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MATERIAL DATA SAFETY SHEET

MATERIAL SAFETY DATA SHEET (MSDS)

FOR PORTLAND CEMENT and BLENDED PORTLAND CEMENT

January 2024

Section 1 IDENTIFICATION

Product names

Portland Cement (CEM I 52.5N)

Composite Cement (CEM II A-M 42.5R)

Masonry Cement (MC 22.5X)

MSDS information
This MSDS was updated in January 2024.

Chemical family
Calcium salts. Calcium silicate salts and other calcium salts containing iron and aluminium make up most of this product.

Chemical name and synonyms
Portland **cement** is also known as hydraulic **cement**.

Formula: These products consist of finely ground Portland **cement** clinker mixed with a small amount of calcium sulphate (gypsum), Limestone and Fly-Ash.

Supplier/Manufacturer:
Mamba Cement Company (RF) (PTY) LTD
Koedoeskop, Limpopo.
South Africa.

Emergency contact information:
Telephone number: 011 568 2002
E-Mail: orders@mambacement.com

Section 2 COMPONENTS

CEM I 52.5N

	Concentration
Portland Cement	90 - 95%
Calcium Sulphate	5-6%

CEM II A-M 42.5R

MC 22.5X

	Concentration
Portland Cement	55 - 60%
Additives	35 - 40%
Calcium Sulphate	5-6%

Trace constituents

Portland **cement** is made from materials mined from the earth and is processed using heat provided by fossil fuels. Trace amounts of naturally occurring; potentially harmful chemicals might be detected during chemical analysis. For example, Portland **cement** may contain up to 0.75% insoluble residue, some of which may be free crystalline silica. Other trace constituents may include calcium oxide (also known as lime or quick lime), magnesium oxide, potassium sulphate, sodium sulphate, chromium compounds, and nickel compounds.

Section 3 HAZARD IDENTIFICATION

Emergency Overview

Portland **cement** is a light grey powder that poses little immediate hazard. A single short-term exposure to the dry powder is not likely to cause serious harm. However, exposure of sufficient duration to wet Portland **cement** can cause serious, potentially irreversible tissue (skin or eye) destruction in the form of chemical (caustic) burns. The same type of tissue destruction can occur if wet or moist areas of the body are exposed for sufficient duration to dry Portland **cement**.

Potential Health Effects:
Relevant Routes of Exposure: Eye contact, skin contact, inhalation, and ingestion

Effects resulting from eye contact: Exposure to airborne dust may cause immediate or delayed irritation or inflammation. Eye contact by larger amounts of dry powder or splashes of wet Portland **cement** may cause effects ranging from moderate eye irritation to chemical burns and blindness. Calcium oxide may cause acute corneal damage if sufficient amounts contact the cornea. Such exposures require immediate first aid (see Section 4) and medical attention to prevent significant damage to the eye.

Effects resulting from skin contact: Discomfort or pain cannot be relied upon to alert a person to a hazardous skin exposure. Consequently, the only effective means of avoiding skin injury or illness involves minimising skin contact, particularly contact with wet **cement**. Exposed persons may not feel discomfort until hours after the exposure has ended and significant injury has occurred. Exposure to dry Portland **cement** may cause drying of the skin with consequent mild irritation or more significant effects attributable to aggravation of other conditions. Dry portland **cement** contacting wet skin or exposure to moist or wet portland **cement** may cause more severe skin effects including thickening, cracking or fissuring of the skin. Prolonged exposure can cause severe skin damage in the form of (alkali)chemical burns and could cause "contact dermatitis". Persons already sensitised may react to their first contact with the product. Other persons may first experience this effect after years of contact with Portland **cement** products.

Effects resulting from inhalation: Portland **cement** may contain trace amounts of free crystalline silica. Prolonged exposure to respirable free crystalline silica can aggravate other lung conditions and cause silicosis, a disabling and potentially fatal lung disease. Iron oxide contained in Fly Ash, upon chronic exposure, may result in iron pigmentation of the lungs, siderosis, and benign pneumoconiosis. (Also see "Carcinogenic potential" below) Exposure to portland may cause irritation to the moist mucous membranes of the nose, throat, and upper respiratory system. It may also leave unpleasant deposits in the nose.

Effects resulting from ingestion: Although small quantities of dust are not known to be harmful, ill effects are possible if larger quantities are consumed. Portland cement should not be eaten.

Carcinogenic potential: Portland cement is not being listed as a carcinogen. It may, however, contain trace amounts of substances listed as carcinogens. Crystalline silica, a potential trace level contaminant in Portland **cement**, is now classified by IARC as a known human carcinogen (Group 1)

Medical conditions, which may be aggravated by inhalation or dermal exposure: Pre-existing upper respiratory and lung diseases.

Section 4 - FIRST AID

Eyes:

Immediately flush eyes thoroughly with water. Continue flushing eye for at least 15 minutes, including under lids, to remove all particles. Call physician immediately.

Skin:

Wash skin with cool water and pH-neutral soap or mild detergent. Seek medical treatment in all cases of prolonged exposure to wet **cement**, **cement** mixtures, liquids from fresh **cement** products, or prolonged wet skin exposure to dry **cement.**

Inhalation of Airborne Dust:

Remove to fresh air. Seek medical help if coughing and other symptoms do not subside. ("Inhalation" of gross amounts of Portland **cement** requires immediate medical attention)

Ingestion:

Do not induce vomiting. If conscious, have the victim drink plenty of water and call physician immediately.

Section 5 - FIRE & EXPLOSION DATA

Flash point [*provide method used*]	None
Lower Explosion Limit	None
Upper Explosion Limit	None
Auto ignition temperature	Not combustible
Extinguishing media	Not combustible
Special fire fighting procedures	None.
Hazardous combustion products	None
Unusual fire and explosion hazards	None

Section 6 - ACCIDENTAL RELEASE MEASURES

Collect dry **material** using a scoop. Avoid actions that cause dust to become airborne. Avoid inhalation of dust and contact with skin. Wear appropriate personal protective equipment as described in Section 8.

Scrape up wet **material** and place in an appropriate container. Allow the **material** to "dry" before disposal. Do not attempt to wash Portland **cement** down drains.

Dispose of waste **material** according to local, state and

federal regulations.

Section 7 -HANDLING AND STORAGE

Keep Portland **cement** dry until used. Normal temperatures and pressures do not affect the **material**. Promptly remove dusty clothing or clothing which is wet with **cement** fluids and launder before re-use. Wash thoroughly after exposure to dust or wet mixtures or fluids.

Hazardous materials description/proper shipping name Portland cement is not hazardous under National Road Traffic Act.	
Hazard class	Not applicable.
Identification number	Not applicable.
Required label text	Not applicable.
Hazardous substances/reportable quantities (RQ)	Not applicable.

Section 8 EXPOSURE CONTROL/ PERSONAL PROTECTION

Skin protection

Prevention is essential to avoiding potentially severe skin injury. Avoid contact with unhardened Portland **cement**. If contact occurs, promptly wash affected area with soap and water. Where prolonged exposure to un-hardened Portland **cement** products might occur, wear impervious clothing and gloves to eliminate skin contact. Where required, wear sturdy boots that are impervious to water to eliminate foot and ankle exposure.

Do not rely on barrier creams; barrier creams should not be used in place of gloves.

Periodically wash areas contacted by dry Portland **cement** or by wet **cement** or concrete fluids with a pH neutral soap. Wash again
after task completed. If irritation occurs, immediately wash the affected area and seek treatment. If clothing becomes saturated with wet concrete, it should be removed and replaced with clean dry clothing.

Respiratory protection

Avoid actions that cause dust to become airborne. Use local and general ventilation to control exposures below applicable exposure limits.

Use NIOSH/MHSA- approved (under 30 CFR 11) or NIOSH-approved (under 42 CFR 84) respirators in poorly ventilated areas, if an applicable exposure limit is exceeded, or when dust causes discomfort or irritation.

Ventilation

Use local exhaust or general dilution ventilation to control exposure within applicable limits.

Eye protection

Where potentially subject to splashes or puffs of **cement**, wear **safety** glasses with side shields or goggles. In extremely dusty environments and unpredictable environments, wear un-vented or indirectly vented goggles to avoid eye irritation or injury. Contact lenses should not be worn when working with Portland **cement** or fresh **cement** products.

Section 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Grey powder
Odour	No distinct odour
Physical state	Solid (powder)
Solubility in water	Slightly soluble (0.1 to 1.0%)
Vapour pressure	Not applicable
Vapour density	Not applicable
Boiling point	Not applicable (i.e., >1000C)
Melting point	Not applicable
Specific gravity (H_2O = 1.0)	3.0
Evaporation rate	Not applicable

Section 10 STABILITY AND REACTIVITY

Stability	Stable
Conditions to avoid	Unintentional contact with water.
Incompatibility	Wet portland cement is alkaline. As such it is incompatible with acids, ammonium salts and phosphorous. Fly Ash will react violently with bromine trifluoride, fluorine,

	hydrogen fluoride, and phosphorus.
Hazardous decomposition	Will not spontaneously occur. Adding water produces (caustic) calcium hydroxide.
Hazardous polymerisation	Will not occur.

Section 11 TOXICOLOGICAL INFORMATION

Cement dust can irritate the eyes and may cause corneal damage.
Skin contact with cement may cause dermatitis in some instances.
Swallowing large amounts may cause irritation to the gastrointestinal tract.

Section 12 ECOLOGICAL INFORMATION

Product being non-toxic in small quantities present in water.
With large quantities in static water could cause death in aquatic life due to increase of water pH values.

The Cement dry powder becomes air-entrained and making it mobile.

Section 13 DISPOSAL

Dispose of waste **material** according to local, provincial and national regulations. (Since Portland **cement** is stable, uncontaminated **material** may be saved for future use.

Dispose of bags in an approved landfill or incinerator.

Section 14 TRANSPORTATION DATA

Hazardous materials description/proper shipping name Portland cement is not hazardous under National Road Traffic Act.
Act 93 of 1996 regulations and SANS 10228.

Hazard class	Not applicable.
Identification number	Not applicable.
Required label text	Not applicable.
Hazardous substances/reportable quantities (RQ)	Not applicable.

Section 15 OTHER REGULATORY INFORMATION

The OHS Ac, 85 of 1993 Reg.1179 covers the status of Portland Cement.
Recommended exposure limits are for dust concentrations only.

Section 16 OTHER INFORMATION

Prepared by
Mamba Cement Company**.**
Approved by
Mamba Cement Company
Approval date or Revision date: January 2023

Other important information

Portland **cement** should only be used by knowledgeable persons. A key to using the product safely, requires the user to recognise that portand **cement** reacts chemically with water, and that some of the intermediate products of this reaction (that is, those present while a portland **cement** product is "setting") pose a far more severe hazard than does portland **cement** itself.
While the information provided in this **material safety data sheet** is believed to provide a useful summary of the hazards of Portland **cement** as it is commonly used, the **sheet** cannot anticipate and provide all of the information that may be needed in every situation.
Inexperienced product users should obtain proper training before using this product.

SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANT ABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY MAMBA Cement**,** except that the product shall conform to contracted specifications. The information provided herein, is believed by MAMBA Cement.

Cement, to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information