



De Dietrich  
PROCESS SYSTEMS

# ROLAB WITH MICROWAVE

Filter / Dryer: RoLab with Microwave enhanced drying on an agitated  
Nutsche

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Whether for the pharmaceutical or chemical processes, the reduction of your production time while drying your product is a key expectation.

You can now benefit from our state of the art Rolab Filter / Dryer combined with a microwave to reach high drying efficiency.

## DESCRIPTION

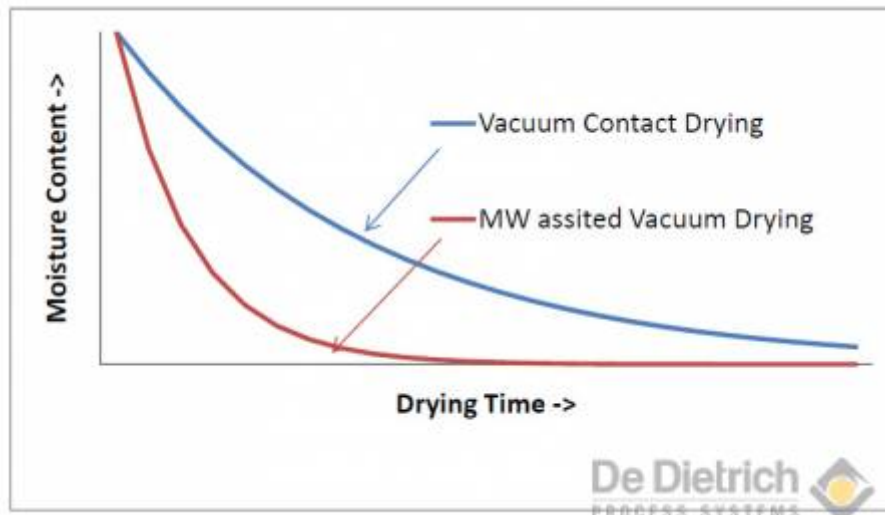
The RoLab equipment provides the advantages of combining the mechanical solid /liquid separation phase as well as the thermal drying phase under vacuum. Microwaves can be added as an additional energy source to further reduce the drying time significantly. Through careful control of product temperature and forwarded and reflected microwave power, this technique is ideal for the fast processing of pharmaceutical products.

The RoLab can also be used as an outstanding solidliquid solvent extractor for trials or small scale production of plant-based ingredients. The microwave generator gives new possibilities of product development, as well as drastically improving the desolventation operations (drying of the spent material to remove the solvent content).

Applications: Filtration and drying trials as well as reliable scale-ups either for small batches of active ingredients or intermediates.

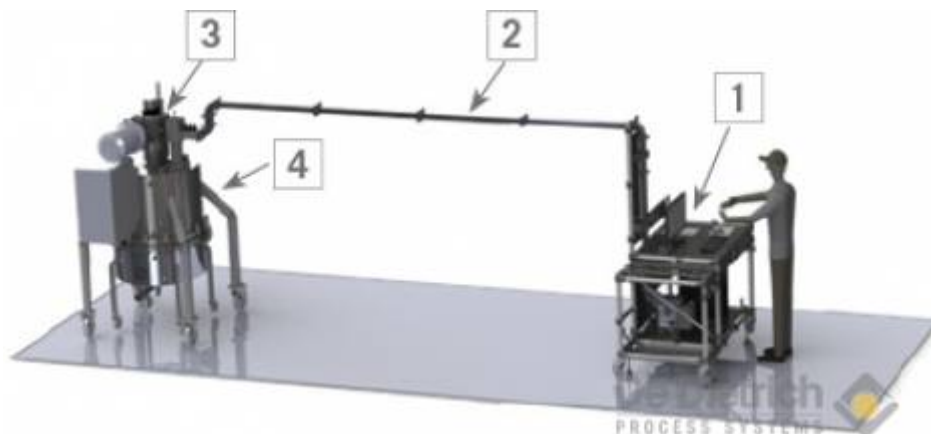
## BENEFITS

- User friendly and simple
- Combined equipment for filtration, vacuum- and microwave drying
- Reduction of drying time
- Faster processing
- Small floor space required



## Microwave Setup on RoLab 0.4

1. Microwave Generator
2. Waveguide Piping
3. Microwave Tuner and Connector to Process
4. RoLab 0.4 Filter / Dryer



## CHARACTERISTICS

### RoLab 0.4

- Filter area 0.4m<sup>2</sup>
- Cake volume max. 128 L
- Slurry volume max. 364 L
- Vessel volume total 387 L
- Heating area 2,4m<sup>2</sup>
- Stroke of agitator (nominal) 300mm
- Speed of agitator reversible 9-35min-1
- Main motor power 5.5kW

## Microwave Power Supply

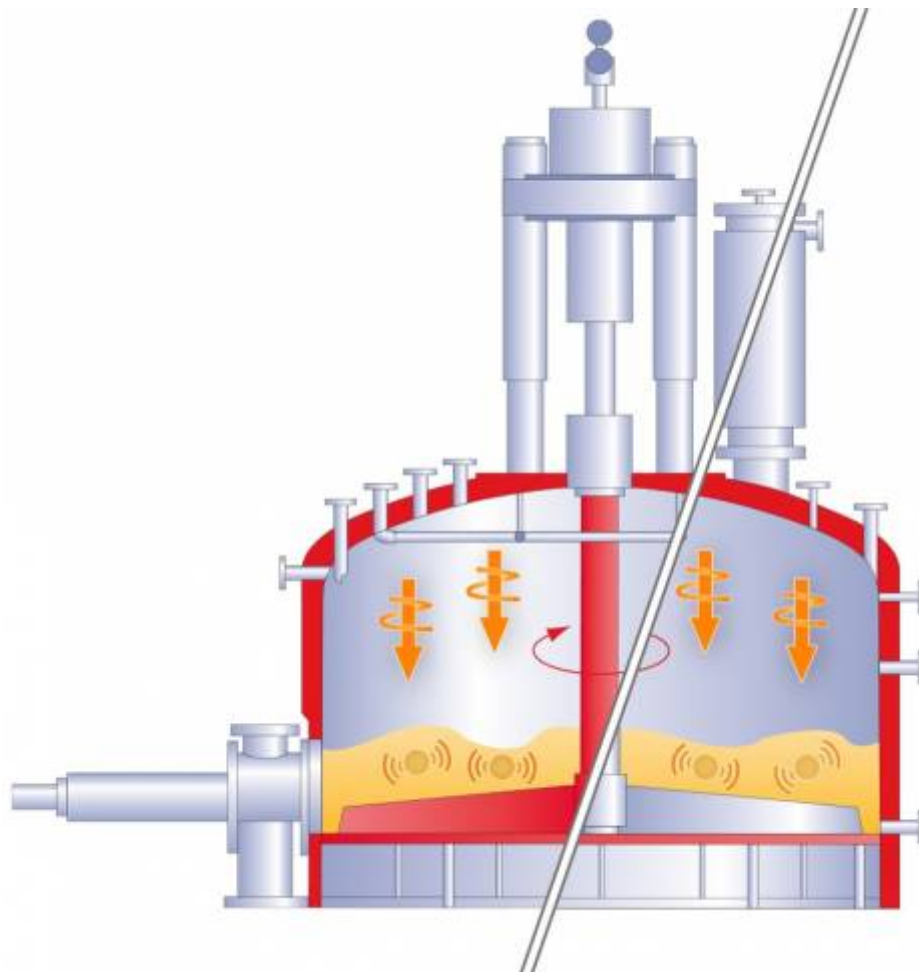
- MW Power: 2 kW
- Frequency: 2.45 GHz +/- 20%
- Cooling water: 4 l/min, 4 bar

## THE SIMPLE AND EFFECTIVE FILTER / DRYER

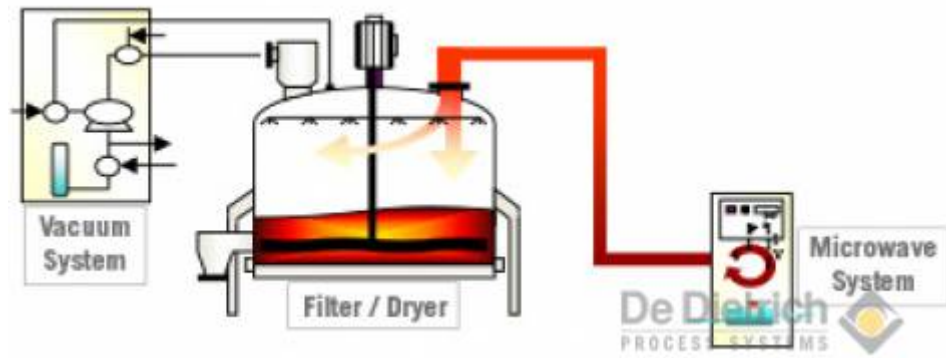
Traditionally, the heat source comes from the heated dryer walls and agitator and the heat transfer rate is related to the surface area and the volume of product being processed. As such, this direct heating method is most effective for small-scale applications.

As the heated wall and agitator are the only source of drying energy limitations exist for 'pure' vacuum drying on bigger machines. Microwave energy as a further source of energy can be used to overcome these limitations.

Also microwave radiation has, compared to the conventional drying method, a much greater penetration, resulting in faster drying of larger agglomerates and wet products with low thermal conductivity.



## Principle arrangement of microwave drying on a Filter/Dryer



## Questions? We are here to help.

If you'd like to talk with a sales representative about purchasing De Dietrich Process Systems's products and services, you can reach us here.



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