



PUMPS THAT EXPERTS SELECT.

Black Liquor

Weak black liquor concentrations (10-20%) are easily handled with open impeller centrifugal pumps. The viscosity of the liquor is temperature dependent. The weak liquor at 160-200 deg. F requires no viscosity correction at the pump, but you should calculate the friction loss in the discharge piping at 1.5 times the water friction value. Materials of construction are DI/316ss, CD4Mcu.

Strong black liquor (50% or greater) requires viscosity correction and typical values are in the 100-300 centipoises range depending on the temperature. The higher the temperature, the lower the viscosity.

% solids	S.G.	Viscosity	Friction Mult.	Discharge Pipe Velocity
14-16%	1.08 S.G.	Water	1.5	6-8 ft/sec
50%	1.30 S.G.	15-17 CP at 121 deg. C	10	4-6 ft/sec
65%	1.43 S.G.	160 CP at 121 deg. C	15	4-5 ft/sec
70%	1.5 S.G.	1200 CP at 121 deg. C		4-5 ft/sec

When the solids range is above 35%, all 316ss is used as a minimum.

The stuffing box sealing arrangement should be selected to cope with the pressures, temperatures, and abrasiveness found in black liquor. Also please note that we want to guard against dilution of the product since this is very costly in the process.

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