



# CA-WM1

## MANGANESE WEIGHTING AGENT

### DESCRIPTION

CA-WM1 is a specialized form of Manganese compound used as a self-stabilizing weighting agent for cement slurries. This product has distinct advantages over conventional weight materials such as barite, hematite and ilmenite.

CA-WM1 is compatible with all Classes of API cement and all cement additives.

### PHYSICAL PROPERTIES

Material	Form	Sp. Grav	Abs. Vol	Packaging
CA-WM1	Fine, Reddish	4.8	0.025 gal/lb	50 or 100 lb
	Brown Powder			Sacks, or 1500 lb Bulk Bag

### APPLICATION

CA-WM1 is an ideal weighting agent for cement slurries. To the present time, conventional weight materials have been dry-blended with the cement at the bulk plant. However, some companies have reported problems caused by density segregation in the dry blend during transport or storage. If adjustments in slurry design are required after initial blending has been completed, it is an expensive and time consuming operation because the cement must be returned to the plant for re-blending. In addition, separation of the weight material in the cement slurry downhole is also a problem.

CA-WM1 addresses many problems associated with conventional weighting agents. The material particles are spherical, with an average size of 0.4 microns, and have a very high surface area (approx. 3 m<sup>2</sup>/g, ten times that of API cement). These factors contribute to the product's unique ability to stay suspended in the dry-blended cement during transport and storage for long periods of time, in the mixing water prior to adding the cement, or in the slurry at downhole conditions. This water-dispersible product allows greater flexibility in last minute slurry design changes because no pre-blending is required, and the product may be added to the mix water. Whether dry-blended in the cement or added to mix water, greater control and enhancement of slurry properties is achieved with the use of CA-WM1.



The cost per cubic meter of slurry may be similar to hematite systems. However, the logistical and handling advantages of a cement system designed with CA- WM1, as well as its superior application flexibility, can greatly reduce overall job costs. The benefits of CA- WM1 are listed below:

- May be pre-mixed in the water before the cement, or dry-blended without the fear of separation due to its suspending characteristics.
- Allows for mixing flexibility.
- Helps provide uniform downhole results--consistent rheology and fluid loss results.
- Provides high compressive strengths.
- Less abrasive than hematite.
- Non-magnetic

## CONCENTRATION

CA-WM1 concentrations typically range up to 100% by weight of cement. The actual loading will depend on desired slurry density and whether silica is included in the design.

