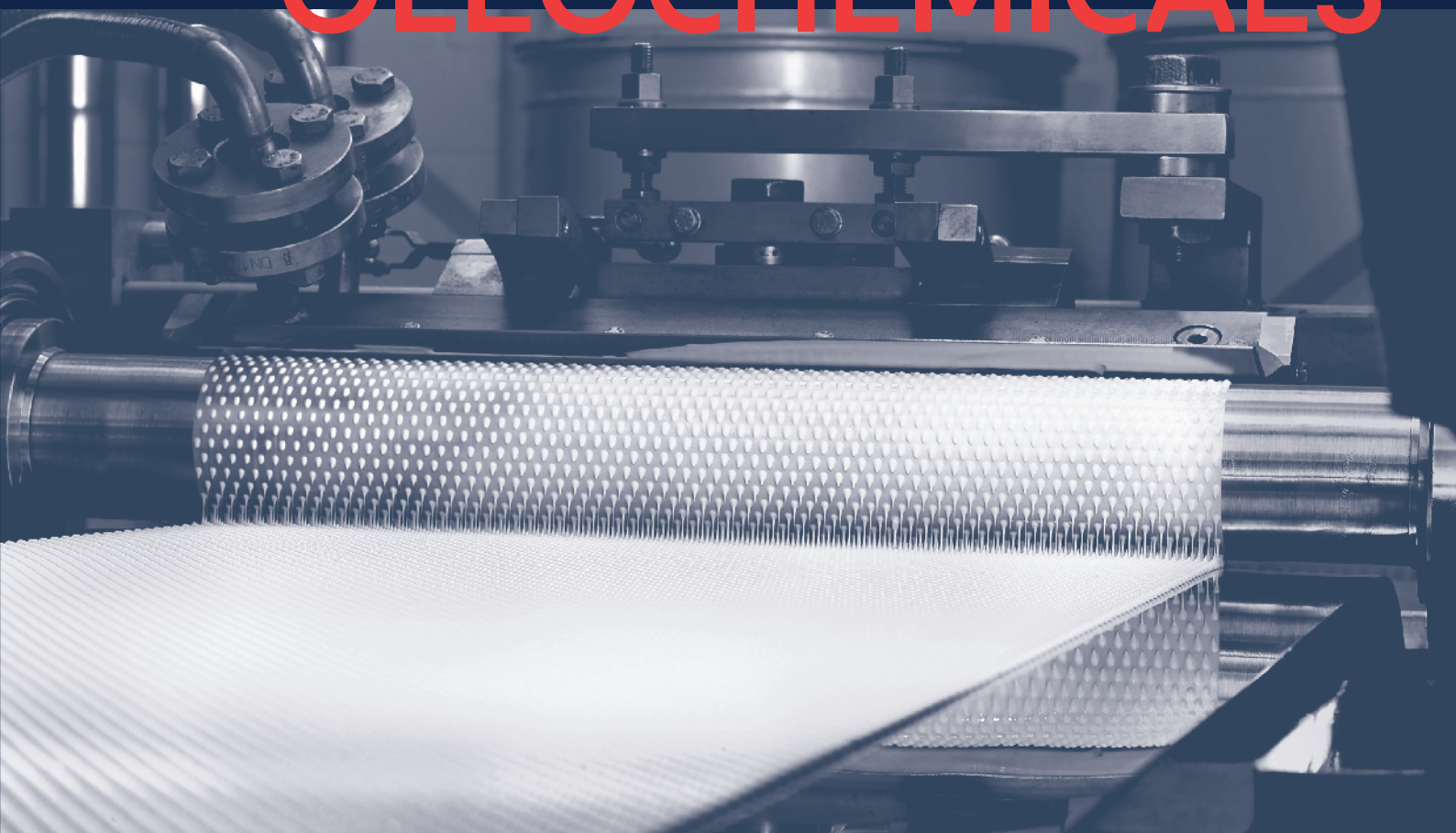




Our highly efficient and economical solidification solutions for waxes and oleochemicals are based on the Rotoform system, guaranteeing pastilles of uniform size and shape.

ipco.com

GRANULATION— —SYSTEMS—FOR— —WAXES—AND— —OLEOCHEMICALS—



ROTOFORM GRANULATION FOR HIGH QUALITY, FREE-FLOWING PASTILLES

As one of the world's leading suppliers of special granulation systems, we provide highly efficient and economical solidification solutions for a whole range of chemical products.

This broad of expertise sees us design, manufacture, install and support systems throughout the world, with a wide range of applications.

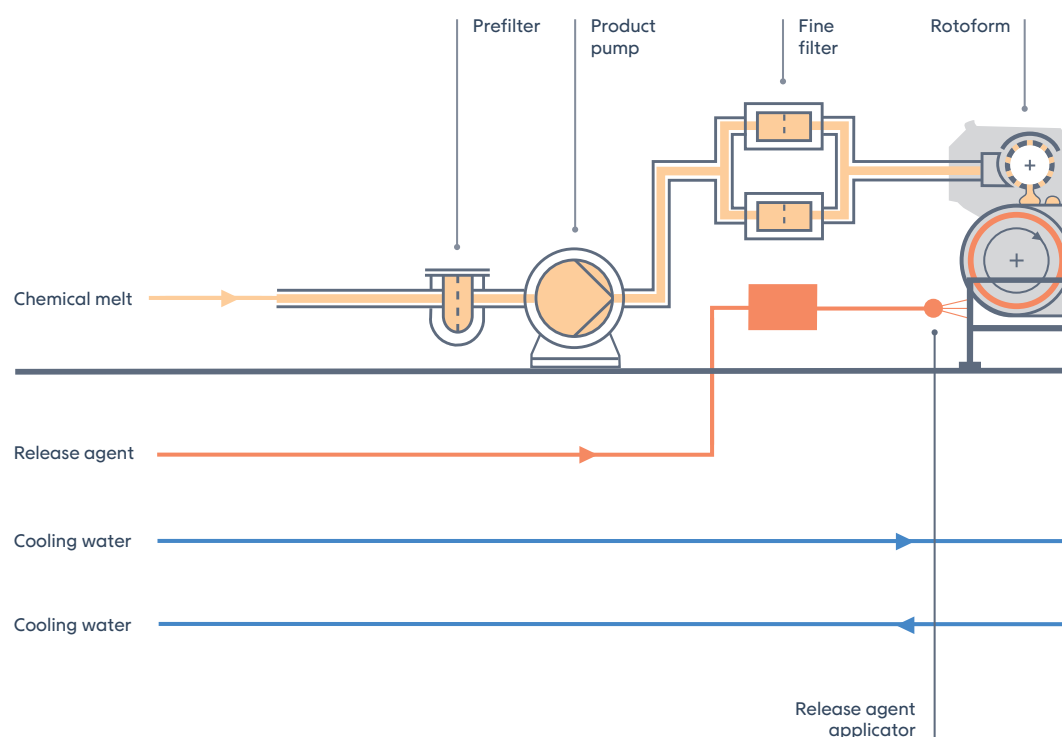
Many of these are waxes and oleochemicals, and both can be solidified into free-flowing pastilles of uniform size and shape – quickly, efficiently and directly from the melt – on the IPCO Rotoform system.

Waxes and oleochemicals are used in the production of everything from paints, cosmetics and pharmaceuticals to flavor enhancers, detergents and textiles. This diversity of product presents a range of challenges but such is the versatility of the Rotoform system that virtually any wax or oleochemical product can be successfully granulated.

Ideal form for handling and processing

The IPCO Rotoform process combines the Rotoform drop depositor technology with a steel belt cooler to create a granulation system capable of delivering granules of highly uniform shape, stability and quality.

The process itself is environmentally friendly and can be adapted to meet low or high capacity requirements. Product is fed onto the steel belt in the form of measured droplets. As they travel along the system, heat is transferred from the product to cooling water sprayed against the underside of the steel belt, and the droplets are solidified into consistently sized pastilles.



Indirect cooling for low environmental impact

As well as being extremely efficient from a quality and throughput point of view, the Rotoform process also enables processors to minimize their environmental impact.

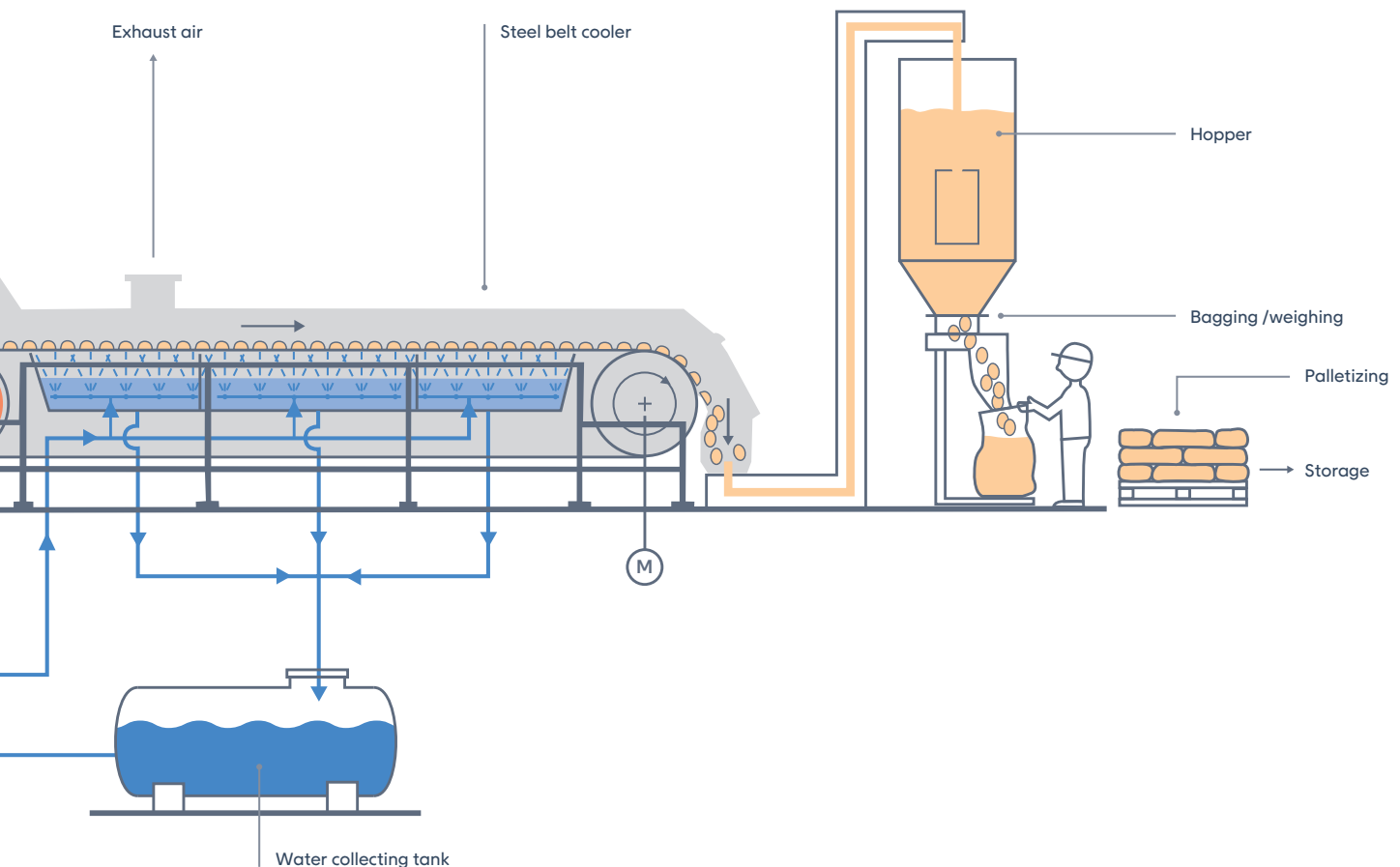
The indirect cooling process means that the product and cooling water cannot come into contact, so water can be recirculated over and over again and the quality of the end product is never compromised.

The excellent thermal conductivity of the steel belt means cooling times are short, so energy costs are low and very little vapor or gas can get into the atmosphere. Dust emissions are minimal too, and solidification direct from the melt eliminates the energy – and equipment – costs associated with subsequent grinding, crushing or other breaking processes.

The advantages at a glance:

- Hemispherical granules of uniform size for good handling and easy metering.
- Free-flowing product for easy transportation, blending, storage and subsequent reprocessing.
- Low friability ensures minimum dust generation.
- High bulk density and excellent packing properties.
- Indirect cooling for minimal environmental impact.
- Efficient operation means low energy consumption.
- No grinding/crushing required.
- No exhaust air treatment required.

Typical Rotoform plant



Ultimate performance and versatility for all kinds of waxes and oleochemicals

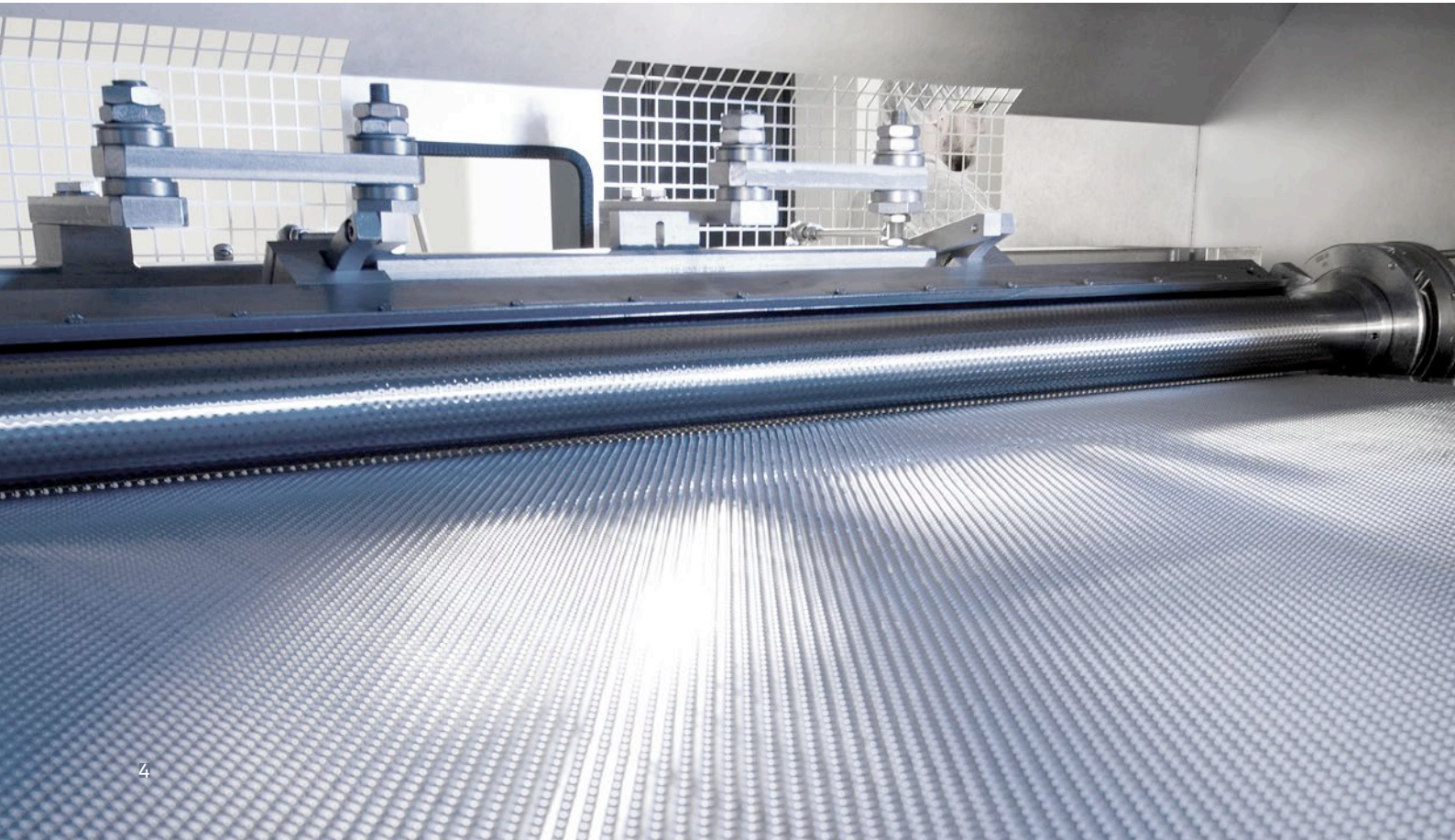
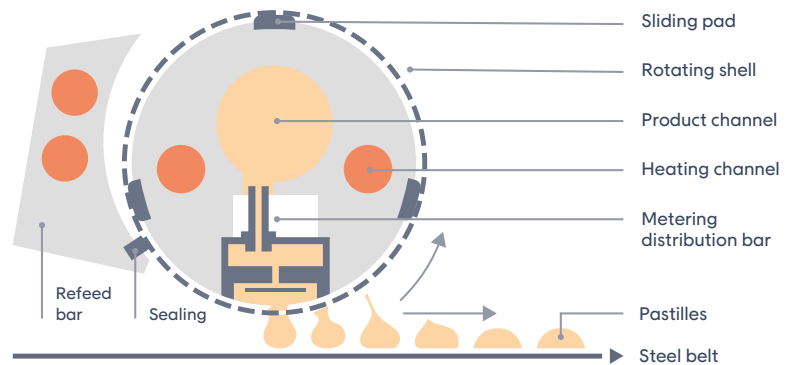
Oleochemicals vary widely in their application, from use as detergents, rubber additives, lubricants, food additives and surfactants to intermediates for cosmetics and pharmaceuticals. Applications for waxes are equally varied, ranging from high gloss paints to nail varnish. The IPCO Rotoform system can be used to process virtually any type of wax or oleochemical.

Rotoform was first used for chemical granulation in the early 1980s and has become the default solidification solution for a wide range of chemical products: today, every major oleochemical producer in the world – in Europe, USA, China, Japan, India and Malaysia – makes use of this technology.

The IPCO Rotoform system offers exceptional flexibility, with the ability to handle a wide range of viscosities and produce pastilles with a variety of different sizes.

Accurate control of cooling temperature/timing profiles ensures a high quality end product. And the system's design enables quick and easy switchover from one product to another, or from one pastille size to another.

Basic principle of Rotoform





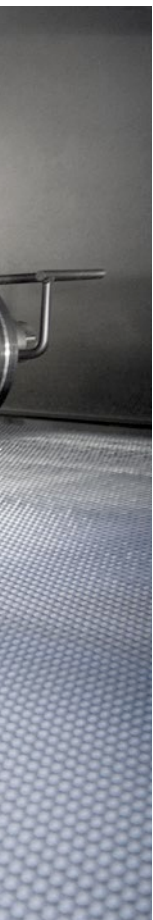
Waxes:

- Paraffin wax.
- Microwax.
- PE wax.
- Montan wax.
- AKD wax.
- Beeswax.
- Depilatory waxes.
- Flavored waxes.

Oleochemicals:

- Fatty acids.
- Fatty alcohols.
- Polyethylene glycols (PEG).
- Stearines.
- Amines.
- Alkoxylates.

One solution for
a wide range
of applications
and capacities.



Specialized solutions and complete process systems

Our engineers have extensive experience in the design and supply of granulation systems to meet specific needs.

Single source responsibility

Our ability to design and deliver a complete, end-to-end solution ensures convenience and peace of mind.

Drum heating

Preheating of steel belts for better heat exchange for products that show a tendency to curl away from the belt during the pastillation process.

Two-zone cooling

Some products show a tendency to curl away from the belt if cooled too quickly (known as shock cooling). By creating a two-zone cooling system that meets clearly defined cooling profiles, we can ensure optimum product quality while at the same time increasing capacity.

Blanketing with dry air

The quality of some products can be compromised by condensation caused by cooling from the bottom and under hot ambient air conditions. 'Blanketing' with dry air eliminates this risk.

Multiple lines

High capacity solutions can be delivered by operating multiple lines in parallel. A plant of five Rotoform units – complete with downstream bagging equipment – can be managed by a single operator

Turnkey solutions

We can design, supply and install complete pastillation plants, encompassing everything from storage, pre-treatment and feed of the melt to downstream handling, packing and storage systems, plus all necessary process control.

Rotoform installation
in clean room.



IPCO's Rotoform on steel belt cooler.



Qualified for Good Manufacturing Practice (GMP)

In more than 100 countries around the world customers now demand that manufacturers and processors involved in the production of pharmaceuticals, cosmetics and foods must be able to demonstrate compliance with Good Manufacturing Practice guidelines.

These ensure that the highest standards of quality and hygiene are maintained across every aspect of manufacturing in these sectors.

The properties and design of the Rotoform system enable its use in production lines requiring Good Manufacturing Practice compliance. This has been a key factor in the purchasing decision of a number of major customers, including leading pharmaceutical companies who have

selected the Rotoform system for the production of their range of drugs.

GMP for pharma and food industry environments

The highest standards of quality and hygiene are maintained across every aspect of manufacturing:

- Special steel belt grades.
- All stainless steel frame.
- Special materials for Rotoform components.
- No angles and corners.
- Nozzle bar made of special materials.
- Cleaning devices for belt and Rotoform.
- Good access for cleaning.
- Clean room certification.

Learn more about Customized Service Solutions

- Professional installation and commissioning.
- Planned servicing and preventative maintenance.
- Global repairs and spare parts service.
- Retrofit options and system upgrades.
- In-house training and tailored seminars.
- Service contracts.
- Plant operation.



WAXES—AND— —OLEOCHEMICALS— GRANULATION— —SYSTEMS—FOR