



HiSiv™ 1000 Adsorbent

Adsorbents

Description

HiSiv1000 adsorbent is a molecular sieve that possesses a pore structure for adsorbing molecules with critical diameters up to 0.8 nm. It:

- Is thermally stable to 800°C under dry conditions, to 500°C when moist.
- Neither participates in nor promotes oxidation or reduction.
- Has specific heat 0.19 at 25°C; 0.24 at 175°C.
- Is stable in formula pH range of 3 to 10 for a limited amount of time.
- Has very low solubility in water and organic solvents.

HiSiv adsorbents are high silica molecular sieves (also referred to as high silica zeolites). All HiSiv adsorbents are hydrophobic and selective for organics in the presence of water. They retain high capacity for organics even at humidities approaching complete saturation. Chemically, HiSiv adsorbents are crystalline, inorganic silica-alumina structures. They exhibit classic zeolite isotherms – high capacity at low feed concentrations and stable mass transfer fronts. This characteristic permits easy volatile organic compound (VOC) removal from air to less than one ppm. HiSiv adsorbents are non-combustible and non-reactive with most compounds.

HiSiv 1000 adsorbent is available as a 1/16" pellet or as a powder for incorporation into monolithic forms such as adsorbent wheels.

Regeneration

HiSiv 1000 adsorbent can be regenerated for reuse by the use of elevated temperature and/or reduced pressure purging with air, steam or other gases.

Applications

HiSiv 1000 molecular sieve is the preferred adsorbent for adsorbing larger molecules (0.6 to 0.8 nm) and higher boiling solvents such as toluene and methyl isobutyl ketone. Removal efficiencies of up to 99.9 percent are achievable. HiSiv 1000 adsorbent can be used for moderate VOC concentrations and average humidity.

Typical physical properties

	1/16" Pellets	Powder
Particle size	—	<200 mesh
Surface area (m ² /g)	—	>550
O ₂ capacity @ P/P ₀ = 0.5	20g/100g	26g/100g
Moisture content (wt-%)	<1	<2
Bulk density (lb/ft ³)	34 (550 kg/m ³)	—

Safety and handling

See the UOP brochure "Precautions and Safe Practices for Handling Molecular Sieves in Process Units" or contact your UOP Representative.

Shipping information

HiSiv 1000 adsorbent is available in 55-gallon steel drums.

For more information

For more information, contact your local UOP representative or our Des Plaines sales office:

e-mail: info@uop.com

fax: +1-847-391-2253

phone: +1-847-391-2000



UOP LLC

25 East Algonquin Road
Des Plaines, IL 60017-5017
U.S.A.
www.uop.com

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