

HydroStar®

HydroStar® is a modified natural polysaccharide. It is characterized as a low viscosity, highly soluble, non-ionic polymer.

HydroStar is an effective polymer smoothing agent for electroplating and electro-winning operations. It has exhibited improved cathode density and higher purity of the base metals.

Application Properties

- Smoothing agent
- Cold water soluble
- Electrolyte soluble
- Copper, Nickel and other EW metals
- Shear stable

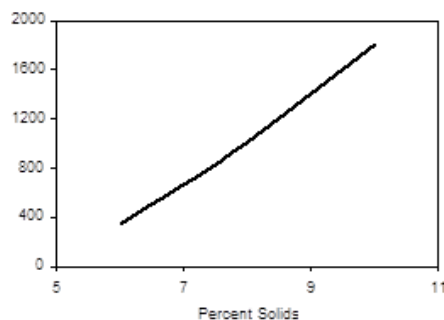
Main Applications

- Electroplating
- Electro-winning

Appearance

HydroStar is supplied as off-white, granular powder. Aqueous solutions are translucent and demonstrate excellent stability.

Effect of Solids Concentration on Viscosity



Solution Preparation

The granular form of HydroStar makes it easy to disperse and solubilize in water with minimal agitation. To avoid potential lumping of the polymer, preparation of aqueous solutions requires the addition of Hydrostar to the vortex of mechanically agitated water. Maintain agitation for a period of about 30 minutes to ensure complete hydration of the granular particle.

Any agglomerates that initially form will break down with normal agitation and time. The character and amount of agitation required will vary with polymer concentration and water temperature. High solids and cold water make-up may necessitate longer agitation time.

Solution Preservation

Extended storage of aqueous HydroStar solutions could result in viscosity reduction due to microbial or enzymatic attack. Stored solutions should be protected by the use of a preservative. The HydroStar is also available with a preservative treatment.

Storage, Handling and Safety

HydroStar exhibits good storage stability if kept dry in the original package. Shelf life can be affected by storage conditions such as temperature, humidity and overall surroundings of the storage area. A Material Safety Data Sheet is available from Chemstar and should be consulted prior to handling or use.

Generalized Mechanism of HydroStar Smoothing

HydroStar promotes smooth plating by temporarily blocking the peaks of the growing nodules, therefore promoting copper to deposit in the valleys. By promoting smooth deposition of copper onto the cathode, HydroStar increases the quality of copper harvested. In addition, site engineers have been able to increase copper production at higher current densities while improving overall harvested copper quality.



General HydroStar Dosage Rate

Availability

HydroStar is available in 25 and 50 lb multi-wall poly-lined paper bags or 2,000 lb super sacks for truckload and LTL shipments. For additional information, samples or technical assistance in using HydroStar or any other Chemstar product please contact 1-800-328-5037 or info@chemstar.com.

Typical Analysis of

HydroStar	
Viscosity (cP), 5% Solids LVT, 60 RPM, #2 Spindle	50 – 300
pH (6% Solids)	7.0 – 10.0
Percent Moisture (%)	10 max
Bulk Density (lb/ft ³)	25 – 35
Particle Size (% thru)	85 min (-) 600 micron
Ionic Character	Nonionic

Amperes per Square Meter	Amperes per Square Foot	Grams of HydroStar per Ton of Copper
160 – 270	15 – 25	100 – 250
270 – 375	25 – 35	250 – 400
375 – 485	35 – 45	400 – 600

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