

202502 For sale

Continuous synthesis reactor based on microwave system in ATEX II class



Fully functional (built 08.2019), clean, below 500 hundred running hours in total

The entire unit allows for continuous and monitored synthesis of organic compounds, with use of organic solvents. If needed, the parts (such as tanks) can be heated and / or pressurized with nitrogen (inert gas).

System consisting of:

3 raw material tank reactors (2 stirred), each 100 L volume

2 end product tanks double walled, each 50 L, heated to max 200C and max 30 Bar

1 CIP (clean in place) tank

2 tank stirrers MoWe, 19x40 mm

Pumps LEWA LCA1 or Verder P200, in ATEX class

Microwave system with 2 generators (frequency 2450 MHz, max power output 12 kW), with Duran glassware tubes, all certified to EU norms

System is automated with dedicated software control for continuous synthesis of organic compounds, controlled with 24 V DC (Beckhoff PLC)

Many components such as sensors (temperature, pressure, level indicators) high quality: Wika, Vega, Jumo; also Goetze, BEE, DVC, Zürcher Technik

All connected with Swagelok and other high quality fittings

Class IP54

When fully assembled in a straight line, the size is:

Length 5.7 m, height 2.8 m, depth 1.7 m

Floor load: 500 kg/m²

Noise emissions (measured on all sides of the unit): < 80 dB(A)

Total power consumption 40 kW

Continuous synthesis reactor unit

Microwave output power 12 kW

Power connection needs: 400VAC / 3LNPE / 50Hz

Back-up fuse (Vorsicherung): 63A

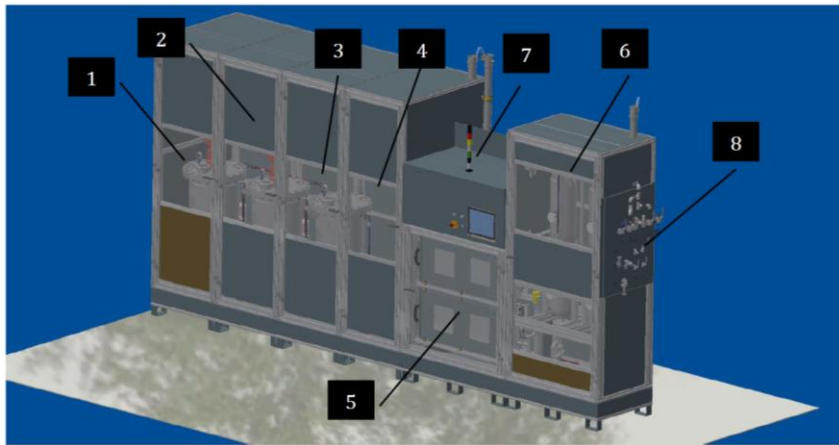
Maximal short circuit current (Maximaler Kurzschlussstrom): 6kA

Control voltage 24V DC

Most components in contact with chemicals (tanks, mixers etc): in stainless steel 1.4404 (SS316L), some in PTFE

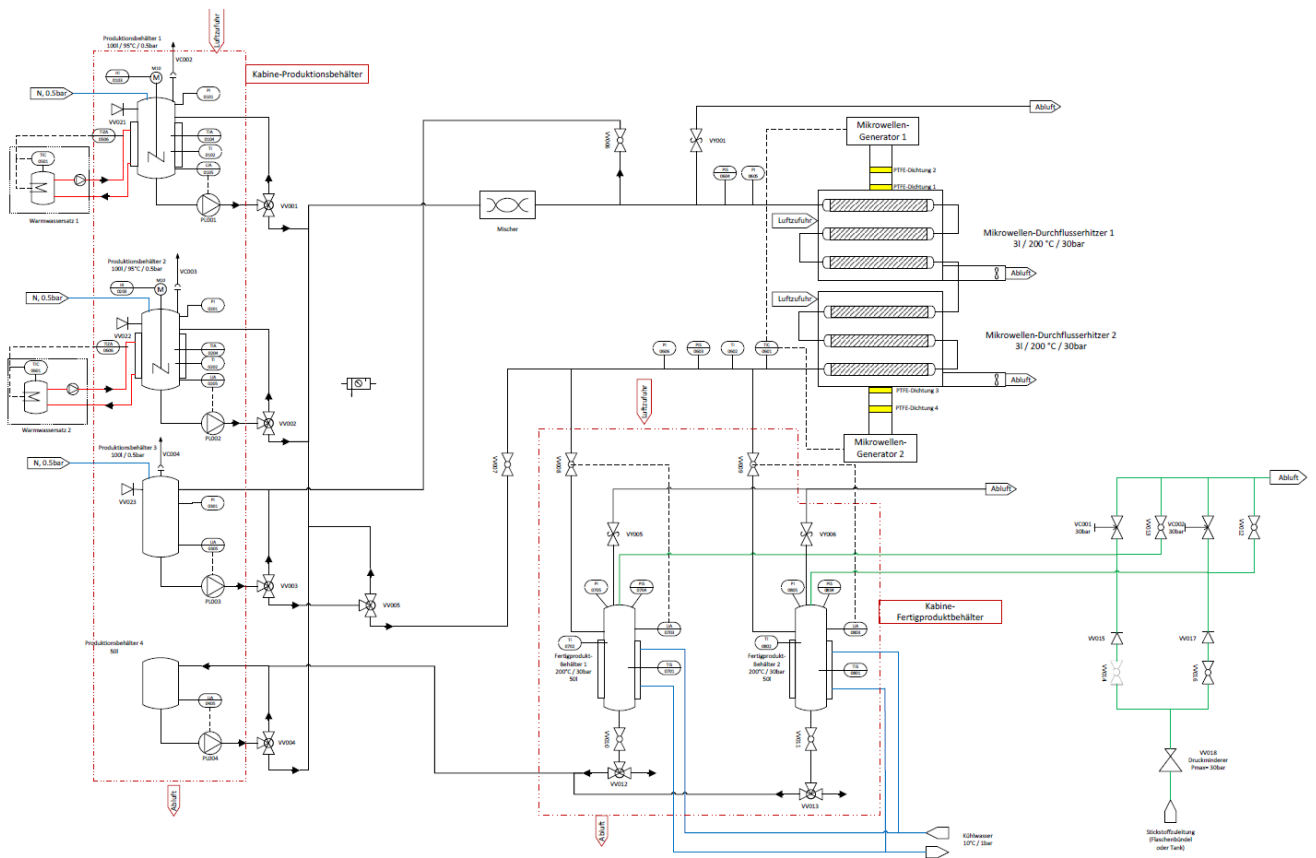
The system is for now assembled, but the aim is to disassemble it in the next few weeks.



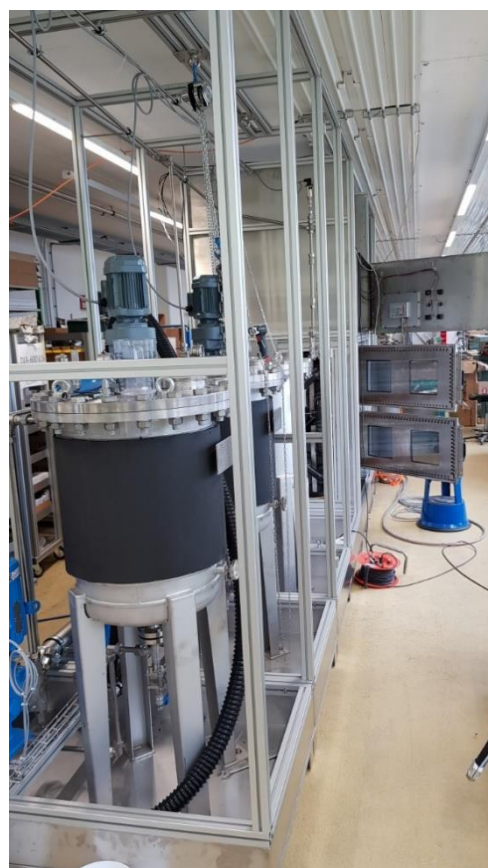
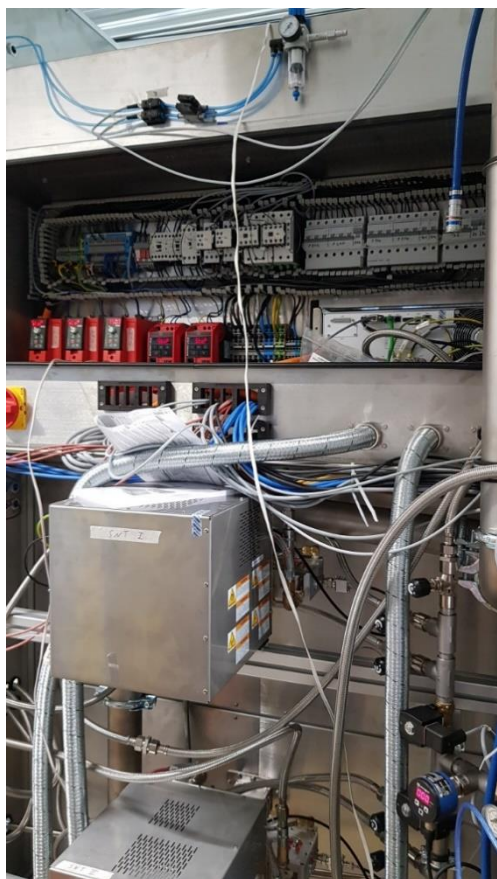


1. Production tank 1
2. Production tank 2
3. Production tank 3
4. Cleaning tank
5. Microwave continuous flow heater
6. Finished product tank 1 and 2
7. Control cabinet
8. Nitrogen gas distribution unit

PID



Some images of the tanks and compounds:



Continuous synthesis reactor unit

