

# Pumping and mixing solutions for the biofuels industry

Biofuels from renewable sources show great potential as sustainable transportation fuels. Based on our experience in demanding processes, we offer you advanced pumping and mixing solutions for the production of bioethanol, biodiesel and biogas. We support our customers with the development of environmentally-friendly technologies for pilot, demonstration and commercial plants. Sulzer is a recognized and trusted supplier in the first and second generation biofuels market. With thousands of installations around the world, our products have stood the test of time.

## Proven expertise

We have core competencies based on close partnerships with key OEMs and end users.

By working with Sulzer, you benefit from:

- Superior application knowledge with long experience
- High product reliability and quality
- Custom-engineered solutions to meet specific needs

## Products that match

- State-of-the-art equipment for reliable operation in challenging conditions
- Wide choice of centrifugal and positive displacement pumps, agitators, submersible pumps and mixers, aerators and compressors
- Energy-efficient products with low life-cycle costs and a smaller environmental footprint
- Complete pumping systems for hot, abrasive and corrosive liquids with up to 18% dry solids content



## Service at your doorstep

Wherever you are, Sulzer is close by to bring personal, knowledgeable support and qualified services for the entire product life cycle, day and night. You can trust us to serve your installed base with our original Ensival Moret and Sulzer spare parts.



**MCE™ pumping system for E2G feedstocks pretreatment applications**

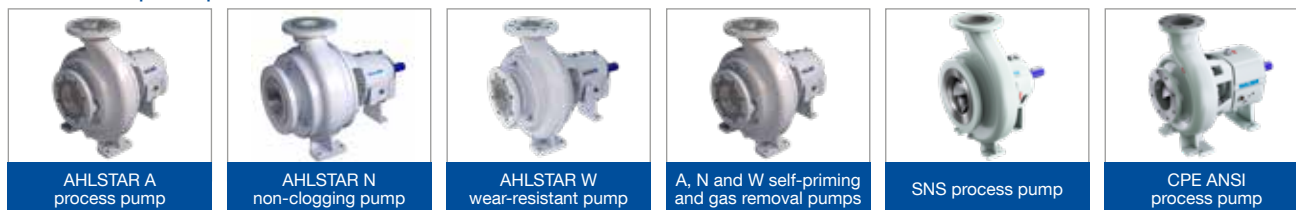
Process	P	M
Biomass pretreatment	✓	✓
Hydrolysis and saccharification	✓	✓
Fermentation	✓	✓
Distillation	✓	
Residue handling	✓	✓
Dehydration	✓	
Oil extraction and transesterification	✓	✓
Hydrotreatment and isomerization	✓	✓
Final products storage	✓	✓
Auxiliaries (power, cooling, CIP, etc.)	✓	✓
Water and wastewater treatment and re-use	✓	✓

P = pumping, M = mixing

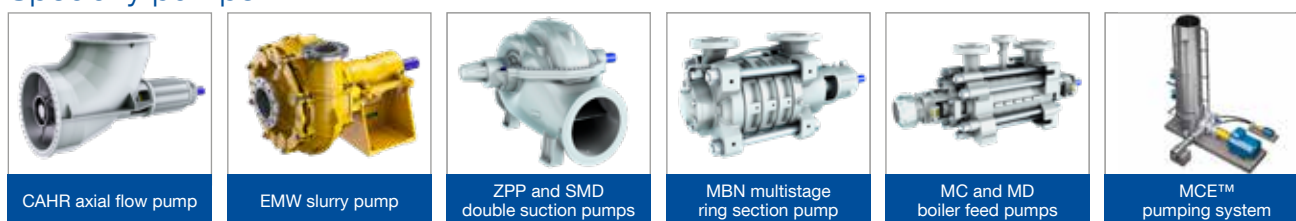
# Extensive product coverage

Through a wide portfolio, we propose you the most adapted pumping, mixing and aeration solutions. Our high-efficiency products with various materials (duplex, corrosion-resistant and/or high hardness alloys, etc.) and numerous options (dynamic seals, degassing systems, etc.) improve the performance, reliability and sustainability of your bioethanol and biodiesel plants.

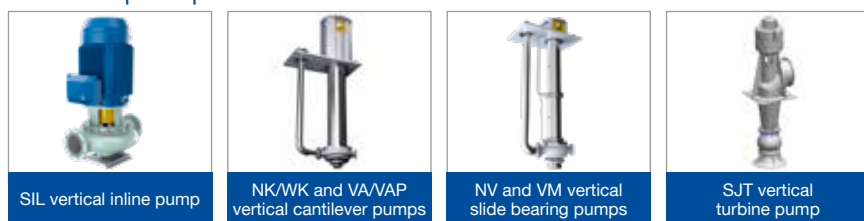
## Process pumps



## Specialty pumps



## Vertical pumps



## Accessories



## PD pumps



## Agitators



## Submersible pumps and mixers



## Aerators and compressors

