TECHNICAL DATA SHEET

KIT-6 Mesoporous Molecular Sieve

Mesoporous silica · cubic Ia3d · hydrothermal method · BET 600–800 m²/g · BJH pore width 6.2 nm · calcined, ready to use



ACS Material KIT-6 Mesoporous Molecular Sieve — Representative Packaging

ACS Material KIT-6 in an ACS Material bottle. Image shown for reference; label and packaging may vary.

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SECTION I

Product Overview

KIT-6 is a mesoporous molecular sieve of porous silica (SiO_2, CAS No. 7631-86-9) with a cubic Ia3d structure: a bicontinuous network of interpenetrating cylindrical pores. ACS Material KIT-6 is prepared by the hydrothermal method and is supplied calcined and ready to use.

The material is a powder with a BET surface area of 600–800 m^2/g, a BJH adsorption average pore width of 6.2 nm, a total adsorption average pore width of 4.3 nm and a particle size of 10–100 µm. Pore size, particle size, and wall thickness are tunable. Typical TEM, isotherm and BJH pore size distribution data are included in this data sheet.

SECTION II

Core Advantages

— **3D cubic pore network** — cubic Ia3d silica with bicontinuous, interpenetrating cylindrical pores.

— **Reported pore widths** — BJH adsorption average pore width 6.2 nm; total adsorption average 4.3 nm.

— **Calcined and ready to use** — prepared by the hydrothermal method and supplied calcined.

— **High surface area** — BET surface area of 600–800 m^2/g.

— **Well-ordered structure** — comparative crystallinity ≥90%; Na_2O ≤0.1%.

— **Tunable** — pore size, particle size, and wall thickness are tunable.

SECTION III

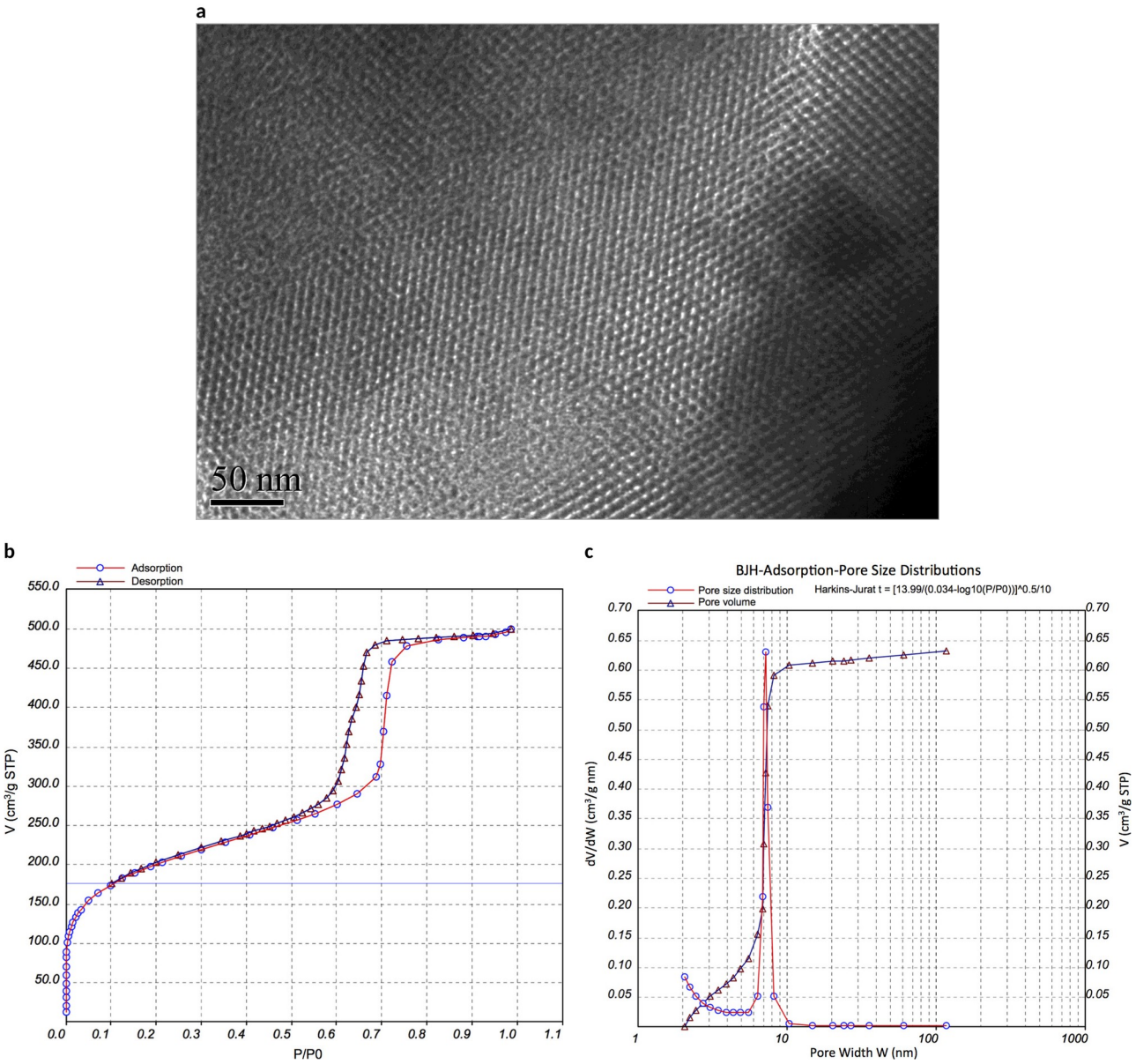
Specifications

Technical data

Specifications	
Product name	KIT-6 Mesoporous Molecular Sieve
Brand	ACS Material
Synonyms	KIT-6, mesoporous silica, silicon dioxide
CAS No.	7631-86-9
Linear formula	SiO_2
Preparation method	Hydrothermal method
Supplied	Calcined, ready to use
Appearance	Powder
Phase	Cubic Ia3d silica
BET surface area	600–800 m^2/g
BJH adsorption average pore width	6.2 nm
Total adsorption average pore width	4.3 nm
Particle size	10–100 µm
Na_2O	≤0.1%
Comparative crystallinity	≥90%

This product is calcined and ready to use.

Typical data



a TEM image of ACS Material KIT-6 (scale bar 50 nm). **b** Adsorption–desorption isotherm. **c** BJH adsorption pore size distribution.

SECTION IV

Applications

Mesoporous silica KIT-6 is used as a catalyst carrier, as a templating agent and for the separation of biochemicals. Its three-dimensional pore system is also studied for gas adsorption, integrated chromatography and gas sensing microdevices.

Potential applications of mesoporous silicas include medicine, thermal energy storage, biosensing and imaging.

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