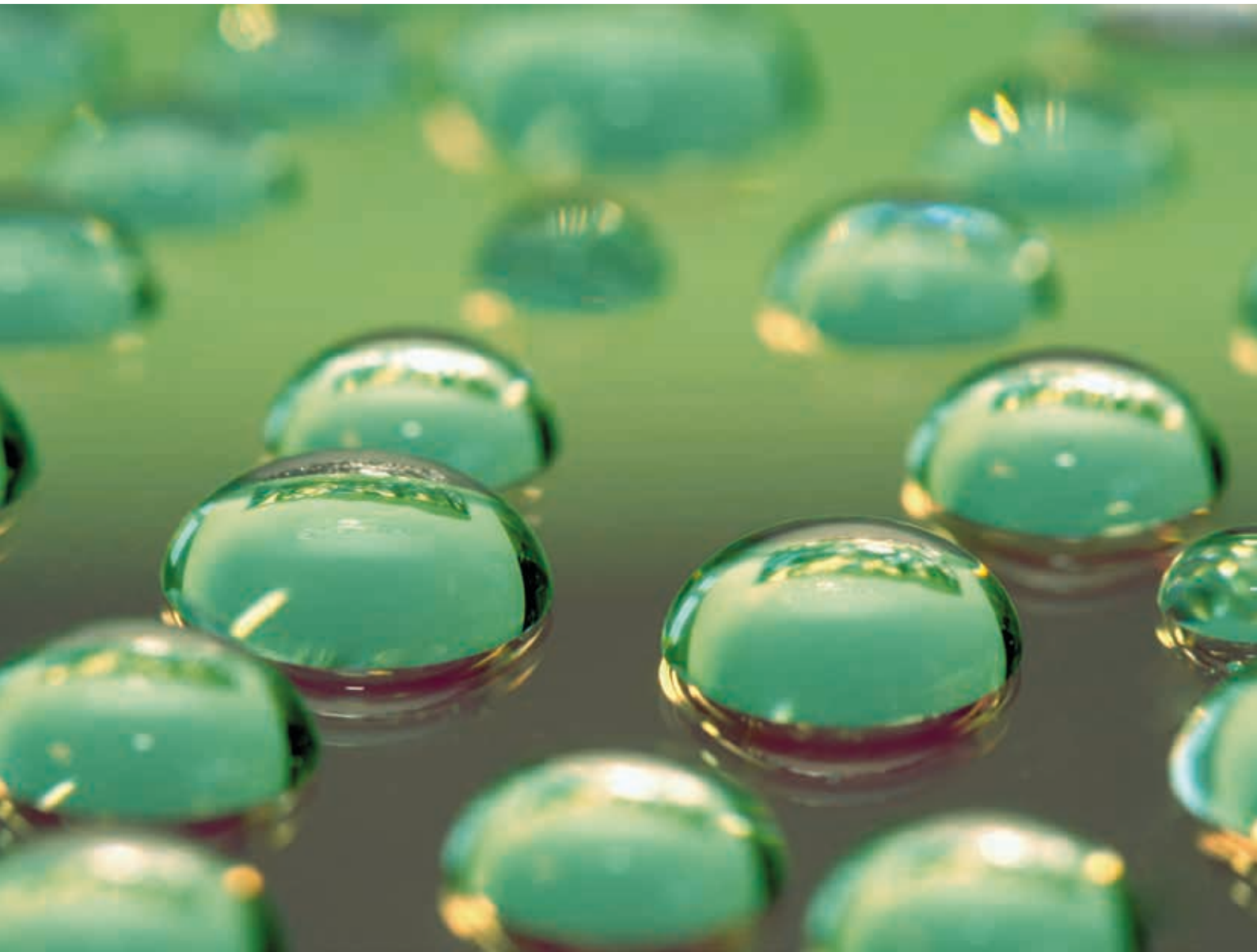




SIEBTECHNIK TEMA



Glycerine

The basics of Glycerine

Glycerine is an **organic compound** from the group of sugar alcohols. It is used in various industries, e.g. in the food industry, cosmetics or medicine.

Glycerine ($C_3H_8O_3$) is a transparent, viscous substance. Another common name for glycerine is propane-1,2,3-triol.

In nature, glycerine is mainly found in fats and oils. It also plays an important role as an intermediate product in various metabolic processes in most living organisms.

In the past, glycerine was either obtained petrochemically from propene with the intermediates allylchloride and epichlorohydrin, or chemically as a by-product in the saponification of natural fats and oils to produce soaps. Due to the production of Bio-Diesel and the resulting glycerine, glycerine production has shifted.



Food & Dairy - As a food additive, glycerine has the designation E 422 and is used for humectant and/or sweetener purposes.



Cosmetics - In cosmetics, glycerine is used as a moisturizer.



Industry - Glycerine is used as an educt in many manufacturing processes. It is also used as an antifreeze, lubricant and plasticizer.



Pharmaceuticals - In this field glycerine is used as a medicinal substance and laxative.



PRODUCTION

Raw materials for Bio-Diesel production	
Rapeseed plant or rape oil	Use mainly in Europe
Animal fats	Use mainly in Europe/USA/Japan
Soybeans/Soya oil	Use mainly in USA/Asia
Canola rape	Use mainly in Canada

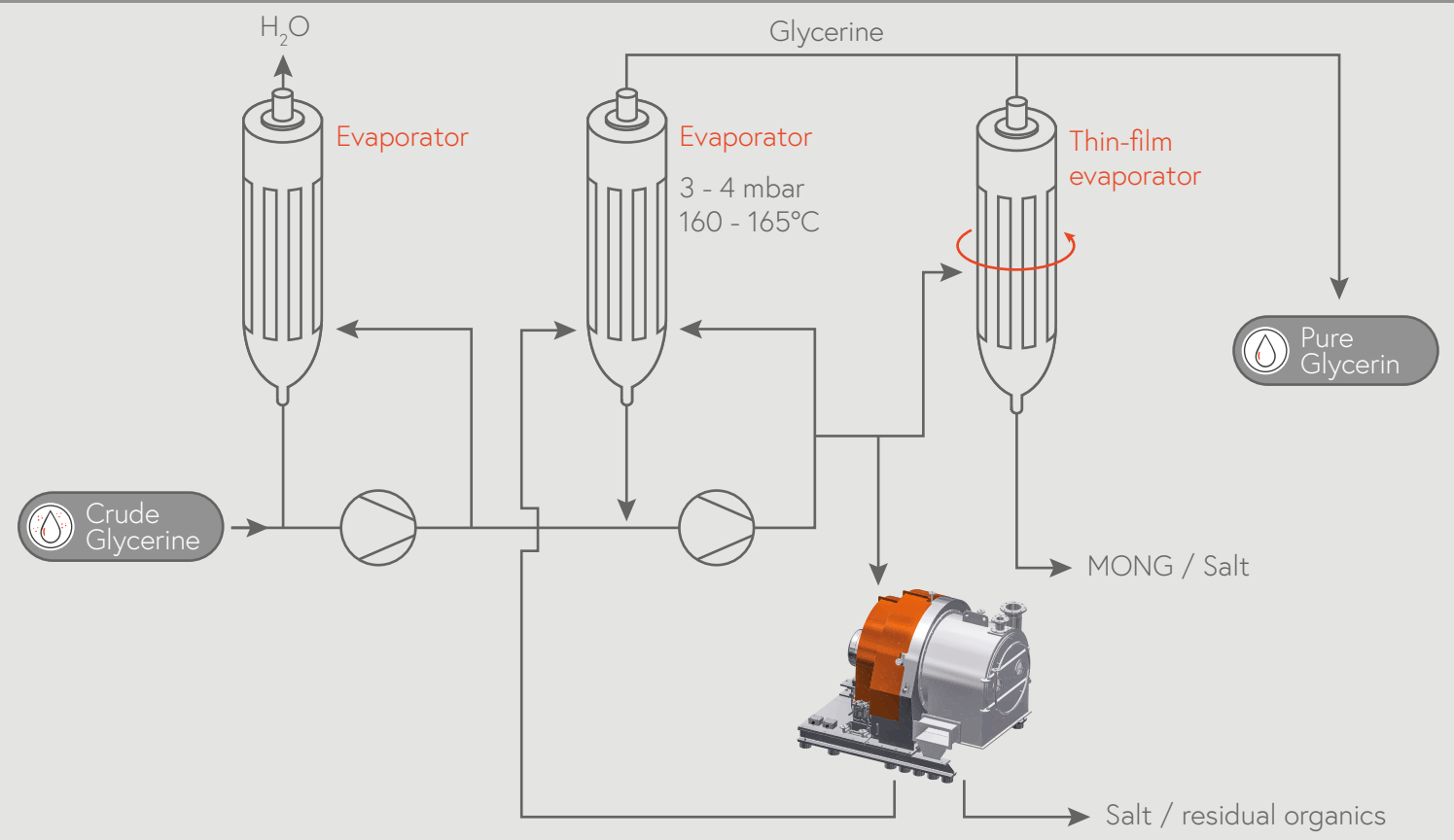
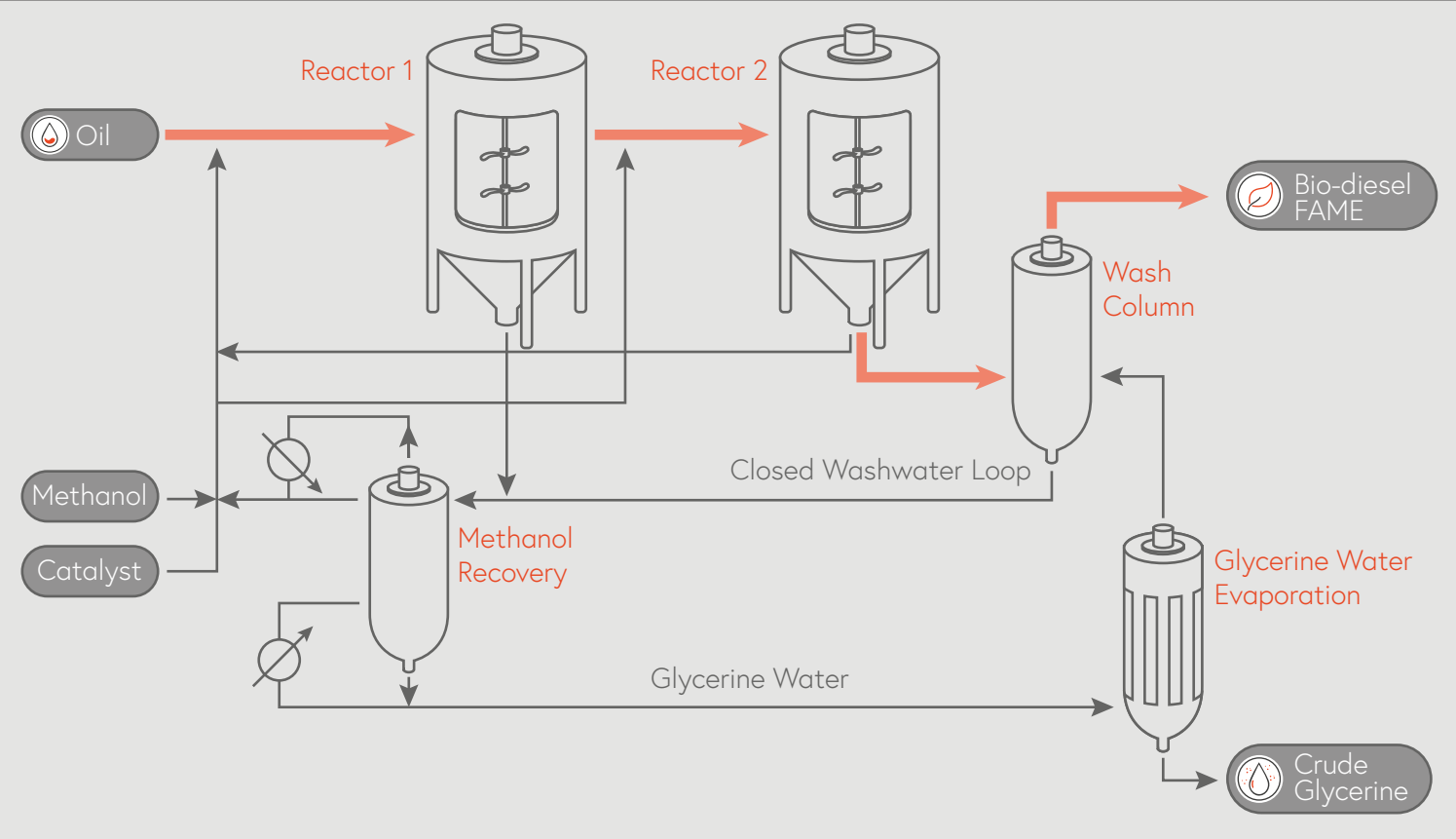
Example with rape as raw material

For 100 kg of glycerine, approximately 2.63 t of rapeseed are needed.

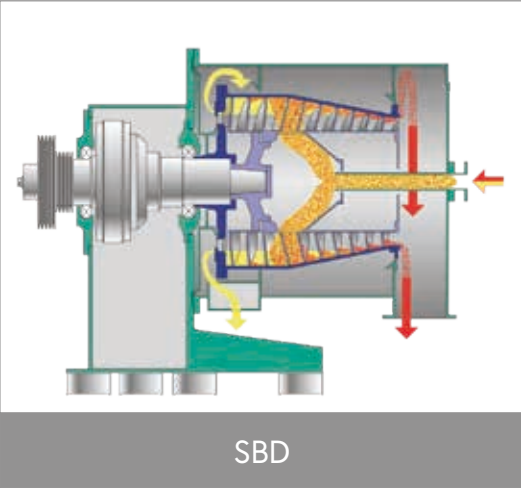


Bio-Diesel is produced by transesterification of fats/oils and methanol. This reaction is usually catalysed by a basic catalysis, with glycerine being a by-product.

The resulting raw glycerine contains water, salts and other residues (MONG). In order to produce glycerine of pharmaceutical quality (purity 99.5 %), various purification steps are carried out. Among other things, the existing solids are separated from the glycerine.



SHORTBOWL DECANTER CENTRIFUGE

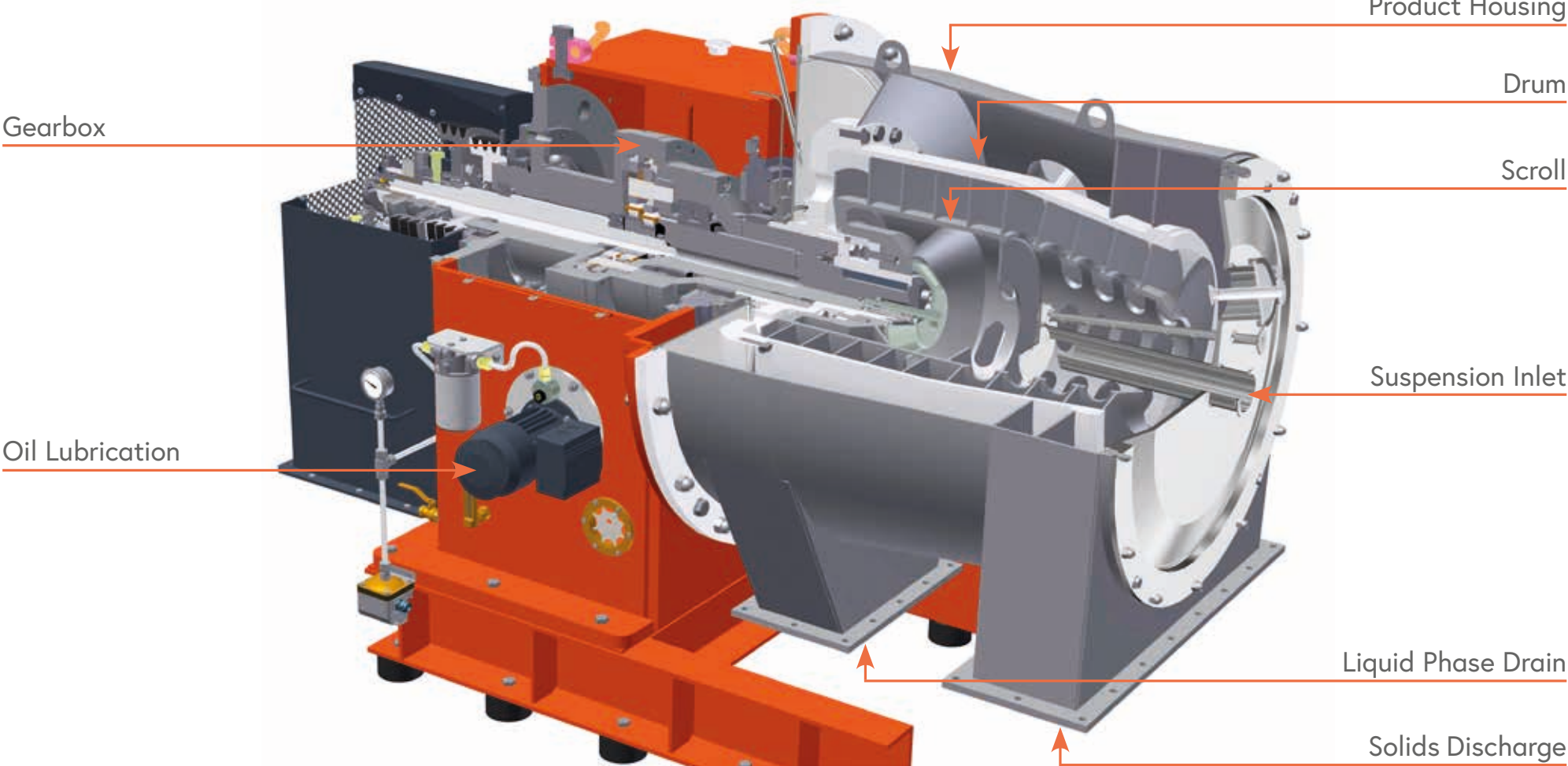


Advantages

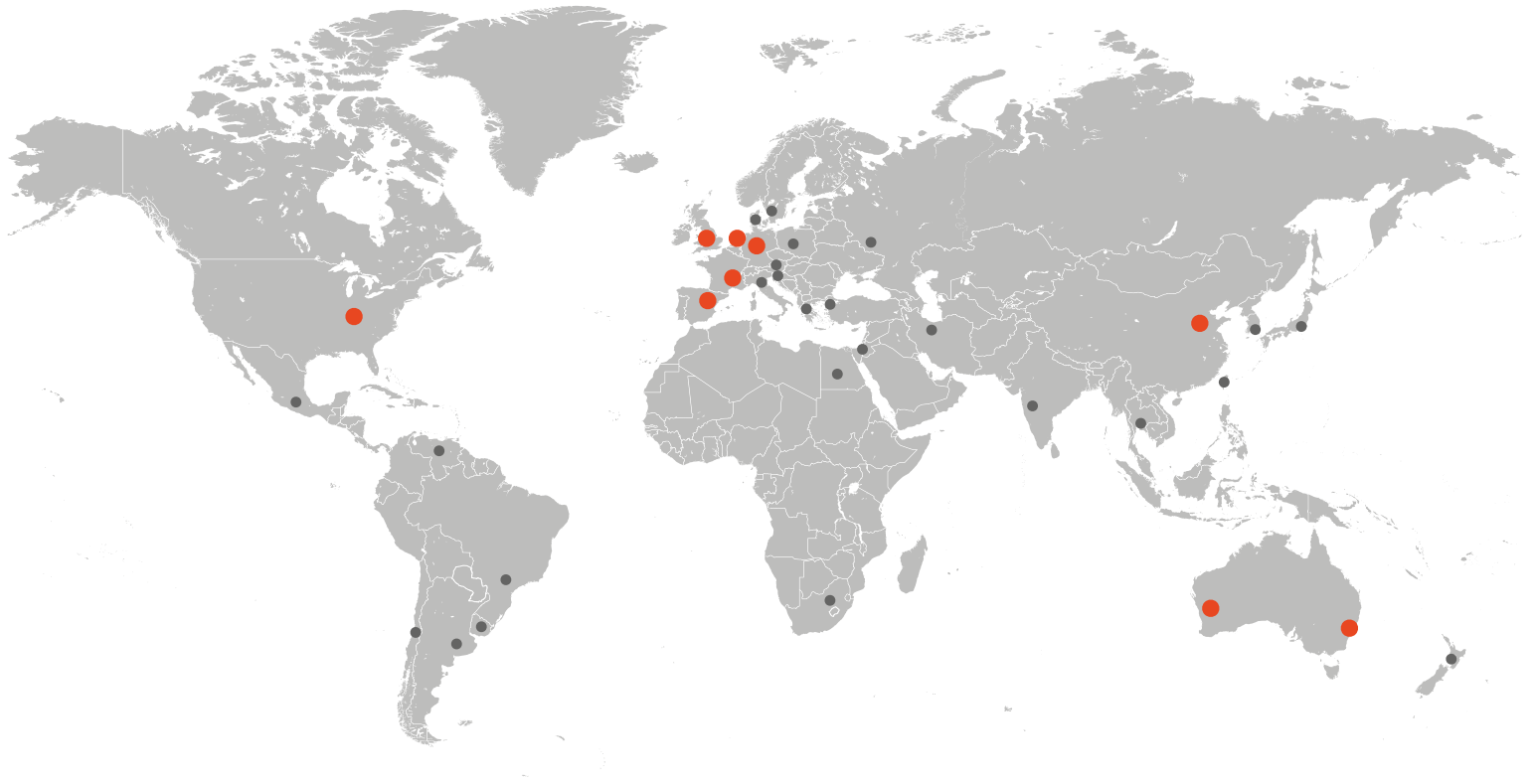
Material	SHORTBOWL decanters are used particularly successfully for solid/liquid separation in a suspension hot stream.
Cantilever Design	No bearings or shafts in the hot product area. Product and drive area are separated from each other.
Circulating oil lubrication	The still occurring temperatures can be easily controlled by the circulating oil lubrication and an integrated oil cooler.

Average product parameters		
Suspension Temperature	T =	170 – 200°C
Suspension Solid Concentration	C _{solid} =	10 – 30 Gew.-%
Particle Size	d ₅₀ =	80 – 300 µm

Typical Machine Sizes	SHORTBOWL decanter centrifuge	Liquid [l/h]	Solid matter[kg/h]
	250	0-1000	0-100
	400	1000-3000	200-1000
	500	3000-8000	1000-2000
	600	8000-15000	2000-3000



One Solution. Worldwide.



SIEBTECHNIK TEMA provides more than 50 local support offices worldwide as well as main sites located in:

Mülheim an der Ruhr, Germany | Rijswijk / The Hague, The Netherlands | Daventry, Great Britain
Mundolsheim, France | Madrid, Spain | Sydney & Perth, Australia | Cincinnati, USA | Tianjin, China

We are experts in the field of solid-liquid separation and the processing of bulk materials

Automation | Channel conveyors | Crushing & Milling Equipment | Control Screening Machines
Decanter | Dryers | Laboratory Equipment | Pneumatic Tube Systems | Preparation Systems
Process Equipment | Pulsator Jigs | Pusher Centrifuges | Sampling Systems | Screening
Machines | Screen Worm Centrifuges | Sliding Centrifuges | Vibrating Centrifuges