

FLOTTEC 400 SERIES DEWATERING AID SURFACTANTS

PRODUCT DATA SHEET

Flottec 400 series dewatering aids are powerful DOSS (Dioctyl sulfosuccinate) based liquid surfactants that are principally used to aid in the filtration of mineral concentrates in order to reduce filter cake moisture and improve filter cake handling characteristics. They function by lowering the surface tension of water and more importantly, by making the mineral particle surfaces more hydrophobic (water hating), thus allowing for higher levels of moisture reduction. Also, by varying the operating parameters of the filter, such as speed, boot level and cake thickness, the addition of the Flottec 400 series dewatering aids can lower moisture, increase filtration rates, improve filter cake release and improve filter cloth life.

Flottec 470 and 470G are highly concentrated, clear, slightly viscous liquids that are readily dispersible in water. Flottec 470 has a solvent system containing alcohols, whereas Flottec 470G is specially formulated to raise the flash point above 200° F for improved safety and long term storage characteristics. These products have a low tolerance for pH above 9. As pH increases above this point, the product decomposes at faster rates. This property can be used to eliminate any potential problems in a closed circuit system through the adjustment of the slurry pH with lime to assist in the decomposition of the product. Contact your Flottec representative for information on decomposition vs pH and time. Other 400 series dewatering aids are available that are more readily dispersed in pulps when conditioning times are limited.

Typical Properties

	Flottec 400 Series Dewatering Aids Surfactants Series			
Product	Flottec 440	Flottec 470	Flottec 470G	Flottec 460G, 470GLV
Appearance	Clear, Colorless Liquid			
Specific Gravity @ 25°C	1.09	1.09	1.09	1.08
Flash Point (°C)	>61	>61	> 95	> 95
Water Solubility @ 20°C	Soluble	1.7%	1.7%	1.7%

Methods of Addition and Uses

Flottec 470 and 470G dewatering aids are most recommended for use in the filtering of mineral concentrates such as alumina, copper, lead, zinc moly and iron. The benefits of using these products are:

- lower cake moisture that reduces drying and freight costs
- faster filtration rates thus lowering capital investment in filters
- better cake release increasing the efficiency of the filters
- reduces filter cloth blinding improving the life of the cloth

Flottec 470 and 470G are readily dispersible in water. For optimum performance, it is recommended that the product be added dilute (1.7% solution) or pre-dispersed in the filter feed or as a dilute solution in

the spray water. Any pre-conditioning in the slurry to completely disperse the product is desired and will improve performance. If preconditioning is a problem, Flottec 440 or 414 should be considered.

In some applications, such as in fine iron concentrate dewatering, the addition of high molecular weight Flocculants in conjunction with the surfactant based dewatering aid will assist in binding fine particles into aggregates and improve cake drainage.

The optimum dosage, addition points and operating parameters of the filter is best determined by plant testing. Depending on the application and the mineral substrate, typical dosages are as low as 25g/t of solids (0.05 lbs/ton) to 500 g/t (1.0 lbs/ton).

Toxicology

Flottec 470 and 470G are biodegradable liquids. At pH levels of 11, the products will decompose in 4 hours. At pH 12.5, this decomposition is reduced to 15 minutes. They exhibit low levels of toxicity. For more information, please refer to the MSDS.

Storage and Handling

Flottec 470 solvents may flash off with time due to high altitude or high temperatures. Keep away from heat or open flame. Flottec 470G is not regulated and has a flash point above 200° F. This product is recommended for use in areas where the product may be stored in hot weather or at high altitudes. The recommended materials of construction for storage are polyester-fiber glass, steel coated with resin, PVC plastic, aluminum or stainless steel. In cold climates, insulation or heating is recommended to keep the temperature above 50° F. As mentioned, In hot climates, the viscosity of Flottec 470 can increase due to solvent volatility. In these cases, Flottec 470G is recommended.