



Freeze Concentration Plant - 1100lbs/Hr

Capacity: 1100 lbs/hour

Products: Freeze concentrated food grade liquid

Major Equipment

- Feed Tank – TK68400
- Product Pump – PU68457
- Production Vessel – PV68450
- Slurry Pump – PU68451
- Ice Transfer Pump – PU68124
- Heater – HT68303
- Melter – HT68302
- Ice % Melter – ME68430
- Washcolumn – ME68300
- Wash Water Circulation Pump – PU68301
- Crystallizer Stage 1 – EX68100
- Crystallizer Stage 2 – EX68200
- Cooling Unit (Chiller)
- Buffer Vessel Temper – TK68000 Main
- Temper Pump PU65001_65002

Brief Plant Description

Used 1100 lbs/hr freeze concentration system. Manufactured by GEA MESSO. The unit is a two-stage crystallization system with a capacity of processing coffee concentrate at 34 wt%, built for high-efficiency freeze concentration. The feed (coffee solution of 6.5 - 7.5 wt%) will be supplied to feed tank TK68400. The feed has a temperature of 4 C. From there the feed is supplied to the crystallizer EX68200 (second stage). In both crystallizers an amount of ice crystals is produced. The crystals are suspended in the remaining liquid (coffee). The ice percentage in the crystallizers is around 30 %. The ice crystal production in crystallizer (first stage) is supplied to crystallizer EX68200 via ice transfer pump 68124. The ice is supplied as a slurry of 30% solids (ice crystals) and 70 % liquid (concentrated coffee). The ice crystals produced in crystallizer EX68200, together with the crystal production from the first stage is supplied to wash column ME68300. The wash column semi continuously withdraws an amount of slurry from crystallizer EX68200. The slurry is separated in the wash column in a pure water stream and a liquid stream. The pure water stream leaves the plant and the liquid stream is returned to crystallizer EX68200. Part of this liquid stream is used as a feed for the first stage crystallizer EX68100, to compensate for the ice production to the second stage and the final production of concentrated coffee. The latter stream is produced via production vessel PV68450. From crystallizer EX68100, a slurry flow is circulated over the production vessel via product slurry pump 68451. The production vessel contains a filter, what provides the discharge of a concentrated, ice free, coffee stream. Via product pump PU68457 this high concentrate coffee flow is discharged from the freeze concentration plant for further processing

For more
information contact

Dan O'Leary, Equipment Sales
dan@phxequip.com
+1 732.709.7156 (Direct Dial)
+1 732.832.5899 (Mobile)

To discuss plants
you are selling

Jesse Spector
plants@phxequip.com
+1 732.709.7157 (Direct Dial)
+1 908.902.8854 (Mobile)