INGETECSA

# Multi Chamber Cooler

- Very high availability
- Cost effectiveness
- Proven technology

# INGETECSA has a superior cooler design that has proven itself over several decades of successful installations. Frequently installed in very demanding applications under harsh operating conditions, the Multi Chamber Cooler delivers where it is needed most.

Its **robustness** and **simplicity** of design result in **very high availabilities**, accommodating a true all year-round non-stop production. The design of the Multi Chamber Cooler allows for handling most, if not all, of the possible production issues that may occur upstream, without failing. Should inspection be required, large chambers offer easy access to the product side of the cooler.

- **High temperature gradients, from ~1000°C to 50°C in one step**
- **Capable of cooling large flows, including erosive and corrosive material**
- **Constant quality end product with variable throughput and wide ranges of particle sizes**

# Advantages

### Tougher than tough
Designed to operate under very demanding conditions

### Risk free
With a solid track record of references, the Multi Chamber Cooler comes with a promise it will work perfectly.  Day in, day out

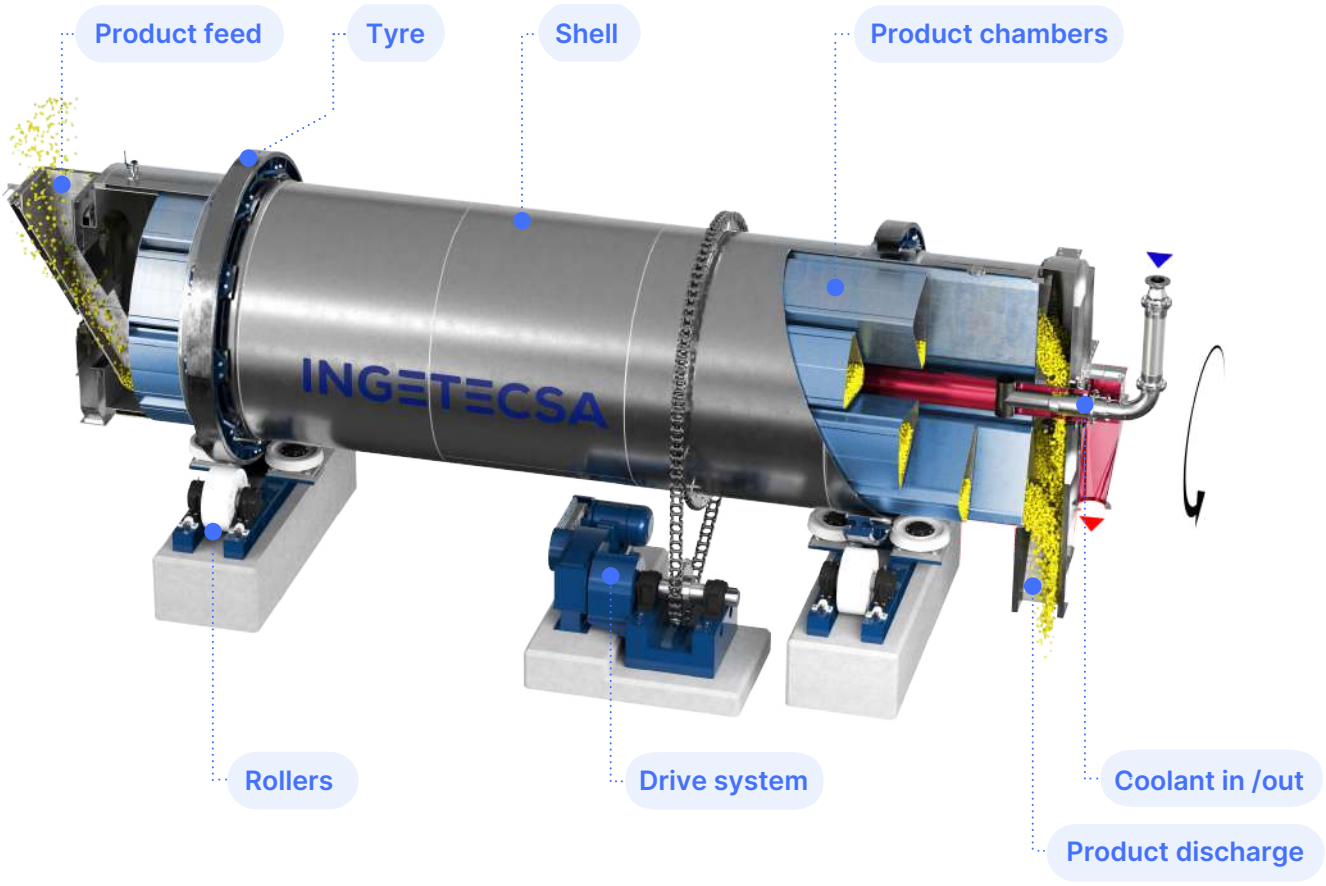
### Maintenance requirement
The design of the Multi Chamber Cooler is such that maintenance is reduced to a minimum and can be dealt with during scheduled shut-down periods.
A comforting thought

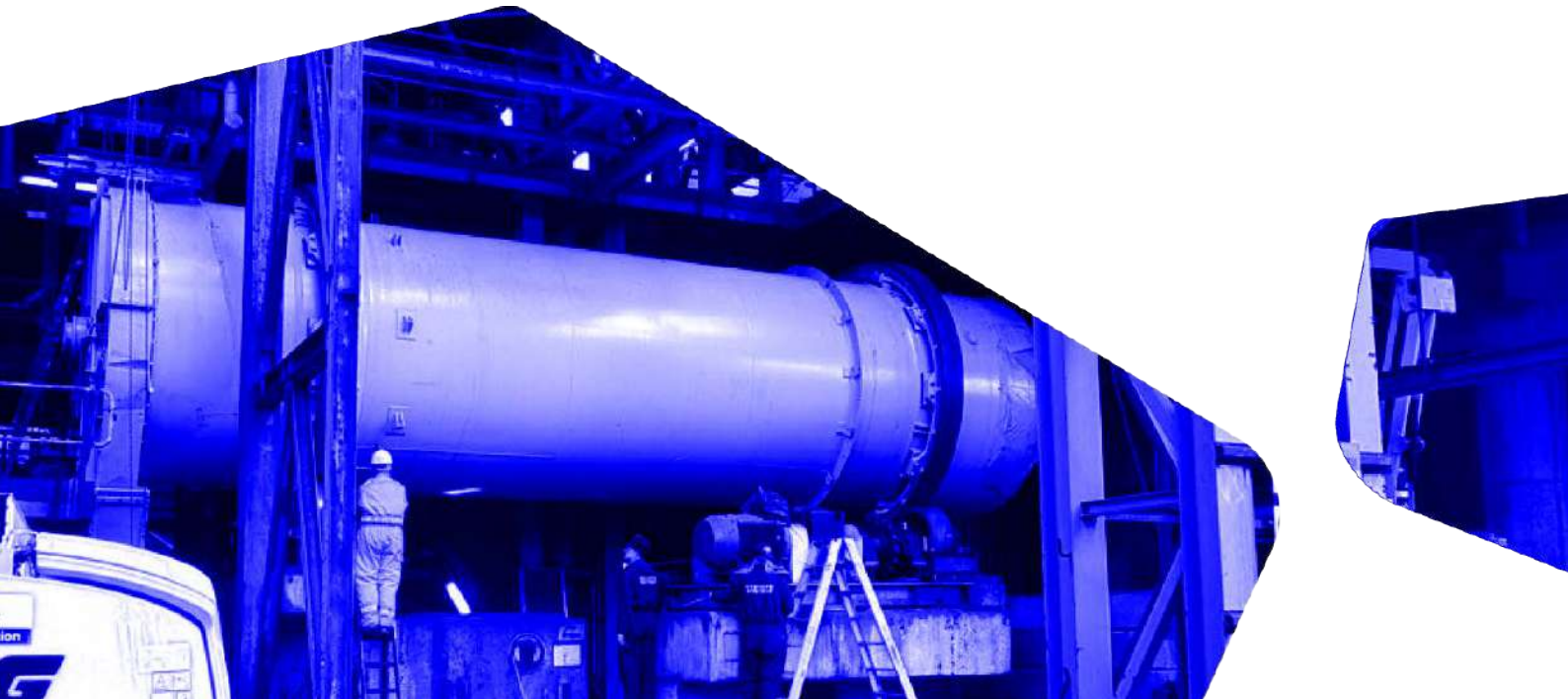
### Operational flexibility
Can handle large fluctuations in throughput and a range of particle sizes

### Let's keep it separate
There is no contact between product and coolant.
The water system is a closed circuit

### Gentle product treatment
Slow speeds ensure minimal erosion or dust formation

"The Multi Chamber Cooler has proven to deliver under harsh conditions where needed most."


Product feed
Tyre
Shell
Product chambers
INGETECSA
Rollers
Drive system
Coolant in /out
Product discharge



# Working principle

The Multi Chamber Cooler is basically a rotary drum, subdivided into chambers, in which hot product travels through by slow revolution of the drum. Hot product enters the drum at one end and discharges by gravity at the opposite end. Cooling water enters the cooling chamber via a double walled central tube.

The chambers are entirely water cooled and designed for optimal cooling of the product by distributing thin layers of water over the contact surfaces. The special design of this technology creates **large interior cooling surfaces and high heat transfer rates** from the product to the cooling water. Discharge of the cooling water is by atmospheric overflow. The drum itself only sees cooling water, precluding the requirement for insulation.

## Longevity ↘

The crux of the INGETECSA Multi Chamber Cooler is in the design. Where other technologies fail due to high material stresses or abrasion, the design of the INGETECSA Multi Chamber Cooler is such that low relative speeds are always employed, and **the entire unit operates at a uniform temperature level,** keeping material stresses well under critical limits. Because of this, products with inlet temperatures exceeding 800°C can be successfully cooled in the Multi Chamber Cooler to around 50°C without the risk of cracking.
**Day in, day out. Non-stop.**

"Robustness and simplicity are key elements for longevity and availability. This is where the Multi Chamber Cooler excels."

# Typical applications

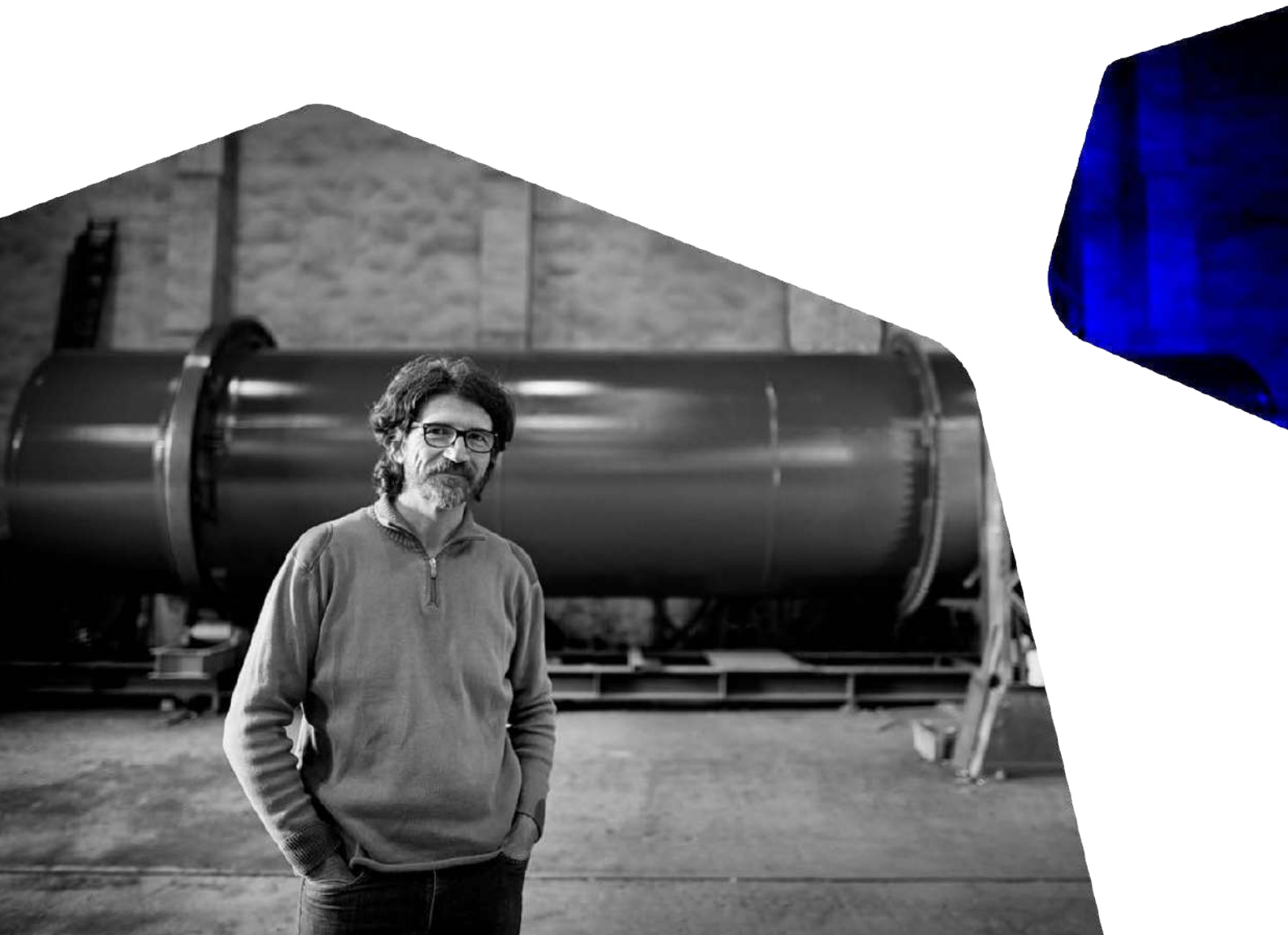
## Chemical industry

## Minerals & Metals

**EXAMPLES**

- Sodium hydroxide, aluminum fluoride,
- carbonate, ashes, slag, iron salts,
- zinc oxide, titanium oxide, iron oxide,
- minerals, clays, mud, etc.

- **Bulk flow products**
- **Erosive and corrosive products**
- **Processes that require maximum availability and reliability**



## Let's test together ↘

# INGETECSA's pilot plant and R&D centre, located in Barcelona, is available to our customers to simulate and optimize production processes, test our technology and define the ideal configuration of the customers' required industrial equipment.

Apart from the continuous tests with the pilot units, INGETECSA also has a laboratory where it is possible to analyse the results obtained and carry out small-scale simulations.

**Test rigs are also available for test work at the client's premises** in the event that longer duration tests are required, or if the product can't be transported to our test centre. Our engineers assemble the equipment, conduct the tests or instruct the client's personnel on the correct operation of the machine.

INGETECSA





INGETECSA S.A. (Head Office)
Barcelona, Spain
T. + 34 932 466 544

INGETECSA ASIA PACIFIC LTD
Tauranga, New Zealand
T. +64 272 801 389

www.ingetecsa.com