCAST 2, MORCAST 3

Use of the Product: Two-component preparation used as a cement or castable in the holding, melting & general handling & treatment of metals for casting & other metal treatment processes

Suppliers and emergency contact information:

Morgan Molten Metal Systems GmbH	Morganite Crucible Inc	Morganite Crucible (India) Ltd	Morganite Brasil Ltd	Diamond Crucible Co Ltd	Morgan Molten Metal Systems (Suzhou) Co. Ltd.
Noltinastrasse 29	22 North Plains	Works B-11, MIDC	Av do Taboão, 3265	212-C, GIDC	No. 108, Tongsheng Rd Shengpu
D-37297	Ind. Estate, Unit 1	Waluj 431 136	São Bernardo do Campo	Mehsana 384 002	Suzhou Industrial Park
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SDS enquiry dedicated email address:

[SDS@morganplc.com](mailto:SDS@morganplc.com)

**Section 2 – Hazard Identification**

**Chronic health effects:** none  
**Short-term exposure effects:** none  
**Physical hazards:** none

**Potential hazards during use;**

Preparations supplied in a dry form may release dust during handling until mixed with water/liquid as per installation and operating instructions

Morcem/Morcast 3 is acidic, splashes may cause irritation to skin and eyes. Avoid release into the drainage system.

Once installed and commissioned, product may release dust if abraded, broken or otherwise damaged.

**Section 3 – Hazardous Components**

**Description:** Morcem 2 & Morcast 2 – SiC-based refractory castable  
 Morcem 3 & Morcast 3 – water-based phosphate solution

**Composition:**

COMPONENT	% by weight	EINECS number	CAS number	Symbol	R Phrases
<b>Morcem/Morcast 2;</b>					
Silicon Carbide	25-50	206-991-8	409-21-2	N/A	N/A
Aluminosilicate	10-25	215-106-4	1302-76-7	N/A	N/A
Silicon	10-25	231-130-8	7440-21-3	N/A	N/A
Refractory Cement	25-50	266-045-5	65997-16-2	N/A	N/A

COMPONENT	% by weight	EINECS number	CAS number	Symbol	R Phrases
<b>Morcem/Morcast 3;</b>					
Aluminium Phosphate	25-50	236-875-2	13530-50-2	Xi	R36/38
Water	50-100	231-791-2	7732-18-5	N/A	N/A

#### Section 4 – First Aid Measures

##### **Inhalation:**

Symptoms of Exposure: Dryness in throat or coughing due to exposure to respirable dust.

First Aid measures: Remove to fresh air, if symptoms persist seek medical attention.

##### **Skin Contact:**

Symptoms of Exposure: Drying of the skin after contact with wet material. Mechanical irritation to skin due to exposure to dust.

First Aid measures: Remove contaminated clothing. Wash area of contact thoroughly with water. Seek medical attention.

##### **Eye Contact:**

Symptoms of Exposure: Mechanical irritation to eyes due to exposure to wet material or dust.

First Aid measures: Wash eyes immediately with large amounts of water. Do not rub eyes. Seek medical attention.

##### **Ingestion:**

Symptoms of Exposure: Possible stomach problems due to ingestion of wet material or dust.

First Aid measures: Seek medical attention.

### Section 5 – Fire-fighting Measures

These products are non-flammable.  
Packaging and surrounding materials may be combustible.  
Use extinguishing agent suitable for packaging and other materials stored nearby.

### Section 6 – Accidental Release Measures

**Personal Precautions:** Keep an eye wash bottle at the place of work. Ensure good ventilation to area, particularly when mixing Morcem/Morcast 2 with Morcem/Morcast 3 as hydrogen gas is generated. Avoid creating airborne dust. Wear personal protective equipment as detailed in section 8.

**Environmental Precautions:** Clean up spillage or broken pieces/dust immediately. Ensure material does not enter drainage system.

**Methods for cleaning up:** Absorb liquid spillage with inert absorbent material. Rinse residue with water. For dry/solid spillage use wet sweeping or vacuuming to clean the work area, do not use compressed air or dry sweeping. If vacuuming, the vacuum cleaner should be equipped with a high efficiency particulate filter.

### Section 7 – Handling and Storage

**Handling:** Take care not to damage packaging to avoid dust generation or liquid spillage. Store bags mouth up and close off when not in use. Keep liquid container sealed when not in use. Take care when dispensing the dry preparations for the purposes of installation and commissioning to minimise dust generation. Take care to avoid damaging the product once installed as this may create dust.

**Storage:** Store in dry conditions away from strong heat sources.

**Specific Use:** For safe & efficient use of the product, working practices must comply with the recommendations described in the relevant product datasheet, available from the manufacturer.

## Section 8 – Exposure Controls and Personal Protection

**Exposure limits and guidelines (many jurisdictions have exposure limits and control guidelines for substances not listed elsewhere as hazardous - consult and comply with local regulations where they exist):**

**Exposure Limit Values:**

Industrial hygiene standards and occupational exposure limits vary between countries and local jurisdictions. Check which exposure limits apply to your facility. In the absence of exposure information, or if no regulatory dust or other standards apply, the manufacturer recommends the control of respirable dust exposures to the UK limit for nuisance dusts of 4 mg/m<sup>3</sup>/8hour time weighted average (TWA) or less.

**Exposure Controls:**

Review your working practices in order to identify potential sources of dust exposure. If necessary conduct personal air monitoring. Where technically and economically feasible, use engineering controls. These may include local exhaust ventilation & equipment to remove airborne dust or materials.

**Personal Protective Equipment:**

**Respiratory Protection:**

Wear approved respirator when wrecking out used product if this may create dust concentrations above the exposure limit.

**Hand Protection:**

Wear acid-resistant protective gloves.

**Eye Protection:**

Wear safety glasses with side shields or other appropriate forms of eye protection.

**Skin Protection:**

Wear safety shoes and appropriate work overalls when handling the product prior to use. Wear foundry grade protective garment and safety shoes when using the product.

## Section 9 – Physical and Chemical Properties

**Appearance:**

Morcem/Morcast 2 – Black or Grey Powder,  
Morcem/Morcast 3 – Clear liquid

**Odour:**

None

**pH:**

Morcem/Morcast 2 – Not applicable

<b>Melting/Boiling Point:</b>	Morcem/Morcast 3 – 2.3 @ 20oC in 10g/l H <sub>2</sub> O Morcem/Morcast 2 – Not applicable Morcem/Morcast 3 – 125°C
<b>Flash Point:</b>	Non-flammable
<b>Density Range:</b>	Morcem/Morcast 2 – 1.0-1.7 gcm <sup>-3</sup> as powder, 1.6-2.5 gcm <sup>-3</sup> installed Morcem/Morcast 3 – 1.5 gcm <sup>-3</sup> as liquid
<b>Water Solubility:</b>	Morcem/Morcast 2 – Low solubility in water Morcem/Morcast 3 – Unlimited miscibility

## Section 10 – Stability and Reactivity

<b>Chemical Stability:</b>	Stable under conditions of normal use
<b>Conditions to Avoid:</b>	Rapid heating of damp material from Incomplete or inadequate dry out during commissioning
<b>Materials to Avoid:</b>	None
<b>Hazardous Decomposition Products:</b>	When using fluxes & other metallurgical treatment chemicals with the product, chemical decomposition of the product is possible. Refer to recommendations from the specific treatment chemical manufacturer.

## Section 11 – Toxicological Information

<b>Inhalation:</b>	No known effect. Dust generated from damaged product may contain small amounts of crystalline silica. Crystalline silica is present as a natural impurity in some of the product components, and may be generated in small quantities within the product during extended use above 900°C. Long term exposure to respirable crystalline silica may cause lung disease, including silicosis, and an increased risk of developing lung cancer.
<b>Skin Contact:</b>	Contact with Morcem/Morcast 3 may cause irritation. Possible mechanical irritant effect of dust generated during installation or from damaged product.

**Eye Contact:** Contact with Morcem/Morcast 3 may cause irritation. Possible mechanical irritant effect of dust generated during installation or from damaged product.

**Ingestion:** No known effect.

## Section 12 – Ecological Information

**Morcem/Morcast 2** & the installed product are inert materials, which remain stable over time. No ecological concerns have been identified or are anticipated.

**Morcem/Morcast 3** is a mobile, non-volatile liquid which in high concentrations may damage aquatic life due to the effects of low pH, so should not be allowed to get into the drainage system.

## Section 13 – Disposal Considerations

Check local, regional, state or provincial regulations to identify all applicable disposal requirements.

Contamination during use or chemical additions to the product may alter the disposal requirements.

## Section 14 – Transport Information

Not classified as dangerous goods under IMDG (sea), ADR (road), RID (rail), or ICAO/IATA (air) regulations. Consult local, regional, state or provincial regulations.

## Section 15 – Regulatory Information

Morcem/Morcast 2                      There are no known local, national or international regulations or restrictions that apply to the manufacture, use or disposal of these products.

Morcem/Morcast 3                      Risk Phrases;                      R36/38 – irritating to eyes & skin,  
Safety Advice Phrases; S24/25 – avoid contact with skin & eyes, S26 – in case of contact with eyes rinse immediately with plenty of water and seek medical advice, S45 – in case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Consult local authorities if additional information is required.

### **Section 16 – Other Information**

For best performance & recommended handling & storage practices refer to the relevant product datasheet, available from the manufacturer.

**Reasonable care has been taken in the preparation of information contained in this Safety Data Sheet, and the information is provided in good faith. Morgan Carbon Division assumes no responsibility as to the accuracy of information drawn from the stated sources. No warranty, expressed or implied, is made.**