

## EKATO EPOX-R

A low-wear impeller which is ideal for use in pressure oxidation autoclaves susceptible to high wear rates. High cost efficiency through increased impeller operational life, which allows extended operation between maintenance intervals.

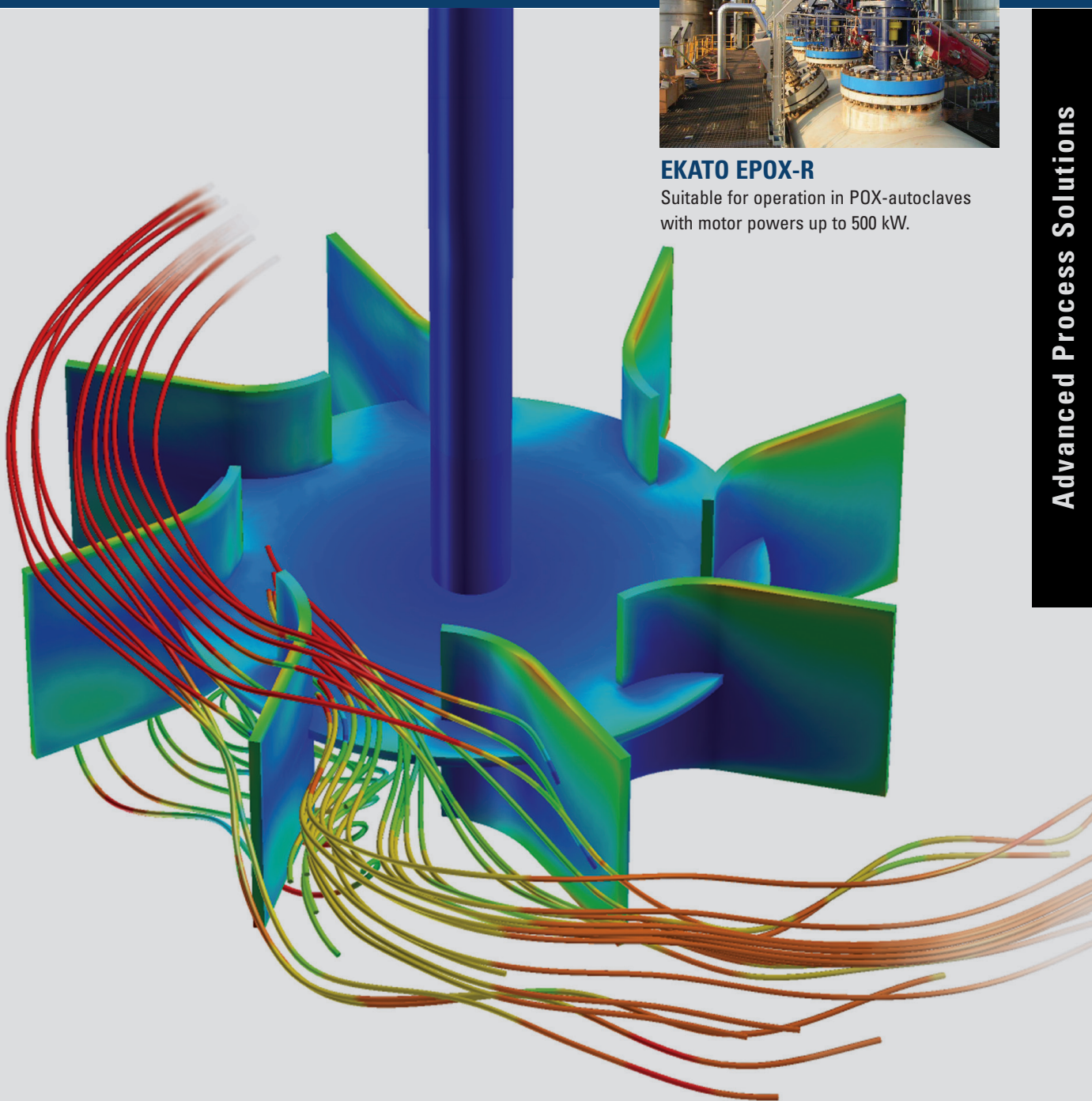
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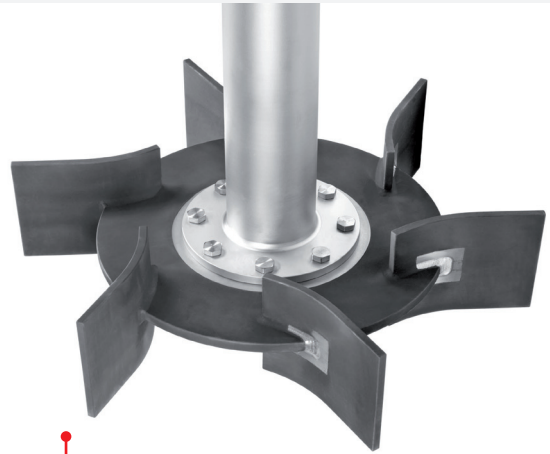
### EKATO EPOX-R

Suitable for operation in POX-autoclaves with motor powers up to 500 kW.



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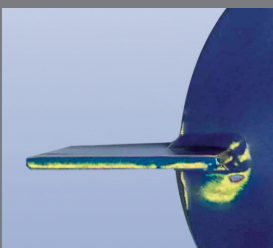
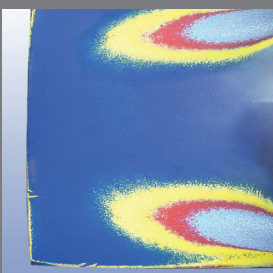
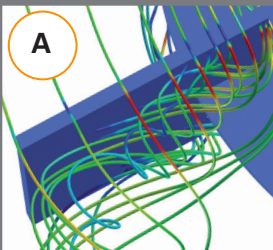
Through pilot-scale testing and substantiated by CFD modeling the flow-optimized blade shape eliminates backflow or vortices on the low pressure side resulting in the suppression of wear mechanisms.



### Comparison between a standard flat blade disc turbine and the EKATO low-wear design EPOX-R.

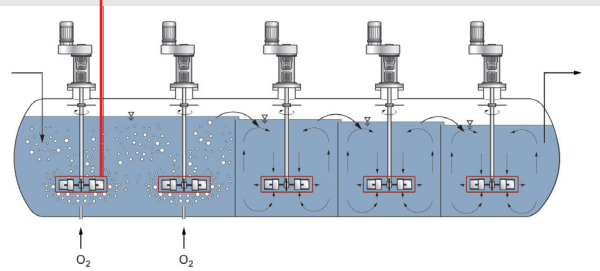
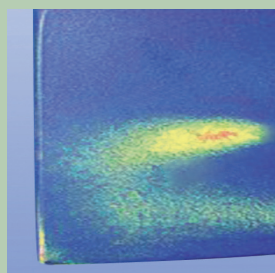
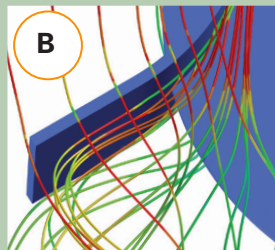
#### Flat blade disc turbine

Two pronounced vortices on the low pressure side cause distinct wear patterns



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In this case the media flows parallel to the impeller blade, thus vortices and consequently wear mechanisms are suppressed



**Increased operating efficiency is achieved by reducing erosive wear and therefore maintenance costs.**

The treatment of suspensions in minerals processing often leads to increased wear of various components.

The impellers in mixing applications are particularly exposed to extreme stresses and impact erosion since high power inputs and therefore tip speeds are required to fulfill the mixing tasks.

Specifically with pressure oxidation autoclaves (POX) high mass transfer rates must be ensured, which in turn means that high power inputs are required. Typically modified flat blade disc turbines with planar blades are used for these applications as they exhibit an acceptable power input to tip speed ratio.

Despite efforts being made to minimize impeller tip speeds, impact erosion can be detected coming from vortices on the low pressure side (A).

With the EPOX-R, EKATO has developed an impeller that reveals significantly reduced impact erosion while maintaining the otherwise typical impeller characteristics of a flat blade disc turbine. The vortices on the low pressure side (B) are suppressed which can be easily seen using CFD simulations. This decisive advantage has been achieved during pilot tests performed at EKATO test facilities and validated during operation.