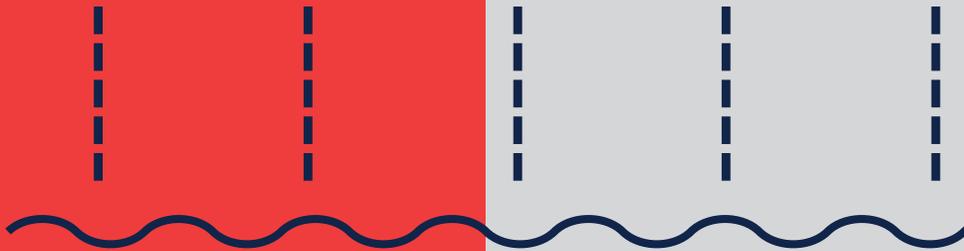
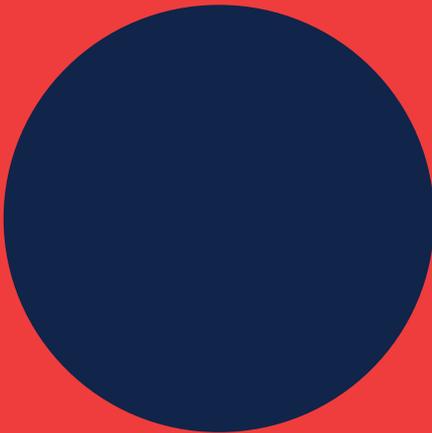
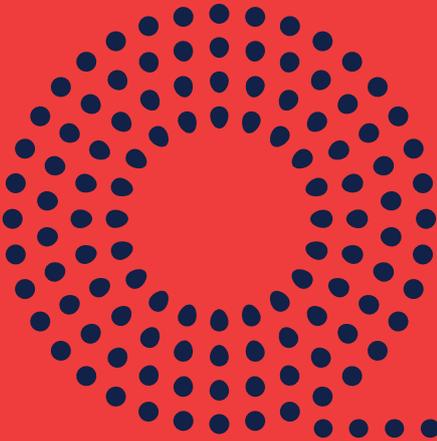




Our supercooling process solidifies any melt by suspending crystal nuclei in the melt, enabling crystallization to the desired product form.

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PASTILLATION SYSTEM FOR SUBCOOLING PRODUCTS



CLEAN, EFFICIENT PASTILLATION OF SUBCOOLING MELTS

Some melts remain liquid even when cooled below their melting point and are known as subcooling melts. The reason they refuse to crystallize and solidify is the lack of the crystal nuclei.

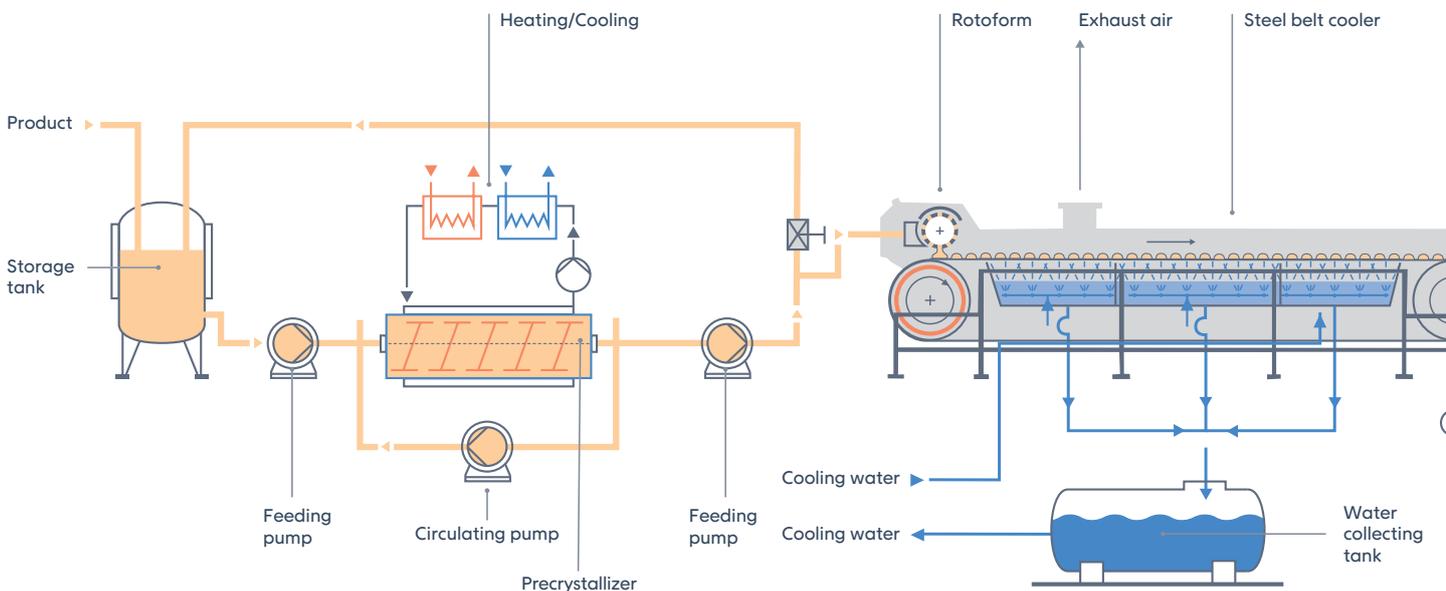
However, a supercooling process has been developed to solidify these difficult subcooling melts by producing a homogeneous suspension of crystal nuclei in the melt. This is done with the scraped-surface heat exchanger, called precrystallizer, using a cold cylindrical surface and a heated rotor.

The process enables the melt to be crystallized on the steel belt in a very short time and can be used to produce the desired product form – such as pastilles, micropastilles or flakes. Since the development of this innovative system, we have designed, supplied and installed more than 100 supercooling plants. Each has been a

turnkey system, incorporating everything from the precrystallizer heating/cooling equipment to the Rotoform, steel belt cooler and measurement and control equipment.

Typical applications for our supercooling process include:

- Agrochemicals.
- Photochemicals.
- Plastic additives.
- Rubber chemicals.
- Stabilizers.
- Pesticides and herbicides.
- Flame retardant.



Rotoform 4G SC – a supercooling system for the pastillation of melts with special physical properties

The automatically operated plant consists of a heating and cooling skid, a precrystallizer skid, a Rotoform, a steel belt cooler and a programmable logic control system offering a complete package for continuous operation that only requires occasional operator intervention.

This process handles the challenge of the melt remaining liquid even when cooled below its melting point, known as a subcooling melt.

A system of baffles and internal nozzles built into the cylindrical stator provides uniform pressure across the whole width, resulting in even flow through all holes of the perforated outer shell. This ensures that every pastille is of a uniform size, from one edge of the belt to the other.

The circumferential speed of the Rotoform is synchronized with the speed of the belt: drops are therefore deposited without deformation. Heat released during solidification and cooling is transferred by the stainless steel belt to the cooling water sprayed underneath. This water is collected in tanks and returned to the water-chilling system; at no stage does it come into contact with the product.

Free-flowing pastilles are produced, which are easy to handle, bag and transport.

Free-flowing, uniform pastilles are produced, which are easy to handle, bag and transport. Because little dust is created in the production process, or subsequently by the pastilles, the entire production is environmentally friendly.

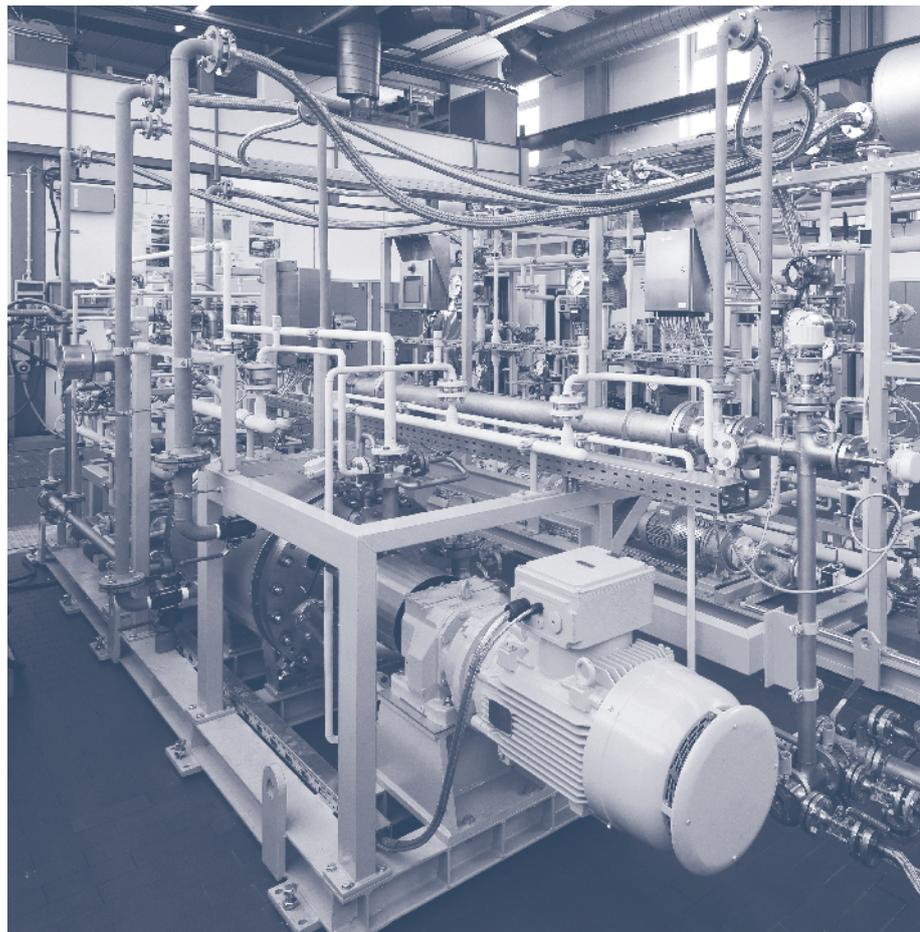
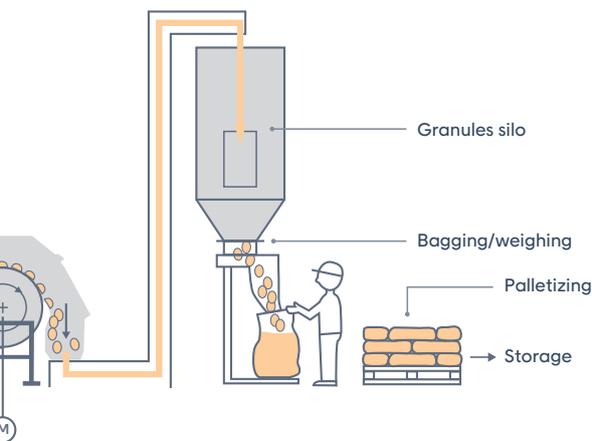
Monitoring and control of the entire continuous process is carried out at every stage. This is routed via the central process control unit, which ensures that the settings remain constant.

The cooling process has to be controlled very precisely to maintain the temperature of the slurry. Pipes are heated and insulated, and the scrapers of the precrystallizer are also heated to avoid solidification of the melt in the precrystallizer.



It solidifies these subcooling melts by introducing a homogeneous suspension of crystal nuclei into the melt. This enables the slurry (a mix of nuclei and liquid product) to crystallize quickly on the water-cooled steel belt of the Rotoform unit.

The Rotoform itself consists of a heated cylindrical stator – which is supplied with liquid product – and a perforated rotating shell that turns concentrically around the stator, depositing drops of the product across the whole operating width of the steel belt.



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— SYSTEM —
— SUBCOOLING —
PRODUCTS —
— PASTILLATION —