



JINTAI Molecular Sieves:

JINTAI have developed the following high-efficiency molecular sieves for the most demanding conditions:



Introduction of JINTAI Molecular Sieves:

JINTAI Molecular sieves are crystalline metal alumina silicates having a three dimensional interconnecting network of silica and alumina tetrahedra. Natural water of hydration is removed from this network by heating to produce uniform cavities which selectively adsorb molecules of a specific size.

4 to 8-mesh sieve is normally used in gas phase applications, while the 8 to 12-mesh type is common in liquid phase applications. The powder forms of the 3A, 4A, 5A and 13X sieves are suitable for specialized applications.

Long known for their drying capacity (even to 90 °C), molecular sieves have recently demonstrated utility in synthetic organic procedures, frequently allowing isolation of desired products from condensation reactions that are governed by generally unfavorable equilibria. These synthetic zeolites have been shown to remove water, alcohols (including methanol and ethanol), and HCl from such systems as ketimine and enamine syntheses, ester condensations, and the conversion of unsaturated aldehydes to polyenals.

Molecular Sieves Type A**. Molecular Sieve 3A (JT-MS-3A)****Applications**

It is used for commercial dehydration of unsaturated hydrocarbon steams such cracked gas, acetylene and butadiene. It is also used for dehydration of alcohol and solvents.

Properties	Measure Unit	Spherical			Cylindrical	
Diameter	mm	1.6-2.5	3-5	5-8	1.6	3.2
Static Water Adsorption	≅ mg/g	210	210	210	210	210
CO2 Adsorption	≅ % wt	2.0	2.0	2.0	1.0	1.0
Bulk Density	g/ml	0.70±0.02	0.68±0.02	0.66±0.02	0.68±0.02	0.66±0.02
Crush Strength	≅ N	30	80	110	35	70
Wear Rate	≅ % wt	0.1	0.1	0.1	0.2	0.2
Package Moisture	≅ % wt	1.0	1.0	1.0	1.0	1.0

. Molecular Sieve 3A EPG (JT-MS-3A-EPG)**Applications**

Type 3A EPG is used for dehydration of acetylene, oil cracked gas.

Properties	Measure Unit	Cylindrical	
Diameter	mm	1.6	3.2
Static Water Adsorption	≅ mg/g	210	210
CO2 Adsorption	≅ % wt	1.0	1.0
Bulk Density	g/ml	0.68±0.02	0.66±0.02
Crush Strength	≅ N	42	80
Wear Rate	≅ % wt	0.2	0.2
Package Moisture	≅ % wt	1.0	1.0

. Molecular Sieve 4A (JT-MS-4A)**Applications**

It is used as a dryer and purificant for various gases and liquids, such as refrigerant , medicine , electronic materials and changeable substance , purification of argon gas .

Properties	Measure Unit	Spherical			Cylindrical	
Diameter	mm	1.6-2.5	3-5	5-8	1.6	3.2
Static Water Adsorption	≅ mg/g	215	215	215	215	215
Methanol Adsorption	≅ mg/g	140	140	140	140	140
Bulk Density	g/ml	0.70±0.02	0.68±0.02	0.66±0.02	0.68±0.02	0.66±0.02
Crush Strength	≅ N	35	80	140	32	80
Wear Rate	≅ % wt	0.1	0.1	0.1	0.2	0.2
Package Moisture	≅ % wt	1.0	1.0	1.0	1.0	1.0

. Molecular Sieve 4A DG (JT-MS-4A-DG)**Applications**

It is used commercially in deep drying natural gas alkane , it is also used for dehydration of various gases and liquids , refrigerant , medicine , electronic components and changeable substance , purification of argon gas .

Properties	Measure Unit	Spherical	Cylindrical	
Diameter	mm	3-5	1.6	3.2
Static Water Adsorption	≅ mg/g	215	215	215
Methanol Adsorption	≅ mg/g	140	140	140
Bulk Density	g/ml	0.68±0.02	0.68±0.02	0.66±0.02
Crush Strength	≅ N	100	40	80
Wear Rate	≅ % wt	0.1	0.2	0.2
Package Moisture	≅ % wt	1.0	1.0	1.0

. Molecular Sieve 5A (JT-MS-5A)**Applications**

Used commercially in drying and refining air, petroleum , natural gas and gas in other industries.

Properties	Measure Unit	Spherical			Cylindrical	
Diameter	mm	1.6-2.5	3-5	5-8	1.6	3.2
Static Water Adsorption	≅ mg/g	210	210	210	210	210
n-hexane Adsorption	≅ mg/g	120	120	120	140	120
Bulk Density	g/ml	0.70±0.02	0.70±0.02	0.68±0.02	0.68±0.02	0.66±0.02
Crush Strength	≅ N	35	80	130	35	70
Wear Rate	≅ % wt	0.1	0.1	0.1	0.2	0.2
Package Moisture	≅ % wt	1.0	1.0	1.0	1.0	1.0

Molecular Sieves Type X**. Molecular Sieve 10X (JT-MS-10X)****Applications**

Used commercially for natural gas sweetening (removal of H₂S and mercaptans) and dewaxing in oil refining facility.

Properties	Measure Unit	Spherical		Cylindrical	
Diameter	mm	1.6-2.5	3-5	1.6	3.2
Static Water Adsorption	≅ mg/g	260	260	260	260
Benzene Adsorption	≅ mg/g	180	180	180	180
Bulk Density	g/ml	0.64±0.02	0.62±0.02	0.58±0.02	0.58±0.02
Crush Strength	≅ N	25	60	20	40
Wear Rate	≅ % wt	0.1	0.1	0.2	0.2
Package Moisture	≅ % wt	1.0	1.0	1.0	1.0

. Molecular Sieve 13X APG (JT-MS-13X-APG)

Applications

Used commercially for air plant feed purification (simultaneous removal of H₂O and CO₂) and general gas drying.

Properties	Measure Unit	Spherical		Cylindrical	
Diameter	mm	1.6-2.5	3-5	1.6	3.2
Static Water Adsorption	≅ mg/g	270	270	270	270
CO ₂ Adsorption	≅ mg/g	180	180	180	180
Bulk Density	g/ml	0.67±0.02	0.66±0.02	0.62±0.02	0.62±0.02
Crush Strength	≅ N	30	80	30	65
Wear Rate	≅ %wt	0.10	0.10	0.10	0.10
Package Moisture	≅ %wt	1.0	1.0	2.0	2.0

. Molecular Sieve 13X HP (JT-MS-13X-HP)

Applications

Used commercially for air plant feed purification and PSA oxygen generation process.

Properties	Measure Unit	Spherical	
Diameter	mm	0.5-1.0	1.6-2.5
Static Water Adsorption	≅ mg/g	285	285
CO ₂ Adsorption	≅ mg/g	195	195
Bulk Density	g/ml	0.64±0.02	0.62±0.02
Crush Strength	≅ N		20
Wear Rate	≅ %wt	2.0	2.0
Package Moisture	≅ %wt	1.0	1.0

. Molecular Sieve 13X PG (JT-MS-13X-PG)

Applications

Used commercially for desulphurization of liquefied petroleum gas . It is also used for dehydration of gases and liquids.

Properties	Measure Unit	Spherical		Cylindrical	
Diameter	mm	1.6-2.5	3-5	1.6	3.2
Static Water Adsorption	≅ mg/g	260	260	260	260
CO ₂ Adsorption	≅ mg/g	175	175	175	175
Bulk Density	g/ml	0.67±0.02	0.66±0.02	0.62±0.02	0.62±0.02
Crush Strength	≅ N	30	80	35	75
Wear Rate	≅ %wt	0.1	0.1	0.2	0.2
Package Moisture	≅ %wt	1.0	1.0	1.0	1.0

Specialized Molecular Sieve**. For refrigerant and air conditioner****JT-MS-XH-5****Applications**

Used commercially for dehydration and drying of refrigerants R12 , R22 .

Properties	Measure Unit	Spherical
Diameter	mm	1.6-2.5
Bulk Density	g/ml	0.85±0.02
Static Water Adsorption	≅ mg/g	210
Dynamic Water Adsorption	≅ mg/g	60
Crush Strength	≅ N	80
Wear Rate(dry)	≅ % wt	0.1
Wear Rate(humidity)	≅ % wt	3.0
Package Moisture	≅ % wt	1.0

. For refrigerant and air conditioner**JT-MS-XH-7****JT-MS-XH-9****JT-MS-XH-11****Applications**

JT-MS-XH-7 is used for dehydration and drying of new refrigerants R-134a in household and commercial refrigerators, iceboxes and air conditioners. It is used for specialized refrigerants such as butane in green refrigerators.

JT-MS-XH-9 is used commercially in drying refrigerants in air conditioners , iceboxes and refrigerators in car , stationwagons , refrigerating trucks , trains and shipper .

JT-MS-XH-11 is available in bead for dehydration and drying of refrigerants R407c, R-410a .

Properties	Measure Unit	JT-MS-XH-7	JT-MS-XH-9	JT-MS-XH-11
Diameter	Mm	1.6-2.5	1.6-2.5	1.6-2.5
Bulk Density	g/ml	0.85±0.02	0.85±0.02	0.85±0.02
Static Water Adsorption	≅ mg/g	175	170	165
Dynamic Water Adsorption	≅ mg/g	60	60	60
Crush Strength	≅ N	80	80	80
Wear Rate(dry)	≅ % wt	0.1	0.1	0.1
Wear Rate(humidity)	≅ % wt	3.0	3.0	3.0
Package Moisture	≅ % wt	1.0	1.0	1.0
Text of compatibility with R-134a				
Fluorine content before test	% wt	0.018	0.018	Difluoromethane
Fluorine content after test	% wt	0.018	0.018	Adsorption 0.01%wt

For refrigerant

JT-MS-AD-545

Applications

It is used specially for purification of refrigerant R134a. Type AD-545 absorbs HCFC1122, decrease HCFC1122 under 2 PPM.

Properties	Measure Unit	Spherical		Cylindrical
Diameter	mm	1.6-2.5	3-5	1.6
Static Water Adsorption	≧ mg/g	21	210	210
Propane Adsorption	≧ mg/g	120	120	120
Bulk Density	g/ml	0.65±0.02	0.70±0.02	0.64±0.02
Crush Strength	≧ N	30	80	25
Wear Rate	≧ %wt	0.10	0.10	0.40
Package Moisture	≧ %wt	1.5	1.5	1.5

. For refrigerant and air conditioner

JT-MS-AD-404B

Applications

Used Specially for desiccation of automobile air system

Properties	Measure Unit	Spherical
Diameter	mm	2-2.5
Static Water Adsorption	≧ mg/g	210
Methanol Adsorption	≧ mg/g	140
Bulk Density	g/ml	0.82±0.04
Crush Strength	≧ N	80
Wear Rate	≧ %wt	0.10
Package Moisture	≧ %wt	1.0

. For insulating glass

JT-MS-AD-303A

Application

Insulating glass molecular sieve is used specially for absorption of the water vapor in insulating glass to improve sound insulation and heat insulation of glass.

Properties	Measure Unit	Spherical			Cylindrical	
Diameter	mm	0.5-1.0	1.0-1.6	1.2-1.8	1.5-2.0	1.6-2.5
Static Water Adsorption	≧ mg/g	200	200	200	200	200
Bulk Density	g/ml	0.73±0.02	0.73±0.02	0.73±0.02	0.73±0.02	0.73±0.02
Crush Strength	≧ N		15	18	20	25
△ t(25g-25cc)	≧ °C	35	35	35	35	35
Partical	≧ %	98	98	98	98	98
Wear Rate	≧ %wt	0.1	0.1	0.1	0.1	0.1
Package Moisture	≧ %wt	1.0	1.0	1.0	1.0	1.0

. PSA molecular sieve for extracting hydrogen

JT-MS-AD-515H**Applications**

It is used for PSA hydrogen separation and CO refining.

Properties	Measure Unit	Spherical
Diameter	mm	1.6-2.5
Static Water Adsorption	≅ mg/g	260
CO Adsorption	≅ ml/g	30
N ₂ Adsorption	≅ ml/g	10.2
n-hexane Adsorption	≅ ml/g	135
Bulk Density	g/ml	0.78±0.04
Crush Strength	≅ N/P	40
Wear Rate	% wt	0.3
Package Moisture	≅ % wt	1.5

. PSA, VSP rich oxygen molecular sieve

JT-MS-AD-515O**Applications**

Except for general properties of molecular Sieve 5A , it is mainly used for PSA or VSP rich oxygen generation.

Properties	Measure Unit	Spherical	
Diameter	mm	0.6-0.9	2-3
Static Water Adsorption	≅ mg/g	265	265
N ₂ Adsorption	≅ mg/g	10.8	10.8
Separation Value of N ₂ & O ₂	≅	3.2	3.2
Bulk Density	g/ml	0.74±0.02	0.72±0.02
Crush Strength	≅ N/P	25	40
Wear Rate	≅ % wt	0.3	0.3
Package Moisture	≅ % wt	1.0	1.0

Memo:

0.6-0.9mm oxgen generation: 40NL/KGH

2-3mm oxgen generation: 20NL/KGH

. For deodorization of aerosol

JT-MS-RK-29**Applications**

It is used for desulphurization of liquefied petroleum gas.

Properties	Measure Unit	Cylindrical
Diameter	mm	1.6
Static Water Adsorption	≧ mg/g	215
n-hexane Adsorption	≧ mg/g	120
Bulk Density	g/ml	0.64±0.02
Crush Strength	≧ N	35
Wear Rate	≧ % wt	0.2
Package Moisture	≧ % wt	1.5

. Activated Alumina

JT-AA**Application**

It is mainly used in gaseous and liquid desiccation in petrochemical industry. It is also widely applied as a dryer in textile industry, oxygen making industry and automatic instrument, equipments with non-heat generation.

Specification

Properties	Measure Unit	Spherical		
Diameter	mm	Φ3-5	Φ4-6	Φ5-8
Gravity-surface area	≧ m ² /g	300	300	300
Gravity Volume	≧ cm ³ /g	0.38	0.38	0.38
Static Adsorption	≧ mg/g	170	170	170
Bulk Density	g/ml	0.70±0.02	0.70±0.02	0.70±0.02
Loss of Ignition	≧ mg/g	6.0	6.0	6.0
Crush Strength	≧ N	120	140	180
Wear Rate	≧ % wt	0.1	0.1	0.1