



## Metacon Metakaolin

KP111/428 Veli, Thiruvananthapuram – 695021, Kerala, India  
Phone 91 471 274 1133 | Fax 91 471 274 2233

### Technical Data Sheet

#### DESCRIPTION:

**METACON METAKAOLIN** is a high reactivity, silica based pozzolona which complies with the requirements of ASTM C 618N. It is manufactured by the processing of specially selected pozzolanic ingredients under controlled conditions. It reacts with free lime produced during the hydration process of cement to form additional cementitious products.

#### BENEFITS:

- Economic and superior manufactured alternative to Microsilica
- Reduces permeability and the penetration of chloride ions.
- Achieves very low RCP results
- Increases chemical resistance
- Prevents of alkali-silica reactivity
- Reduces efflorescence
- Reduces drying shrinkage
- Improves strength and toughness
- Improves colour and appearance
- Can be used in conjunction with white cement without affecting colour of finished product.

#### RECOMMENDED USAGE:

- In pre-cast and architectural elements
- In high performance concrete
- In concrete for marine structures
- In concrete for use in aggressive environments

**METACON METAKAOLIN** can be used as either an alternative to microsilica or as a supplemental cementitious material depending on the desired properties of the hardened concrete mix.

The normal usage levels are as follows:

3-5 % for use in triple blend mixes

5-8 % optimum replacement for achieving low RCP, water penetration and absorption results.

8-20 % of cement content – for optimum chemical resistance and efflorescence control

#### PHYSICAL ANALYSIS:

Appearance:	Off-white
Loss on Ignition:	0.5 – 1.5%
Lime Reactivity (Chapelle Test):	740 – 1,000 mg/gm
pH (10% solids):	4.0 – 5.0
Specific Gravity:	2.6
Bulk Density, kg/ltr:	0.4 – 0.5
Blaine value (cm <sup>2</sup> /g):	22,000 – 25,000

#### CHEMICAL ANALYSIS (Mass %):

Characteristics	Results
SiO <sub>2</sub>	52.0 – 54.0
Al <sub>2</sub> O <sub>3</sub>	44.0 – 46.0
Fe <sub>2</sub> O <sub>3</sub>	0.60 – 1.20
TiO <sub>2</sub> (max)	0.65
CaO (max)	0.09
MgO (max)	0.03
Na <sub>2</sub> O (max)	0.10
K <sub>2</sub> O (max)	0.03

#### PACKAGING:

**METACON METAKAOLIN** is supplied in 25 kg and 650 kg jumbo bags and bulk.

#### STORAGE:

When supplied in bags store in original closed bags and in a dry ventilated area. When supplied in bulk, store in closed bulk silos.

**METACON METAKAOLIN** has a shelf life of not less than 12 months when stored correctly.

#### TECHNICAL ADVICE:

The Technical Department is available to assist you in the correct use of our products and its resources are at your disposal entirely without obligation.

#### SAFETY PRECAUTIONS:

Refer to the Material Safety Data Sheet (MSDS) for Metacon Metakaolin.



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## ABOUT THE COMPANY

English Indian Clays Limited (EICL) is part of USD 1 billion THAPAR GROUP of companies, one of the largest business houses in India having varied interests in Paper, Chemicals, Textiles, Engineering, etc. The company was established in 1965 by ECC Plc as a JV with a local group but has been subsequently become an independent unit in late 80's. The company is an ISO 9002 certified company since 1995 and the certification has been upgraded to **ISO 9001 : 2000**.

### The Capacity

EICL is the largest producer of China clay (Kaolin) and Calcined Clay in the region with a 200,000 Tons per annum capacity. The company has two production units in Trivandrum, Kerala, South India.

- Calcined Clay - 25000 (Unit I), 5000 (Unit II).
- Hydrous Clay -120000 (Unit I), 50000 (Unit II).

### The Mines

EICL clay deposits are considered to be among the best in the world with 96% kaolin content. Mining activity is fully mechanized and is done throughout the year. Prospecting and buying of new land is managed by an in-house mining and geology team. The company has a policy of maintaining 25 years minable land stock at any point of time. Mining department undertakes replanting of all mined out land as part of our environmental policy.

### R & D and Application support

EICL R & D is a well-equipped facility that co-ordinates all development work. It is one of the few industry laboratories recognized by Department of Science and Technology, Government of India. Under R&D, we have Application labs which have application specific teams in Paper, Paint, Ceramics, Rubber, Plastic & Concrete, who undertake trials for customers in strict confidentiality to meet customer specific requirements.

### Logistics Support

The major Indian Arabian Sea port of Cochin is only 220 kms from our works. Regular connections to all major ports in the world are available from Cochin. A new port at Tuticorin, managed by Singapore Port Authority has come up in a major way to the East in Bay of Bengal. This port is 200 kms from our works and major shipping lines have started calling here. These two Ports together ensure minimum lead time for our cargo to be shipped out of India to destinations all over the world.

### Packaging Options

EICL products are available in 25 kg bags palletized and shrink-wrapped. We also offer special packing options in 650 kg/1000 kg Jumbo bags and 50 kg bags wherever required.



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## Material Safety Data Sheet

### 1. Identification of the Substance and Company

Product Name	:	METACON METAKAOLIN
Product Application	:	Cementitious systems
Address/Phone No.	:	English Indian Clays Limited P111/428 Veli Thiruvananthapuram – 695021 Kerala, India
Emergency Phone	:	0091 471 2741133

### 2. Composition/Information on Ingredients

Synonyms	:	Refined Kaolin [China Clay]
CAS No.	:	1332-58-7
Symbol	:	None
R-phrases	:	None
S-phrases	:	None

### 3. Hazards Identification

Metacon Metakaolin is classed as Non Hazardous and is unlikely to cause harmful effects when handled and stored as advised. See section 7.

### 4. First Aid Measures

Inhalation	:	Remove exposed person from dusty area. Bring to fresh air.
Skin contact	:	Wash contaminated skin with water and/or a mild detergent.
Eye contact	:	Rinse eyes with water/saline solution. If discomfort persists, obtain medical attention.
Ingestion	:	Not applicable.

### 5. Fire Fighting Measures

Metacon Metakaolin is not combustible and the dust entails no danger of explosion.

Extinguishing Media	:	No applicable
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### 6. Accidental Release Measures

Avoid exposure to dust of Metacon Metakaolin.  
Released material should be collected in suitable containers.



## 7. Handling and storage

Handling	:	Avoid dust generation. See section 8.
Storage	:	Keep in a dry place. When handled pneumatically use standard dust filters on vehicles and silos.

## 8. Exposure Controls/Personal Protection

Occupational exposure controls:

Avoid inhalation of dust. Ensure good dust ventilation during use. Wear a CE-marked respirator according to EN 149 FFP 2S/3S during dust generating operations. Use protective gloves and eye protection. Facilities for eye flushing should be available.

## 9. Physical and Chemical properties

Colour	:	Off white
Odour	:	Odourless
Solubility (water)	:	Insoluble/slightly soluble
Solubility (Organic Solvents)	:	Insoluble/slightly soluble
Specific Gravity	:	2.5 to 2.7 g/cm <sup>3</sup>
Bulk Density (kg/lt) approx	:	0.4 to 0.5
Specific Surface Area (cm <sup>2</sup> /g)	:	22,000 – 25,000

## 10. Toxicological Information

### Acute Effects:

INGESTION	:	Finely divided dust may cause irritation and dehydration of mucous membranes.
INHALATION	:	Finely divided dust may cause irritation and dehydration of mucous membranes.
SKIN CONTACT	:	Finely divided dust may cause irritation and dehydration.
EYE CONTACT	:	Finely divided dust may cause irritation and dehydration

### Chronic Effects:

Inhalation of Metacon Metakaolin is considered to entail minimal risk of pulmonary fibrosis (silicosis). However, chronic obstructive lung disease is suspected following long term exposure (years) for concentrations above recommended occupational exposure limits.

## 11. Disposal Considerations

The material should be recovered for recycling if possible.

This material is not classified as hazardous waste according to Commission Decision 2000/532/EC and 2001/118/EC. Prior to disposal of large quantities of this material advice should be sought from the relevant Waste Regulation Authority.



## 12. Transport Information

UN	-
IMDG/IMO	Not subject to classification
ADR/RID	Not subject to classification
ICAO/IATA	Not subject to classification

## 13. Regulatory Information

Product classification and labeling:

Symbol	:	Not subject to classification
R-Phrases	:	None
S-phrases	:	None

## 14. Other Information

Literature references are available upon application to the manufacturer.

*The provision of this information should not be construed as a recommendation to use this product in violation of any patent rights or in breach of any state or regulation. Users are advised to make their own determination as to the suitability of this information in relation to their particular purposes and specific circumstances. Users should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace and in conjunction with other substances or products.*

**Metacon Metakaolin is marketed in the Gulf Region by:**



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