AMERICAN COLLOID COMPANY
A MINERALS TECHNOLOGIES COMPANY

EST. 1927

TECHNICAL DATA SHEET

VOLCLAY® DC-2

WESTERN (SODIUM) BENTONITE

VOLCLAY® DC-2 WESTERN BENTONITE IS A HIGH-QUALITY GREEN SAND BINDER THAT BELONGS TO THE MONTMORILLONITE FAMILY OF CLAYS.

Volclay® Western Bentonite began as volcanic ash millions of years ago. After weathering from rains and pressure by megatons of seawater, volcanic ash was transformed into what we know today as Sodium Bentonite. Volclay® DC-2 Western Bentonite is processed at locations in Wyoming and South Dakota and is sized for optimal performance in green sand systems. Volclay® DC-2 Western Bentonite is a high-quality green sand binder accepted worldwide by the foundry industry. It is a foundry-proven product that provides the performance expected by today's foundrymen to meet the demand for quality castings.

APPLICATION

Volclay® Western Bentonite is the preferred binder for production of green sand iron and steel castings. It is also selected in the production of copper base and aluminum castings when extra performance is needed. Because it is more durable than other bonding materials, Volclay® DC-2 Western Bentonite requires less replacement when sand mixtures are re-bonded. Volclay® Western Bentonite-bonded sand mixtures offer high dry compression strength and high hot compression strength to prevent sand erosion, cuts, washes, inclusions, burn-on, and scabs.

Molding sand practice is based on having low clay content coupled with low temperature water. Volclay® Western Bentonite meets these parameters. It imparts excellent dried and fired strengths to molding sand where high temperature pouring occurs. Volclay® Western Bentonite's unique capability to hold water prevents mold surface erosion by molten metal. It also provides excellent strength and toughness to molding sand mixtures, enabling good draw of the pattern.

VOLCLAY®

FEATURES & BENEFITS

- **Provides highest tensile properties**
- **Combats friability**
- **Excellent dry and hot properties**
- **Increases durability and toughness**
- **Controls expansion problems**
- **Quick green compression strength development**
- **High, quick dry compressive strength**
- **Low viscosity**

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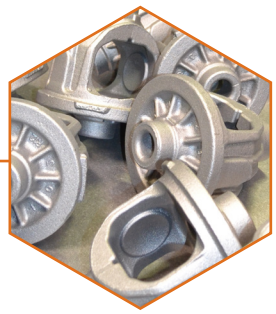

PHYSICAL PROPERTIES
(5.0% CLAY, 2.5% WATER)

PROPERTY	TYPICAL VALUE
Green Compression Strength (psi)	9 – 11
Dry Compression Strength (psi)	115 – 170
Hot Compression Strength @1650 F (psi)	550 – 775
Methylene Blue (meq/100g)	104 – 135
Soluble Calcium (meq/100g)	14 – 24
Moisture (%)	6.5 – 10.5
pH @ 6.25% solids	8.5 – 10.5
40 Mesh (% retained, max)	0 – 0.5
200 Mesh (% passing, min)	70 – 85

CHEMICAL ANALYSIS

PROPERTY	TYPICAL VALUE
Aluminum Oxide, Al_2O_3 (%)	18.0 – 21.0
Iron Oxide, Fe_2O_3, FeO (%)	2.8 – 5.0
Magnesium Oxide, MgO (%)	2.5 – 4.5
Calcium Oxide, CaO (%)	1.0 – 3.0
Sodium Oxide, Na_2O (%)	2.1 – 2.7
Potasium Oxide, K_2O (%)	0.4 – 0.6
Silicon Dioxide, SiO_2	55.0 – 65.0

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