

Salt-operated reactors

Maleic anhydride



MAN DWE[®] – global no. 1 in tubular reactors

- First reactor in 1955
- More than 750 contracts
- Up to 50,000 tubes
- Heat removal up to 43 MW
- Salt flow up to 11,000 m³/h
- More than 750 catalytic gas phase tubular reactors for 54 products and 77 different processes
- 28 deflagration pressure containment design reactors
- Upscale from pilot test (1–2 tubes) to commercial reactor size with same salt temperature conditions

MAN DWE[®] Reactors turbomachinery



Maleic anhydride reactor

Technical data

Standard design data/operating data

Pressure/temperature	Design	Operating
Pressure tube side	2.0–5.0 barg	1.4-2.4 barg
Temperature tube side	450° C	420-450° C
Pressure shell side	static + pump	static + pump
Temperature shell side	450° C	390-445° C

Characteristic design data

Design data	Feed: N-butane
Design load	max. 2.1 mol%
Space velocity	
Inner diameter x wall thickness	Ø 25 x 2.0 mm
Tube length over tube sheets	up to approx. 7,000 mm
Tube length between tube sheets	up to approx. 6,500 mm
Amount of heat to salt per tube	
Yield	100-106 %
Maleic anhydride per tube and hour	0.14–0.18 kg
Max. tube number per reactor	50,000

Market leader for maleic anhydride reactors

- 85+ reactor systems manufactured to date
- Feedstock: N-butane or benzene
- Deflagration vented or pressure containment design feasible
- Highest loadings
- N-butane 2.1 mol%
- Benzene 200 grams per h and tube
- Max. tube number: up to 50,000





MAN Energy Solutions

94469 Deggendorf, Germany P +49 991 381-164 F +49 991 381-5164 dwe-reactors@man-es.com www.man-es.com

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