TECHNICAL DATA SHEET

SSZ-13 Zeolite

CHA structure type · Type A, H^+ form · SiO_2/Al_2O_3 molar ratio 13–15 · BET >600 m^2/g · crystal size 0.5–1 µm · hydrothermal synthesis · 50 g / 100 g / 1 kg



ACS Material SSZ-13 Zeolite — Representative Packaging

ACS Material SSZ-13 Zeolite, Type A (H^+), 50 g (MSZ13015). Image shown for reference; label and packaging may vary.

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ACS MATERIAL, LLC

959 E Walnut St., Suite 100
Pasadena, CA 91106, USA

Phone +1 (866) 227-0656
Fax +1 (781) 518-0284

contact@acsmaterial.com

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SECTION I

Product Overview

SSZ-13 is a chabazite (CHA)-type aluminosilicate zeolite in the ABC-6 family of zeolites. It has a topology similar to the mineral chabazite but a high-silica composition; its Si/Al ratio of >5 results in a low cation exchange capacity. The framework is built from eight-membered rings, giving a small-pore channel system with a pore size of 0.38 nm. SSZ-13 was patented in 1985 by the Chevron Corporation.

ACS Material SSZ-13 Zeolite (Type A) is prepared by the hydrothermal method and supplied as a microporous zeolite in the H^+ form, with a SiO_2/Al_2O_3 molar ratio of 13–15, a BET surface area >600 m^2/g, a crystal size of 0.5–1 µm, D50 <9 µm, a relative crystallinity >90% and Na_2O <500 ppm. The product is calcined and ready to use directly. Typical SEM and BET data are included in this data sheet.

SECTION II

Core Advantages

- **Small-pore CHA framework** — 8-ring pores, 0.38 nm.
- **Low SiO_2/Al_2O_3** — molar ratio 13–15.
- **High crystallinity** — relative crystallinity >90%.
- **H^+ form** — calcined, ready to use.
- **High surface area** — BET >600 m^2/g.
- **Low sodium** — Na_2O <500 ppm.

SECTION III

Specifications

Technical data

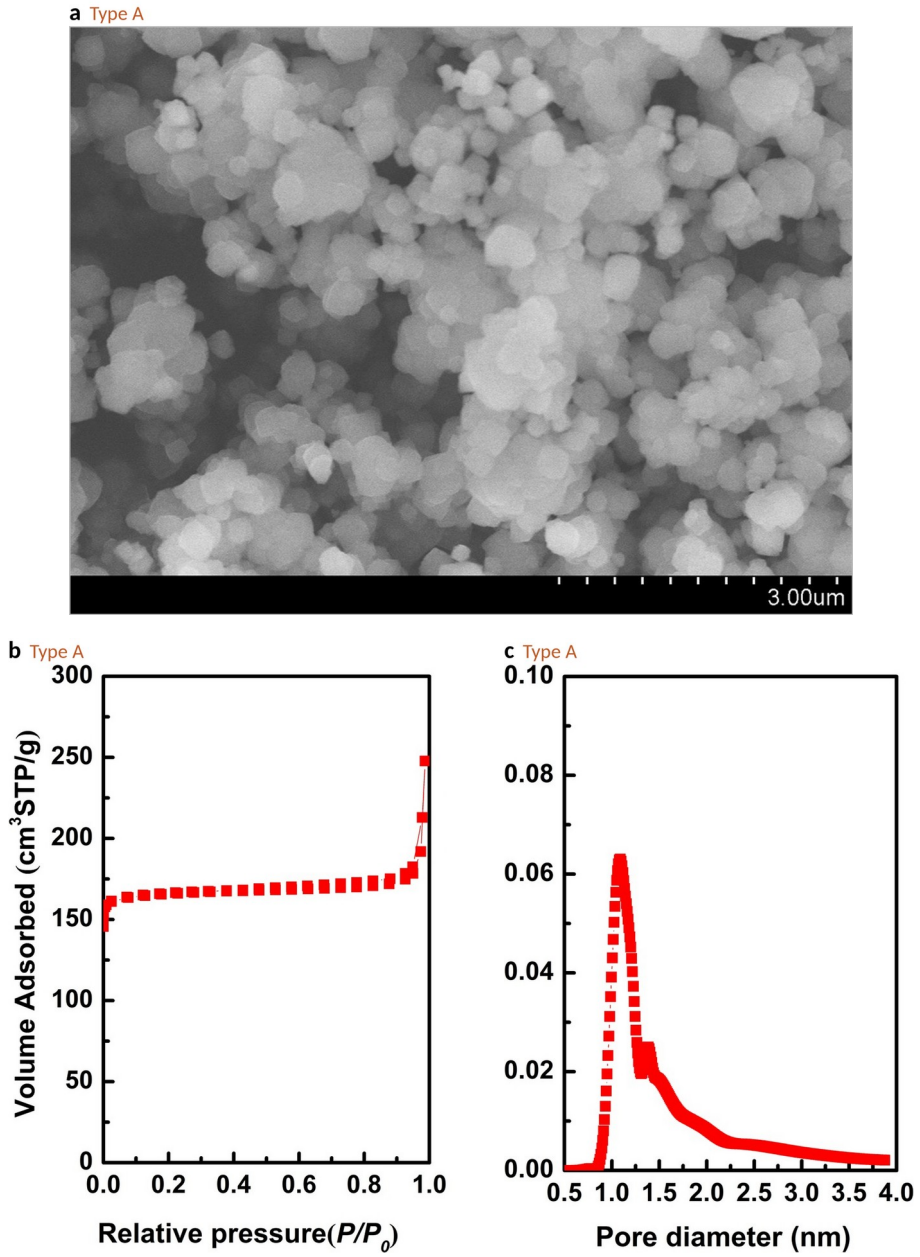
Specifications	
Product name	SSZ-13 Zeolite
Brand	ACS Material
CAS No.	1318-02-1
Structure type	CHA (chabazite), ABC-6 family
Pore size	0.38 nm (eight-membered ring)
Preparation method	Hydrothermal method
Type	Type A
Form	Microporous zeolite, H^+
SiO_2/Al_2O_3 molar ratio	13–15
D50	<9 µm
Crystal size	0.5–1 µm
BET surface area	>600 m^2/g
Na_2O	<500 ppm
Relative crystallinity	>90%
Supplied	Calcined, ready to use directly
Maximum operating temperature	About 550 °C

Ordering information

Package	Product No.
Type A, 50 g	MSZ13015
Type A, 100 g	MSZ13021
Type A, 1 kg	MSZ13031

For quantities larger than 5 kg, please contact us at contact@acsmaterial.com.

Typical data



a SEM image of ACS Material SSZ-13, Type A, ×15.0k (scale bar 3.00 µm). **b** Adsorption isotherm, Type A. **c** Pore size distribution, Type A.

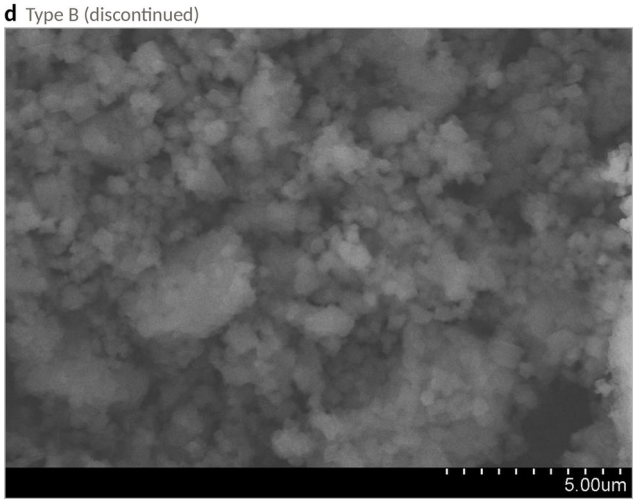
Reference data: discontinued grades (Type B, Type C)

Discontinued grades — specifications kept for reference

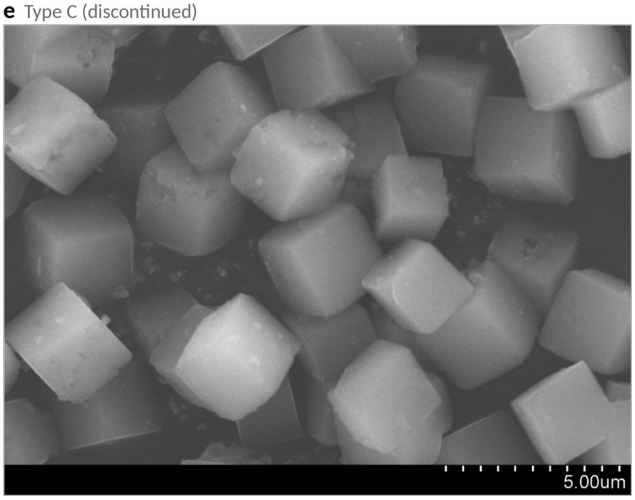
Property	Type B (Discontinued)	Type C (Discontinued)
Form	Microporous zeolite, NH_4^+	Microporous zeolite, NH_4^+
SiO_2/Al_2O_3 molar ratio	10–20	20–30
Particle size	300–800 nm	2–3 µm
D50	<9 µm	<9 µm
BET surface area	~626 m^2/g	~550 m^2/g
Pore volume	N/A	≥0.28 cm^3/g
Average pore diameter	N/A	N/A
Na_2O	<367 ppm	<350 ppm
H_2O	<4%	<2%

Type B and Type C are no longer in production and cannot be ordered; their data are kept for reference.

d Type B (discontinued)

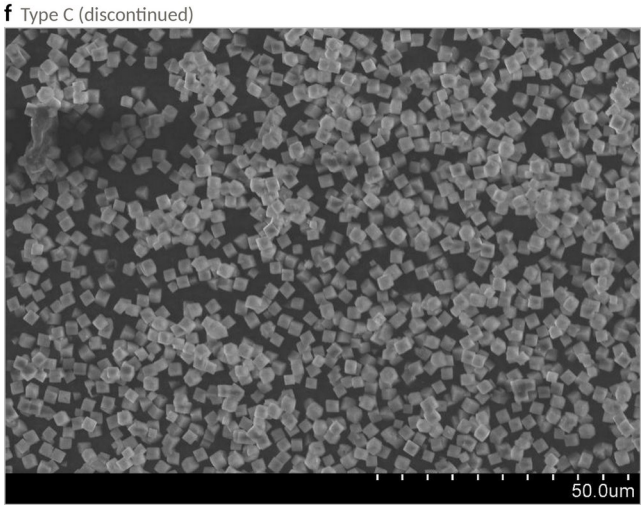


e Type C (discontinued)

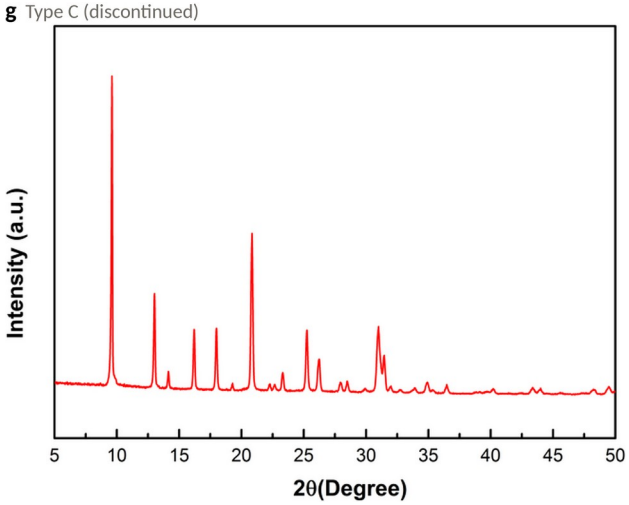


d SEM image of ACS Material SSZ-13, Type B (discontinued), ×7.00k (scale bar 5.00 µm). **e** SEM image, Type C (discontinued), ×7.00k (scale bar 5.00 µm).

f Type C (discontinued)



g Type C (discontinued)



f SEM image of ACS Material SSZ-13, Type C (discontinued), lower magnification, ×1.00k (scale bar 50.0 µm). **g** XRD pattern, Type C (discontinued).

SECTION IV

Applications

SSZ-13 is used as a solid catalyst in the methanol-to-olefins (MTO) process and in the selective catalytic reduction (SCR) of nitrogen oxides, for example in diesel engine exhaust. It is also useful for the gas adsorption separation of small molecules such as alkanes, olefins and CO_2, for industrial waste gas treatment, VOC abatement and air purification (removal of molecules such as H_2S, SO_2, HCHO, NH_3 and CO), and for hydrogen storage.

Published studies using ACS Material SSZ-13 include the effect of high-pressure H_2 co-feeds on methanol-to-hydrocarbons catalysis over CHA zeolites, Pd/SSZ-13 passive NO_x adsorbers, and multifunctional catalyst beds for emissions control.

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