

PolyDefrost™

• Rapid Thawing Technology

The technology of the PolyDefrost™ is centered on maximizing the surface heat transfer coefficient to allow for rapid thawing. This proprietary design utilizes a unique blend of water flow and air distribution that results in maximization of heat transfer on the surface of the product. The result is significantly improved thawing rates for many products. In some shrimp processing thawing times have been reduced by as much as 75%.

• Improved Yield

The thawing technology of the PolyDefrost™ decreases the potential for large ice crystal formation during the thawing phase. This results in a direct reduction in thawing drip loss associated with cellular damage caused by recrystallization of the water into larger ice crystals. This reduction in weight loss has a direct and positive economic impact on the processor by reducing weight loss and improving yield. In shrimp thawing the processor can realize at least a 3-4% reduction in weight loss.

• Improved Quality Control - Food Safety

In many thawing systems the product moves into an intermediate temperate zone and remains there for an extended time. This allows for the formation of large ice crystals during recrystallization resulting in cellular damage and increased potential for drip loss. Some systems utilize high temperatures to help reduce the time spent in this intermediate temperate region. However, the high temperatures result in dangerous surface temperature levels and the potential for partial cooking of the product. The PolyDefrost™ allows for low thawing temperatures and shorter dwell times to reduce the potential for bacteria proliferation and eliminate surface cooking.

• Non-mechanical Intervention

The water and air system utilized in the PolyDefrost™ allows for effective agitation and movement of products through the chilling zone without mechanical intervention. There are no belts or other conveying means apart from the water flow and air distribution. The result is reduced potential for product damage, increased ease of sanitation, and reduced maintenance requirements.

• Improved Efficiency

The unique blend of water flow and air distribution in this immersion thawing system offers significant advantages over ambient air thawing due to the much higher surface heat transfer coefficient. The PolyDefrost™ is also more efficient than most other types of immersion systems due to its unique flow patterns. This translates into increased production rates and product output.

• Ease of Use

The PolyDefrost™ design minimizes the number of moving parts. The system is exceptionally easy to operate and maintain. Ledges and crevices in the product zone have been minimized to facilitate ease of sanitation. Operator safety is also enhanced through the elimination of mechanical components in the chilling zone.

Advanced Technology for Thawing of Seafood Products

Introducing the PolyDefrost™ Innovation in the Rapid Thawing of Products

One of the family of Polyflow™ Hydro-thermal Systems, the PolyDefrost™ is an immersion thawing system and offers rapid and homogeneous thawing of a wide variety of seafood products including shrimp and whole fish.



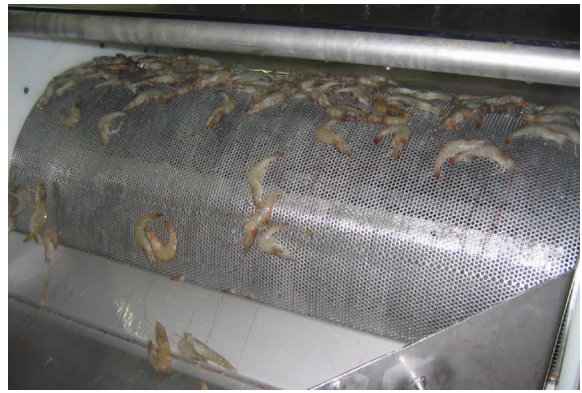
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Better Technology

- Rapid and homogeneous thawing through high surface heat transfer coefficient
- Reduction in thawing drip loss
- Increased yield by reduction in weight loss
- Improved food safety with low temperature thawing
- Substantial improvement in efficiency
- Facilitates line capacity increases
- Improved product quality control
- No mechanical intervention in thawing zone
- Low maintenance design with few moving parts
- Improved operator safety
- Ease of sanitation
- Low cost of operation



Product in agitation zone



Thawed shrimp discharging over dewatering drum

Polyflow™ Hydro-Thermal Systems

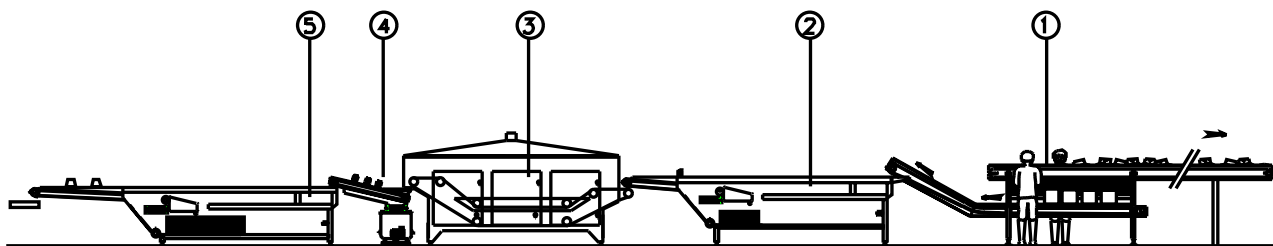
The PolyDefrost™ is part of the Polyflow™ family of hydrothermal systems. The unique blend of water flow and air agitation results in exceptional capabilities in a number of processing requirements. Other systems based on this technology include:

PolyWash™ - For the ultimate in effective washing of many leafy products, whole fruits and vegetables, seafood products, and many, many more.

PolyChiller™ - For rapid and effective chilling of a wide variety of products from loose vegetables to hot filled pouches and cups.

PolyCooker™ - For efficient heat transfer for blanching and other thermal applications for a wide range of products.

PolyFreezer™ - For efficient freezing of seafood products utilizing a brine concentrate to maintain water temperatures well below 0° F.



Sample shrimp thawing, cooking, and freezing line

- | | |
|---------------------------------------|-------------------------|
| 1. Preparation line for frozen shrimp | 4. Rinsing/Pre-chilling |
| 2. PolyDefrost™ for thawing | 5. PolyFreezer™ |
| 3. Cooker | |

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