



## Thermal treatment to its finest

### Proven design - tailor-made solutions - best product qualities

thyssenkrupp Industrial Solutions has developed the POLCAL<sup>®</sup> system, after decades of experience, especially for the **thermal treatment of fine-grained materials**. Feedstocks with grain sizes from 0 to 2 mm – in special cases even 4 mm – are thermally treated by the gas suspension method.

POLCAL<sup>®</sup> gas suspension calciners consist of several cyclone stages arranged one above the other as well as a riser duct calciner, for drying, preheating and for the final reaction of the material. A finished product is generated without the requirement of an additional unit such as a rotary kiln.

The modular design of the system and the spectrum of different cyclones allow maximum flexibility in designing plants specially tailored to the requirements of our customers.

Fossil fuels are usually fed into the calciner via several injection points. Installation of an additional combustion chamber is recommended for starting of operation, or if the material must be separated from the direct contact with the flame for process- technological reasons.

In addition, one or more cyclone stages can be used for product cooling. The heated air from these stages is used as secondary air in the combustion process. In the case of very moist materials, it is possible to install a flash dryer upstream. A rotary kiln or a conditioning drum can be installed downstream for setting the required material reactivity.

To ensure correct dimensioning of the POLCAL<sup>®</sup>, the properties of the raw materials and fuels are tested in the central research centre of thyssenkrupp Industrial Solutions. As a result, all the systems and plant components are optimally designed.

## Fields of application

Drying, preheating, calcination, dehydration cooling as well as burnout of organic components for:

- Limestone, lime sand, magnesite and dolomite
- Phosphate ores, nickel ores, lithium ores, iron ores, chrome ores
- Metallic hydroxides and metallic hydrates
- Kaolin, pyrite, ilmenite, siderite, sodium, etc.

## Main features

Perfectly suited to the calcination of fine material

Low energy requirement due to heat recovery

High separation efficiency of the cyclones and uniform material distribution across the calciner cross-section

High availability due to proven and reliable design, easy operation and low manpower requirement

Maximum flexibility with regard to capacity and product quality

No moving parts in the hot zone except for rotary airlocks

Small footprint

## Design parameters

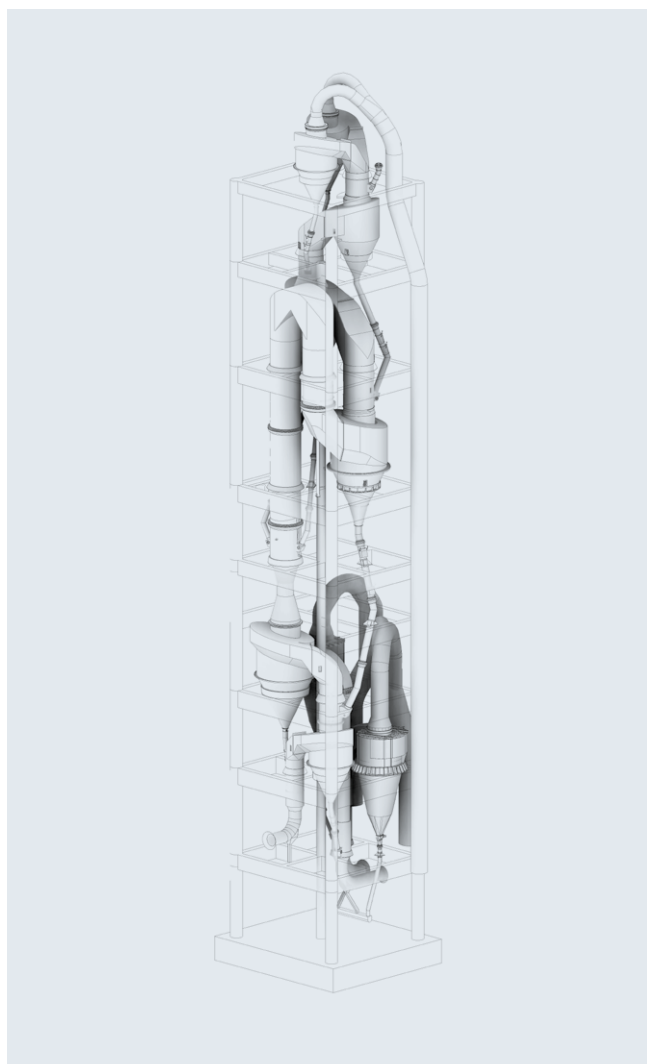
Up to 6 cyclone stages are possible

Daily output: 100 to 8,000 tons

Process temperatures: up to 1,200 °C

Grain size range of feed material: up to 2 mm

Calciner diameter: up to 8.4 m



## Contact

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Sales Agent

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