Flocculants for mining industry



Water Treatment Mining Processes

ADVANTAGES

The principal advantages of the Sifloc flocculants are as follows:

- 1. Low doses and reduction of flocculants cost.
- 2. High speed of flocculation and sedimentation increasing the final production capacity.
- 3. Increase of the thickening sludge and major water recuperation.
- 4. High clarity in the overflow and better quality in filtration.
- 5. Excellent correlation between the sedimentation and filtration polyelectrolyte producing high solids concentration and optimal capacities of final handling.
- 6. Wide pH range.
- 7. Wide range of products available for specific mining processes.

MAKE UP AND DOSIFICATION

Laboratory

The solutions can be prepared in the needed concentration between 0,1 and 0,5%.

It recommended to use the same water preparation from the plant.

Weight the polymer in a pot of glass with hermetic tap, add 3ml of ethanol, methanol, isopropanol or acetone, wet the pot - glass and add the required water. Mix during at least 1 hour. If the magnetic stirrer are not available, mix strongly during the first minute after the water addition to mix time to time during one hour.

Dilute at 0,05% the mother preparation before the final use.

The liquid products can be prepared at 1% in direct dilution and can be use immediately.

Like a general consideration, the recommend concentration in the makeup unit in powder is 0,5%, diluting till 0,05% in final application point



PRODUCT SELECTION

The procedure to select the best grade is to test different polymers in laboratory test. The following table can be use like a guide line but it's really impossible to predict the product for all the applications.

APPLICATION AND STORAGE

The recommended concentration of the solutions to the final dosification can vary depending of every single application. The separated technical processing data specify the particularity but generally we recommend a 0,05% dilution en powder polymers and 0,5% in liquid.

The general principles for the application are as follow:

- 1. Dosify the flocculant solution in a mixing place.
- 2. Add the polymer across the process channel and in different addition points if possible to ensure the maximum polymer activity in to the treating water.
- 3. Avoid the possible turbulences when the flocculant has performed to eliminate the possible breaking floc.

IMPORTANT, always use dosing pumps with positive displacement for the flocculant dosification because centrifuge pumps destroy considerably the polymer.

The storage of the product must be done in a cold dry place. The bags must be always closed to avoid the moisture.

TECHNICAL SERVICE

Our mining technical department provide the specialized personal in the laboratory and test and industrial test to determinate the right product in each application.

HEALTH AND SAFETY

The Sifloc flocculants are very low toxicity and not present special problems of handling in general use.

The details of handling and the caution of the use are described on separate Health and Safety for each product.

TRANSPORT AND PACKAGE

The Sifloc flocculants are supplied in 25kg. bags and palletized in different sizes, 500, 900 and 1000kg prepared for export. Big bags of 500 and 1000kg. are also available under request. The Sifloc flocculants present low corrosion level in front the main materials but it's not recommended the use aluminum or galvanized steel.

Suggested applications of Sifloc range for mining: See attached table.

Product	Ionic Change	Physical form	Uranium - acid liquors	Uranium - alkaline liquors	Potash clays	Electrolytic zinc - acid liquors	Electrolytic zinc - neutral liquors	Copper tailings	Coal tailings	Brine clarification	Phosphate treatment	Metallic hydroxides	IAcid liquors of Ni, Co, Cu	Alkaline liquors of Ni, Co, Cu	Basic metallic concentrates	Pyritic tailings	Barite thickening	Sands and clays
N51, 11100A	Non - ionic	powder	х		х	х	х	х		х	х		х	х	х	х		х
713N, 11407BF,	low anionic	powder			х	х	x		х				х	х				x
11345, 105CL	low anionic	powder					х	х	х		х			х				x
110CL,	medium anionic	liquid					х	х	х		х	х		х				
520	medium anionic	powder					х	х	х		х	х		х				
SID. 200	medium anionic	liquid									х	х		х				
330, 530, 630	medium anionic	powder						х	х		х	х		х		х	х	x
11405B	medium anionic	powder						х	х		х			х		х	х	
120CL	high anionic	liquid						х	х	х	х	х			х	х	х	х
7201, 540	high anionic	powder						х	х	х	х	х			х	х	х	x
11567, 11656	high anionic	powder						х	х	х	х				х	х	х	
350, 360	very high anionic	powder		х						х	х				х			x
11514, 760	very high anionic	powder		х						х	х	х			х			x
11767	very high anionic	powder		х					х	х	х				х			x
13230	low cationic	liquid	х									х	х					
C-30	very high cationic	liquid							х							х		
C40	very high cationic	liquid							х							х		
C-21	very high cationic	liquid														х		





The Sifloc are a range different molecular weight and non-ionic, anionic and cationic water soluble polymers for clarification, thickening filtration and dewatering in the mining processes.

Product Range

Polyelectrolyte

- Anionic
- Non-ionic
- Cationic
- Liquid range
 - Water based
 - Inverse emulsion
 - Concentrated liquid (LDP)
- Solid range

Powder grade

Other products

- Selective defoamers Organic coagulants Filtration coadjuvant Defamers and rheological modifiers
- Chelating hand heavy metals precipitants

