



# Technical Data Sheet

## VOLCLAY®

**Volclay** is a low viscosity natural sodium bentonite exhibiting variable dry particle size

**Functional use:** general purpose is green sand mold additive. Volclay imparts excellent dried and fired strengths to molding sand where high temperature pouring or firing occurs. This is applicable to both the foundry and refractory industries.

**Purity:** Hydrous silicate of alumina comprised principally of the clay mineral montmorillonite. Montmorillonite content 90% minimum. Contains small portions of feldspar biotite, selenite, etc.

### Chemical Composition (% by weight)

Silica (SiO <sub>2</sub> )	58-64
Alumina (Al <sub>2</sub> O <sub>3</sub> )	18-21
Iron Oxide (Fe <sub>2</sub> O <sub>3</sub> , FeO)	2.5-3.3
Magnesium (MgO)	2.5-3.2
Sodium & Potassium (Na <sub>2</sub> O, K <sub>2</sub> O)	1.5-2.7
Lime (CaO)	0.1-0.7

### Physical Properties

Particle size (dry) : passing 200 mesh 80% (min)
Moisture content (%) : 10±2%
pH : 8.5-10.2
Free swell (mls/2g.) : 18 (min)
Methylene blue : 50 ml/0.5g. (min)
Loose Bulk Density : 0.75-0.85g/cm <sup>3</sup>
Packaging : kraft paper 50 kg. or 1 ton bag

### Foundry Properties

	Moisture (%)	Compact (%)	GCS (N/cm <sup>2</sup> )	DCS (N/cm <sup>2</sup> )	Wet Tensile (N/cm <sup>2</sup> )	Permeability No.	MB. (meq/100 g.)	Free Swell (ml/2 g.)
Average NC*	2.22	40.5	10.53	28	0.387	135.33	110	19
Average C*	2.4	40	9.67	23.17	0.326	126	110	8

NC = Non Calcine (Fresh Bentonite)

C = Calcine (Fired Bentonite at 600C for 1 hr.)

The foundry properties was tested with sand grain fineness no. 60-65 and 7% bentonite according to AFS standard

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