

Why using GEA Messo PT IceChill technology?

- ♣ 100% product recovery
- ♣ No ice accumulation problems
- ♣ Simple automated production of ice beer
- ♣ Easy low temperature stabilization
- ♣ Lowest possible temperatures without freeze-ups
- ♣ Natural process without additives
- ♣ Contact time with ice is easily controlled
- ♣ Potential shortening of lagging time
- ♣ Product development

What is new?

Innovation in GEA Messo PT slush freeze technology has resulted in a new generation of low cost IceChill systems.

Which products?

All types of beer, wine, juices

Which capacity range?

50 – 500 hl throughput per hour through standardized units.

IceChill technology - your guarantee for:

- ♣ Low cost production of ice beer
- ♣ Simple and efficient operation
- ♣ No intermediate cleaning needed
- ♣ Low maintenance cost

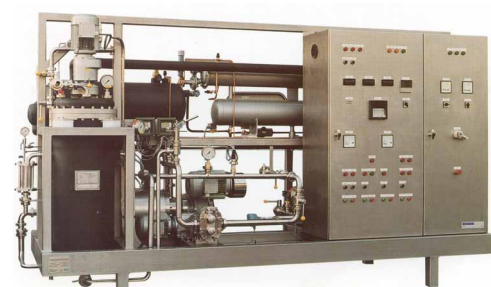
Standard system capacity configurations

Model	Throughput with feed at 0°C (m ³ /hour)
NSF-6	5
NSF-8	6
NSF-12	10
NSF-20	22
NSF-30	35

Typical product temperature -2.0°C

Ice Chill Process

Slush Freeze Technology for Ice Beer Production



Pilot plant unit

Process Engineering

GEA Messo PT

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Process description

The product is pumped from a buffer/storage tank into the IceChill. It first enters a scraped surface heat exchanger where after being cooled down to the freezing point a small quantity of ice crystals is produced. The product with the ice crystals enters a recrystallizer vessel where approximately 20% w/w ice percentage is maintained.

The product remains during a controlled time in the recrystallizer and leaves through an internal strainer. This mixture of ice and liquid at equilibrium guarantees that the entire product volume has been at its freezing point while inside the recrystallizer.

The relatively long residence time of the ice crystals provide excellent growth conditions. Consequently, only pure ice crystals are being formed. The large spherical crystals allow easy separation of the liquid product through the strainer.

Due to the large ice crystal size, the strainer opening can be large enough to let un-dissolved particles pass eliminating the chance of plugging.

The higher the alcohol concentration is, the lower the freezing point. Since the product leaves the system at its freezing point, this generally will have a positive effect on product stability. After leaving the IceChill system the product proceeds to a clarification process like e.g. filtration, centrifugation, decanting or sedimentation. After clarification the product is clear and more stable.

The refrigeration system is integrated into the unit. Only condenser water supply is needed.

Operation time/day

It is most economical to operate continuously. However, the system can be operated on a discontinuous basis. Approximately 2 hours are needed for the initial start-up leaving effectively 6 to 10 production hours per day shift.

The unit does not need cleaning during production; therefore, a system can also operate on a 24 hours/day basis.

Feed temperature

The equipment can handle any feed temperature, but when the feed temperature is higher than 0°C, it is economical to pre-cool the feed by using standard heat exchanger equipment. GEA Messo PT can also supply this equipment. The capacities are based on 0°C feed temperature and a freezing point of -2.0°C.



Next Steps...

For more information regarding this technology and your specific configuration requirements please contact us at: info.niropt.nl@geagroup.com or phone +31.736 390 390.

