



## DOWEX™ MONOSPHERE™ M-31 and M-31 Catalyst Ion Exchange Resins

A Macroporous Strong Acid Catalyst

Product	Type	Matrix	Functional group
DOWEX™ MONOSPHERE™ M-31	Uniform size beads, macro	Styrene-divinylbenzene	Sulfonic acid
DOWEX M-31	Gaussian beads, macro	Styrene-divinylbenzene	Sulfonic acid

	DOWEX MONOSPHERE M-31 (H) Catalyst		DOWEX M-31 (H) Catalyst	
	Specification	Typical	Specification	Typical
Physical form	Hard opaque beads		Hard opaque beads	
Sphericity original	99% min.	99.8%	99% min.	99.8%
Wet volume acid capacity	1.85 meq/mL min.	1.95	1.7 meq/mL min.	1.8
Dry weight acid capacity	5.0 meq/mg min.	5.2	4.7 meq/mg min.	4.9
Water retention capacity	50-54% by wt.		50-54% by wt.	
Screen size	575 ± 50 mic.			
400-650 microns on 16 mesh	> 95%	> 99%	2.0% max.	1.0%
through 40 mesh	1% max.	0.5%	5% max.	2.5%
Shipping weight**	48 lbs/ft <sup>3</sup> 766 kg/cu. meter		47 lbs/ft <sup>3</sup> 760 kg/cu. meter	
Friability (avg. g/bead)	400		350	
Surface area (m <sup>2</sup> /g)	30		30	
Porosity (%)	33		33	
Pore size (avg. size in angstroms)	200		200	

### General Information

Dow offers several excellent resin catalyst products for a wide variety of applications. Dow is a World Leader in the manufacture of high performance catalysts for commercial MTBE and TAME production. DOWEX™ M-31 and DOWEX™ MONOSPHERE™ M-31 Catalysts are the benchmark catalysts for the industry, having a long history of *proven quality and trusted service*.

DOWEX MONOSPHERE M-31 catalyst is our high activity premium grade catalyst. High activity is imparted by Dow's unique uniform particle size technology, coupled with a high degree of sulfonic acid functionality. DOWEX MONOSPHERE M-31 is particularly suited to fixed bed operations running rapid throughput and for all types of TAME production facilities. DOWEX MONOSPHERE M-31 is ideal for older "arco type" MTBE production units, looking for more throughput capacity.

DOWEX M-31 catalyst is our standard grade product for general catalytic application. This catalyst has unmatched durability and dependability within the MTBE/TAME industry.

\*\* As per the backwashed and settled density of the resin, determined by ASTM D-2187.

Warning: Oxidizing agents such as nitric acid attack organic ion exchange resins under certain conditions. This could lead to anything from slight resin degradation to a violent exothermic reaction (explosion). Before using strong oxidizing agents, consult sources knowledgeable in handling such materials.

Notice: No freedom from any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other governmental enactments. Dow assumes no obligation or liability for the information in this document. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

