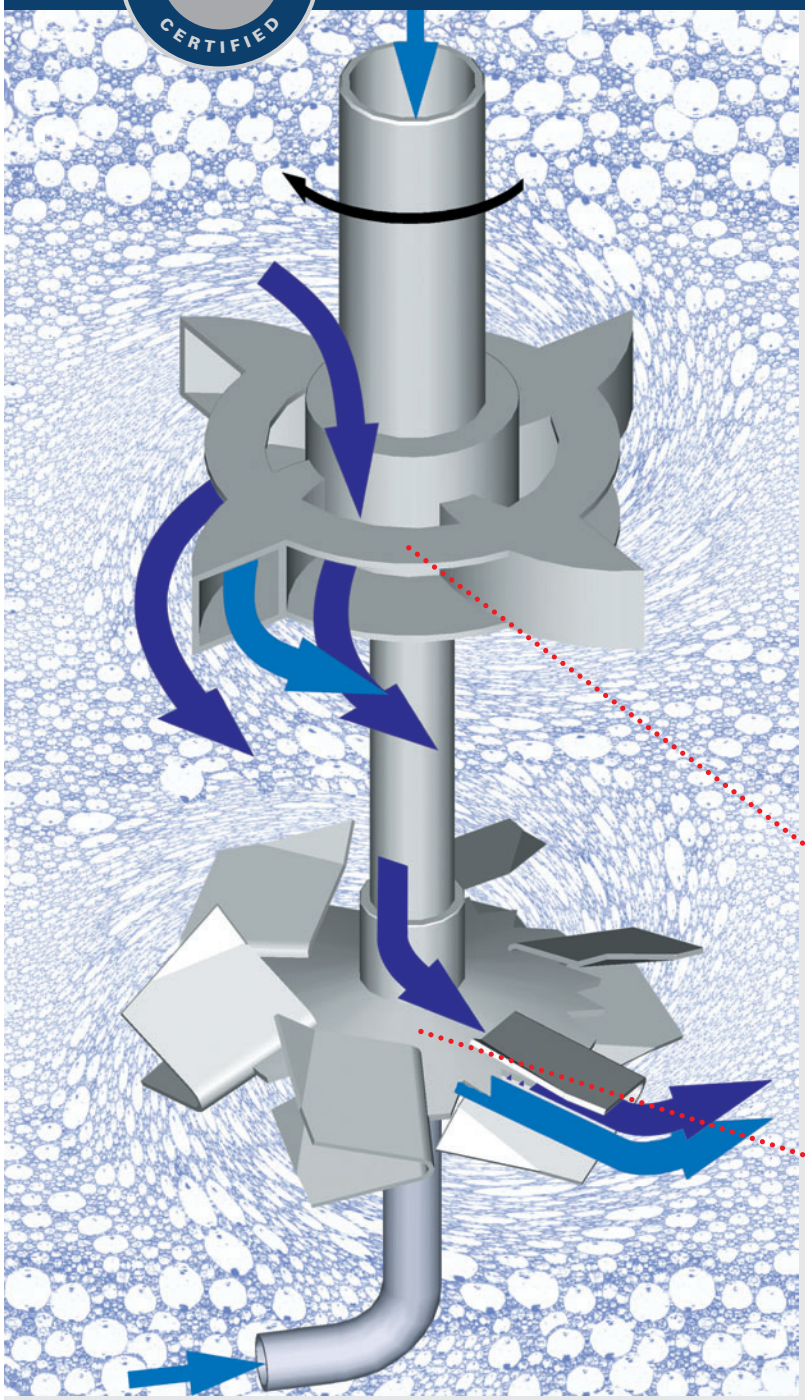
EKATO RMT

EKATO Rühr- und Mischtechnik GmbH
Käppelemattweg 2, 79650 Schopfheim, Germany
Tel. +49 7622 29-0, Fax +49 7622 29-213
e-mail: info@ekato.com

www.ekato.com

EKATO combined gassing system

High efficiency, operating safety and reliability



The application

Reactions using purified gases call for:

- Complete utilization of the gas
- High productivity
- Reliable containment of the gas and the products of reaction

The EKATO solution

High productivity in a simply constructed reactor with the EKATO combined gassing system:

- Combined action of two different impeller types
- Primary dispersion by the EKATO PHASEJET®
- Recirculation by the EKATO GASJET®
- Low concentrations of feedstock in the reactor due to high local rates of chemical conversion and short mixing times

The EKATO GASJET®

- Recirculation of reactant gas from the headspace with no external compressor
- Intensive mixing of feedstock and reactant gas in the impeller discharge zone
- High heat transfer rates

The EKATO PHASEJET®

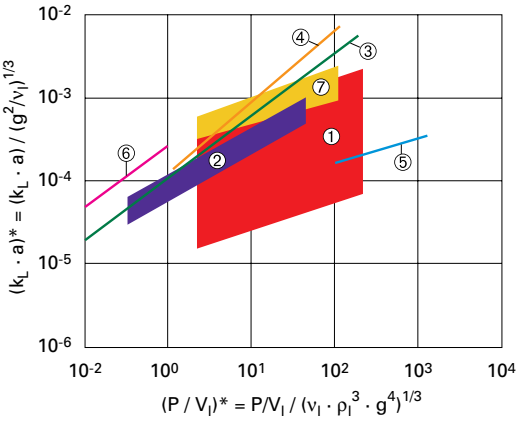
- Gas introduced via rotating gas sparger
- High flooding limits
- Little change in power draw between ungassed and fully gassed conditions
- Homogeneous suspension of the catalyst

Advanced Process Solutions

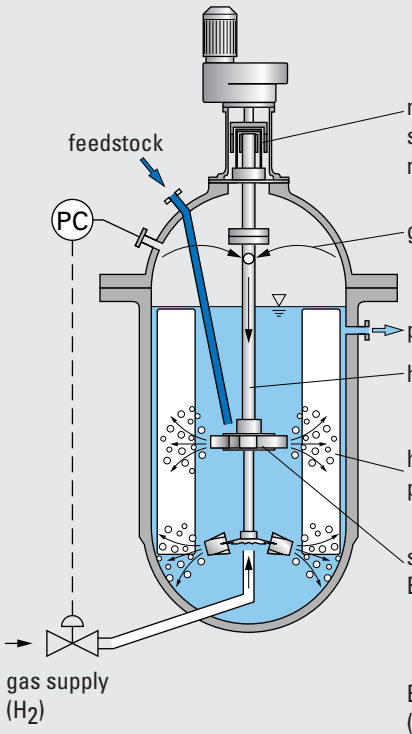
The EKATO combined gassing system ensures:

- High operating safety and reliability
- Low instrumentation and control costs
- Productivity boost through high mass transfer rates
- Minimum number of components

Comperative performance
of various glas-liquid reactors



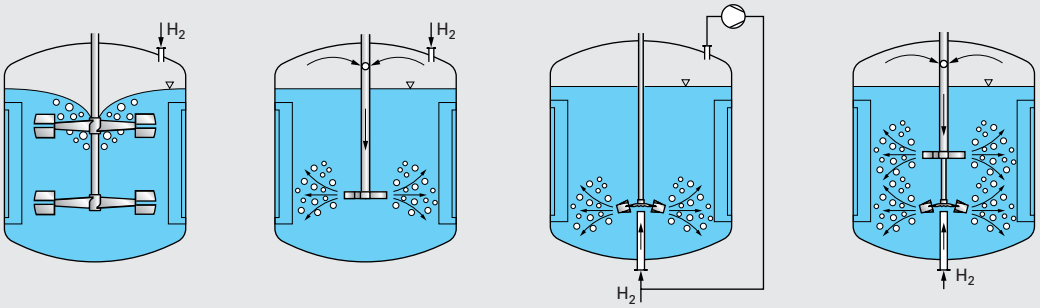
① Stirred loop reactor
② Stirred reactor with flat blade disk turbine
③ Stirred reactor with hollow impeller
④ **Stirred reactor with EKATO combined gassing system**
⑤ Venturi jet scrubber
⑥ Mixing nozzle reactor (non-coalescent)
⑦ Loop reactor (mixing nozzle)



Typical applications

- Hardening of fats:
  Specified iodine number reached in one third of the time.
- Production of Sorbitol:
  In a batch time of 1.5 hours the residual glucose content can be reduced to 1,000–2,000 ppm.
- Reduction of aromatic nitro compounds:
  Doubling of productivity.

Different types of gassing for agitated reactors



Surface gassing with vortex

Self-aspirating impeller

Sparged gassing with external recirculation

Sparged gassing with internal recirculation

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