TECHNICAL DATA SHEET

ZSM-11

MEL structure type · H^+ form · SiO_2/Al_2O_3 molar ratio 50 · BET ≥380 m^2/g · particle size 200–300 nm · hydrothermal synthesis · 20 g / 50 g



ACS Material ZSM-11 — Representative Packaging

ACS Material ZSM-11 (MR 50, 20 g). Image shown for reference; label and packaging may vary.

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SECTION I

Product Overview

Zeolites are a class of synthetic or natural aluminosilicate materials whose regular, microporous structure makes them extraordinarily useful as adsorbents and catalysts. They are also commonly known as molecular sieves, because their regular pore structure allows them to sort molecules by size. ZSM-11, also known as Zeolite Socony Mobil-11 or MEL, is a zeolite with a 10-ring pore structure, patented by the Mobil Oil Company in the 1970s.

ZSM-11 demonstrates a high selectivity to LPG, gasoline and diesel, a low dry gas and coke yield, and a high selectivity and yield of light olefins. It also shows a poor selectivity to benzene, which makes it especially interesting for applications in clean petrochemical catalysis.

ACS Material ZSM-11 is prepared by the hydrothermal synthesis method and supplied in the H^+ form with high crystallinity, a SiO_2/Al_2O_3 molar ratio of 50, a BET surface area ≥380 m^2/g, a particle size of 200–300 nm and Na_2O <0.1 wt.%. Typical SEM, XRD and BET data are included in this data sheet.

SECTION II

Core Advantages

- **10-ring pores** — MEL structure type.
- **SiO_2/Al_2O_3 ratio 50** — molar ratio.
- **Nanosized particles** — 200–300 nm.
- **H^+ form** — cation H^+.
- **High surface area** — BET ≥380 m^2/g.
- **Low sodium** — Na_2O <0.1 wt.%.

SECTION III

Specifications

Technical data

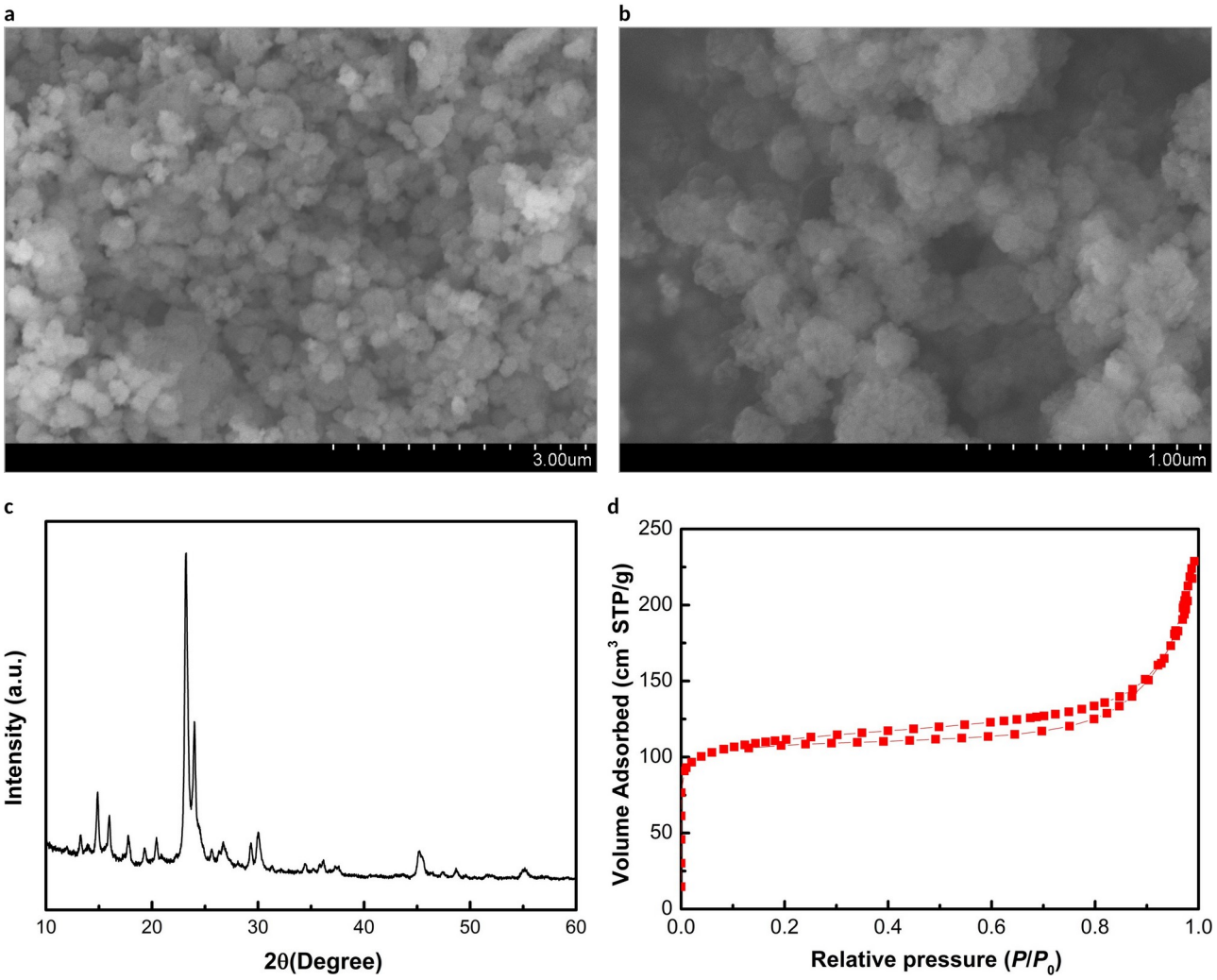
Specifications	
Product name	ZSM-11
Brand	ACS Material
Synonyms	Zeolite Socony Mobil-11; Zeolite ZSM-11; Molecular sieve ZSM-11
CAS No.	1318-02-1
Structure type	MEL
Preparation method	Hydrothermal synthesis method
Cation	H^+
SiO_2/Al_2O_3 molar ratio	50
BET surface area	≥380 m^2/g
Pore volume	>0.2 cm^3/g
Bulk density	0.5 g/cm^3
Na_2O	<0.1 wt.%
Ignition loss (550 °C, 3 h)	<8 wt.%
H_2O adsorption (50% ET, 20 °C)	5 wt.%
Particle size	200–300 nm
MEL purity	99.9%

Ordering information

Package	Product No.
MR 50, 20 g	MZ110012
MR 50, 50 g	MZ110015

For larger quantities please contact us at contact@acsmaterial.com.

Typical data



a SEM image of ACS Material ZSM-11, ×18.0k (scale bar 3.00 µm). **b** SEM image, ×50.0k (scale bar 1.00 µm). **c** XRD pattern (2θ 10–60°). **d** N_2 adsorption–desorption isotherm.

SECTION IV

Applications

ZSM-11 is used in catalysts and adsorbents.

A published study using ACS Material ZSM-11 investigated direct CO_2 hydrogenation to aromatics with ZnO/t-ZrO_2 and zeolite bifunctional catalysts.

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