



# Technical Datasheet

## HEMATITE (HI-DENSE)

### Description

**Hematite (Hi-Dense)** is iron oxide with a chemical formula of  $Fe_2O_3$ . It is a common rock-forming mineral found in sedimentary, metamorphic, and igneous rocks. It naturally occurs in black to steel or silver-gray, brown to reddish-brown colors. Hematite (Hi-Dense) is a type of natural asphaltic materials which are widely used in various industries such as drilling and cementing fluids. Hematite's density is in range of 4.9-5.15 (S.G). Hematite (Hi-Dense) is processed to remove impurities then classified to achieve the desired particle size distribution.

### Application

Hematite (Hi-Dense) has a wide variety of applications. The mineral is used to produce pigments, preparations for heavy media separation, radiation shielding, ballast, and many other products.

Hematite is applicable in all types of drilling fluids, including freshwater, seawater and oil – base muds. Hematite may be substituted for, or blended with BARA-WATE API in all mud systems. It can be used to increase the density of all drilling fluids up to 25 ppg (3.0 SG). It is especially useful in high-density kill fluids.

### Advantages

In drilling fluid industry, following advantages may be considered:

- Drilling fluids which are formulated with Hematite have lower solids contents and frequently contribute to higher rates of penetration as compared to Barite contained muds.
- Chemically inert and has no adverse effect on other additives in drilling mud or cement
- Has a higher specific gravity compared to Barite
- Improve rheological properties and penetration rate and may decrease overall mud cost

### Limitations

In drilling fluid industry, following limitations may be considered:

- Hematite's corrosivity is slightly more than Barite.
- Muds containing Hematite (Hi-Dense) may require more rheological properties (such as yield point) for proper suspension.

### Typical Properties

APPEARANCE	Red to brown powder
SPECIFIC GRAVITY	4.9-5.15
pH (1% solution)	Minimum 6.5
Solubility	Insoluble in water
Alkalinity as Calcium ions	Maximum 100 ppm
Mesh Size (%wt.)	Maximum 1.5% retained by mesh 200 (75 micron)

### Packaging

Hematite (Hi-Dense) is available in 1.5 MT Big bags.