Product information (provisional)

Metaver™ K

Thermal treated pure kaolin (metakaolin)
pozzolanic hardening admixture for cementitious building materials

Description

Metaver™ K is produced by calcination of concentrated kaolin and is a mostly amorphous aluminosilicate reacting with Portlandite (calcium hydroxide) to build cementitious CSH-phases.

Typical values

Chemical composition (M.-%)

SiO_2	53 - 54
Al_2O_3	41 - 44
Fe_2O_3	< 1,2
K_2O	< 1,3

Physical characteristics

Specific density		2,6	g/cm³
Particle size distribution	d_{50}	6	µm
	d_{90}	17	µm
Colour		grey	
Bulk density		380 - 520	kg/m³

Function

Metaver™ K is mostly composed of calcined kaolinite.

Portland cement develops ca. 25 % calcium hydroxide (free lime) in its hydration. This alkaline by-product is very soluble and is primarily attacked and dissolved in the presence of acids or sulphates.

Metaver™ K special feature is its capacity to bind large amount of free lime in the form of stable CSH-phases. Speed and amount of this reaction may be controlled through chemical and construction adequate methods

In relation to its reactivity Metaver™ K can be qualified as „medium". Together with lime and water the setting will occur in about 4 hours (method Newchem).

Application

Metaver™ K is a pozzolanic mineral additive that may improve many performances of hydraulic cementitious mortars, concrete and analogous products.

Metaver™ K is easily mixed in and gives a soft plastic consistence that is easy to work. Through its particle size distribution, no big increase in water demand is given.

Metaver™ K has shown its advantages in applications where strength, density and resistance are requested.

Metaver™ K is approved for usage in concrete according to NF 18-513.

In the following applications Metaver™ K has been shown to be very useful:

Plasticity	shotcrete, repair mortars, coatings
Stability	self compacting concrete and mortars, selfleveling compounds
Strength	renders based on lime and cement
Lime binding	tile adhesive, coating of water pipes and reservoirs
Resistance	coatings of waste water or see water constructions
Pigmentation	better dispersion in precast or visible concrete
Efflorescence	roofing tiles, facade precast
Durability	reduced alkali silicate reaction

Dosage

5 to 15 % replacement of cement by weight.

Stability

unlimited in dry conditions.

Storage

in protected and dry rooms.

Packaging

in 25 kg bags, big bags of 1250 kg.

The data quoted are determined by standard test methods. As they are based on naturally occurring raw materials that may change with time, we reserve the right to adapt the data if necessary.

NEWCHEM AG

Felsenstrasse 12, CH-8808 Pfäffikon, Switzerland – www.newchem.info

MATERIAL safety data sheet
in compliance with Reg. (EC) Nr.1907/2006, 1272/2008, 453/2010

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

1.1. PRODUCT IDENTIFIER	Substance: Kaolin calcined CAS 92704-41-1 REACH Registration number: Exempted according to Annex V.7. Trade name: **METAVER I, METAVER K, METAVER M, METAVER N, METAVER O** Chemical name/synonyms: metakaolin
1.2. RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST	Building materials Paints and Coatings Adhesives and Sealants Ceramics
1.3 DETAIL OF THE SUPPLIER OF THE SAFETY DATA SHEET	**Newchem AG** Felsenstrasse 12 CH-8808 Pfaeffikon Switzerland Tel. +41 55 420 15 30 Fax: +41 55 420 15 30 www.newchem.info bezard@newchem.org

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW	This product does not meet the criteria for classification as hazardous as defined in the Regulation EC 1272/2008 and in Directive 67/548/EEC. Depending on the type of handling and use (e.g. grinding, drying), airborne respirable crystalline silica (quartz) may be generated. Prolonged and/or massive inhalation of respirable crystalline silica dust may cause lung fibrosis, commonly referred to as silicosis. Principal symptoms of silicosis are cough and breathlessness. Occupational exposure to respirable crystalline silica dust should be monitored and controlled. This product should be handled with care to avoid dust generation. REGULATION EC 1272/2008: No classification CLASSIFICATION EU (67/548/EEC): No classification This product contains less than 1% quartz (respirable) CLASSIFICATION EU (67/548/EEC): No classification
OTHER HAZARDS	This product is an inorganic substance and does not meet the criteria for PBT or vPvB in accordance with Annex XIII of REACH.
EYE	Dust may irritate the eyes mechanically
SKIN CONTACT	Dust may irritate the skin mechanically
INHALATION	Dust may be irritating to respiratory system

INGESTION	No hazard

3. COMPOSITION / INFORMATION ON INGREDIENTS

Calcined kaolin (> 90%)	CAS-Nr.: 92704-41-1, EINECS Nr.: 296-473-8 calcined kaolin is a UVCB substance (Substances of Unknown or Variable composition . . .)
Kaolinite (0 – 10%)	CAS-Nr.: 1332-58-7, EINECS Nr.: 310-194-1
Quartz (<5%) (respirable fraction <1%)	CAS Nr.: 14808-60-7, EINECS Nr.: 238-878-4

4. FIRST-AID MEASURES

EYE	Rinse with copious quantities of water and seek medical attention if irritation persists.
SKIN CONTACT	No special first aid measures necessary. Wash skin with soap and water. Use suitable lotion to moisturize skin.
INHALATION	Movement of the exposed individual from the area to fresh air is recommended
INGESTION	No first aid measure required. Rinse mouth thoroughly. Get medical attention if any discomfort continues.

5. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA	No specific extinguishing media is needed.
UNSUITABLE MEDIA	
SPECIAL FIREFIGHTING PROCEDURES	No specific fire-fighting protection is required.
FIRE & EXPLOSION HAZARDS	
HAZARDOUS COMBUSTION PRODUCTS	Non-combustible. No hazardous thermal decomposition.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK PROCEDURES	Avoid airborne dust generation, wear personal protective equipment in compliance with national legislation. Avoid dry sweeping and use water spraying or vacuum cleaning systems to prevent airborne dust generation. Wear personal protective equipment in compliance with national legislation.

7. HANDLING AND STORAGE

STORAGE	Minimise airborne dust generation and prevent wind dispersal during loading and unloading. Keep containers closed and store packaged products so as to prevent accidental bursting. Store in a dry covered area.
HANDLING / STORAGE	Avoid airborne dust generation. Provide appropriate exhaust ventilation at places where airborne dust is generated. In case of insufficient ventilation, wear suitable respiratory protective equipment. Handle packaged products carefully to prevent accidental bursting.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

8.1. CONTROL PARAMETERS	Follow workplace regulatory exposure limits for all types of airborne dust (e.g. total dust, respirable dust, respirable crystalline silica dust). The OES (Occupational Exposure Limit) for calcined kaolin dust is 2,5 mg/m³ in the UK. For the equivalent limits in other countries, please consult a competent occupational hygienist or the local regulatory authority.
8.2. EXPOSURE CONTROLS	
8.2.1. OCCUPATIONAL EXPOSURE CONTROLS	Minimise airborne dust generation. Use process enclosures, local exhaust ventilation or other engineering controls to keep airborne levels below specified exposure limits. If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne particles below the exposure limit. Apply organizational measures, e.g. by isolating personnel from dusty areas. Remove and wash soiled clothing.

8.2.2. INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT

EYE PROTECTION REQUIREMENTS	Wear safety glasses with side-shields in circumstances where there is a risk of penetrative eye injuries. Contact lenses should not be worn when working with this product.
SKIN PROTECTION	No specific requirement. For hands, see below. Appropriate protection (e.g. protective clothing, barrier cream) is recommended for workers who suffer from Dermatitis or sensitive skin.
WASH REQUIREMENTS	Wash hands at the end of each work session.
RESPIRATORY REQUIREMENTS	In case of prolonged exposure to airborne dust concentrations, wear a respiratory protective equipment that complies with the requirements of European or national legislation.
8.2.3 ENVIRONMENT EXPOSURE CONTROLS:	Avoid wind dispersal

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM	Solid powder
COLOUR	Off-white to reddish
ODOUR	Odourless
pH (100 g/l water at 20°C)	8-10
BOILING POINT	
MELTING - / FREEZING POINT	No available
SOLUTILITY IN WATER	Negligible (<10-2 g/L)
VISCOSITY	Not relevant
BULK DENSITY	About 400 kg/m³
EVAPORATION RATE	Not relevant
VAPOUR PRESSURE	Not relevant
LOWER EXPLOSION LIMIT (%)	Not relevant
UPPER EXPLOSION LIMIT (%)	Not relevant
AUTOFLAMMABILITY	Not relevant
FLASH POINT	Not relevant
DUST EXPLOSION CLASS	Not relevant

10. STABILITY AND REACTIVITY

10.1. REACTIVITY	Inert, not reactive
10.2. CHEMICAL STABILITY	Chemically stable.
10.3. POSSIBILITY OF HAZARDOUS REACTIONS	No hazardous reactions
10.4. CONDITIONS TO AVOID	Not relevant
10.5. INCOMPATIBLE MATERIALS	No particular incompatibility
10.6. HAZARDOUS DECOMPOSITION PRODUCTS	Not relevant

11. TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

ACUTE TOXICITY	Based on available data, the classification criteria are not met.
SKIN CORROSION/IRRITATION	As above
SERIOUS EYE DAMAGE/IRRITATION	As above
RESPIRATORY OR SKIN SENSITISATION	As above
GERM CELL MUTAGENECITY	As above
CARCINOGENECITY	As above
REPRODUCTIVE TOXICITY	As above
STOT – Single exposure:	As above
STOT – Repeated exposure:	As above
ASPIRATION HAZARD	As above

12. ECOLOGICAL INFORMATION

12.1. TOXICITY	Not relevant
12.2. PERSISTENCE AND DEGRADIBILITY	Not relevant
12.3 BIOACCUMULATIVE POTENTIAL	Not relevant
12.4 MOBILITY IN SOIL	Negligible
12.5 RESULTS OF PBT AND vPvB ASSESSMENT	Not relevant
12.6 OTHER ADVERSE EFFECTS	No specific adverse effects known. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

13. DISPOSAL CONSIDERATION

WASTE DISPOSAL METHODS	Where possible, recycling is preferable to disposal. Can be disposed of in compliance with local regulations. This product can be disposed of as non-toxic/inactive material in approved landfill sites.
EMPTY CONTAINER WARNINGS	Dust formation from residues in packaging should be avoided and suitable worker protection assured. Store used packaging in enclosed receptacles. Recycling and disposal of packaging should be carried out in compliance with local regulations. The re-use of packaging is not recommended. Recycling and disposal of packaging should be carried out by an authorized waste management company.
EU WASTE NO	

14. TRANSPORT INFORMATION (See also section 9)

14.1. UN NUMBER	Not relevant
14.2. UN PROPER SHIPPING NAME	Not relevant
14.3. TRANSPORT HAZARD CLASS	
IATA CLASSIFICATION	Not classified
IMDG CLASSIFICATION	Not classified
ADR/RID	Not classified
14.4. PACKAGING GROUP	Not relevant
14.5. ENVIRONMENTAL HAZARDS	Not relevant
14.6. SPECIAL PRECAUTIONS FOR USERS	Not relevant
14.7. TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE	Not relevant

15. REGULATORY INFORMATION

15.1. SAFETY, HEALTH AND ENVIRONMENTAL REGULATION /LEGISLATION SPECIFIC FOR THE SUBSTANCE IINTERNATIONAL LEGISLATION/REQUIREMENTS	no specific at the European Community level
15.2 CHEMICAL SAFETY ASSESSMENT	Exempted from REACH Registration in accordance with Annex V.7.

16. OTHER INFORMATION

Indication of the changes made to the previous version of the SDS:
The text was adjusted in compliance with Regulation (EU) No.1272/2008 according to the wording No.453/2010 and harmonized SDS for kaolin prepared by KPC-Europe (Association of European kaolin and clay producers). The classification of the substance was not changed.

REPLACES VERSION DATED	15.12.2017
ORIGINAL DOCUMENT DATED	20.03.2018
FOR REGULATORY INFORMATION; CONTACT	Dr. Denis Bézard Tel: +43 664 4544303 bezard@newchem.org

The environmental, health and safety information contained herein is given in compliance with statutory obligations and relates only to the substance/preparation described in this material safety data sheet. This data sheet and the information it contains is not intended to supersede any terms and conditions of sale and does not constitute a specification, promise, representation, or warranty, whether express or implied, except to the extent required by applicable law. The environmental, health and safety information contained herein is believed to be accurate based on our current knowledge. It remains the responsibility of the customer to provide a safe workplace and to comply with all applicable laws and regulations.