**CENTRAL MINERALS & TRANSPORT JOINT STOCK COMPANY**
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# TECHNICAL DATE SHEET

## KAOLIN CLAY

We, the Central Minerals & Transport Joint Stock Company, hereby confirm that all the given information bellows are in the analysis report**:**

### Chemical analysis

| | | | | | |
|---|---|---|---|---|---|
| $SiO_2$ | Mass % | 52,0 | $P_2O_5$ | Mass % | 0,02 |
| $Al_2O_3$ | | 32,0 | $SO_3$ | | <0,01 |
| $Fe_2O_3$ | | 0,75 | | | |
| $TiO_2$ | | 1,0 | | | |
| CaO | | 0,10 | | | |
| MgO | | 0,35 | | | |
| $K_2O$ | | 3,20 | | | |
| $Na_2O$ | | 0,20 | | | |
| LOI | | 10,4 | | | |

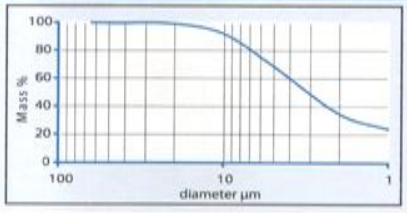
Testing method: X-ray fluorescence analysis

### Mineralogical composition

| | | |
|---|---|---|
| Kaolinite | Mass % | 48 |
| Illite | | 31 |
| Quarz | | 17 |
| Feldspar | | <2 |
| Other | | 2 |

Testing method: X-ray difraction

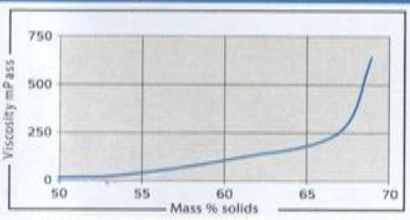
### Particle size distribution




| | | | |
|---|---|---|---|
| residue on sieves | >63 µm | Mass % | 0,01* |
| | >45 µm | | 0,02 |
| finer then | <20 µm | | 99,8** |
| | <10 µm | | 92 |
| | < 5 µm | | 69 |
| | < 2 µm | | 42 |
| | < 1 µm | | 24 |
| | d50 | | 2,6 |

Testing method: * wet on sieve, ** by Sedigraph

### Casting data




| | | |
|---|---|---|
| Deflocculant | | polyacrylat |
| Deflocculant of demand | Mass % | 0,05 |
| Viscosity / Solids | mPas / % | 28 / 54 |
| | | 118 / 61 |
| | | 250 / 67 |
| | | 640 / 69 |
| Casting concentration (500mPas) | Mass % | 68 |
| Casting rate | $mm^2.min^{-1}$ | 1,52 |

Testing method: rotation viscometer, bar formed by casting

### Fired properties –1250 C °

| | | |
|---|---|---|
| Fired shrinkage | % | 12,5 |
| Water absorbtion | Mass % | 9,0 |
| Fired color | L* | 90,0 |
| | a* | 0,08 |
| | b* | 14,0 |

Testing method: firing oxidation, bar formed by casting

### Other properties

| | | |
|---|---|---|
| Moisture contend | Mass % | <12 |
| Bulk density | kg / $m^3$ | ~900 |
| Modulus of rupture (casting) | MPa | 0,70 |
| Dry shrinkage | % | 2,8 |

Applications: Used in the ceramic industry especially as part of the casting slip.
Excellent for quick body formation and high casting concentration.

**FOR CENTRAL MINERALS AND TRANSPORT JSC.**