



**Replacement Molecular Sieve Desiccant
for Your Plastic Resin Dryer**

How Does It Work:

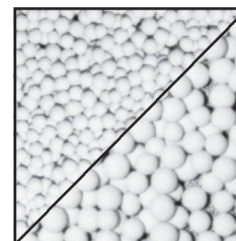
Molecular Sieves are synthetically produced Zeolites characterized by pores of uniform dimensions. Their unique structure allows the water of crystallization to be removed, leaving a porous crystalline structure. These pores, or “cages”, want to re-absorb water or other molecules. Aided by strong ionic forces, the Molecular Sieve will absorb a considerable amount of water or other fluids. If the fluid to be absorbed is a polar compound, it can be absorbed with high loadings even at very low concentrations of the fluid. This strong absorptive force allows Molecular Sieves to remove many gas or liquid impurities to very low levels (PPM or less).

Temperature & Humidity Considerations:

Molecular Sieves retain their ability to absorb water molecules over a much wider spectrum of temperatures than other desiccant materials. Molecular Sieves also have a much higher equilibrium capacity for water vapor under very low humidity conditions. Molecular Sieves are very effective in reducing the water vapor content of gases in the parts per million range.

Regeneration:

Both Type 13X and Type 4A can be regenerated by evacuating or purging, usually at elevated temperatures. The purge gas temperature must be sufficiently high to bring the Molecular Sieve to a level of 400-600°F, but not exceed 1000°F. The degree of regeneration for Type 4A depends on the temperature and humidity of the purge gas and can strongly affect the product purity attainable. A thoroughly regenerated Molecular Sieve can produce water dew points below -150°F and CO₂ levels less than 5 ppmv. The degree of regeneration for Type 13X depends on the temperature, pressure and humidity of the purge gas and affects the exit stream purity. It is possible to dry fluids to less than 0.1 ppm H₂O and purity to less than 1 ppm total sulfur and CO₂.



Activated Alumina - If heated to approximately 200°C, the absorption process is reversed and the alumina will release the water it has absorbed.

COMPATIBLE BRANDS OF DESICCANT DRYERS

AEC
BRY-AIR
CACTUS
COMPAIR
CONAIR

DRI-AIR
DRYTECH
EZ-DRY
GENERAL AIR
LECTRODRYER

DOMNICK
HUNTER
MATSUI
MOTAN
NOVATEK

STYLAIR
TEMPTEK
UNA-DYN
WHITLOCK
VAN AIR

Molecular Sieve Type 4A

Molecular Sieve Type 4A is the sodium form of Zeolite. Type 4A is typically used in regenerable drying systems to remove water vapor or contaminants which have a smaller critical diameter than 4 angstroms. With a smaller pore size, Type 4A is less subject to contamination; however, the moisture absorption rate will be less than that of Type 13X.

TECHNICAL DATA:

Nominal Pore Size..... 4 angstroms
 Type of Crystal Structure..... Cubic
 Bulk Density..... 46 lbs/cu. ft.
 Equilibrium Water Capacity 24% wt.
 Water Content (as shipped)..... 1.5% wt. (max.)
 Heat of Absorption (max.)..... 1,800 BTU/lb H₂O
 Specific Heat (approx.)..... 0.23 BTU/lb/°F

Molecular Sieve Type 13X

Molecular Sieve Type 13X is a modified form of the sodium Zeolite with a pore diameter of 10 angstroms. Type 13X is used commercially for general gas drying, air plant feed purification (simultaneous removal of H₂O and CO₂) and liquid hydrocarbon and natural gas sweetening (H₂S and mercaptan removal). The larger pore size allows for faster absorption of moisture; however, it is more subject to contamination.

TECHNICAL DATA:

Nominal Pore Size..... 10 angstroms
 Type of Crystal Structure..... Body Centered Cubic
 Bulk Density..... 42 lbs/cu. ft.
 Equilibrium Water Capacity 29% wt.
 Water Content (as shipped)..... 1.5% wt. (max.)
 Heat of Absorption (max.)..... 1,800 BTU/lb H₂O
 Specific Heat (approx.)..... 0.23 BTU/lb/°F

Activated Alumina

Activated Alumina is synthetically produced amorphous oxides from aluminum trihydrate. The end product is a beaded material with high absorption capabilities. It is used as a Claus Catalyst in natural gas and refining and can reduce the dewpoint of the air to -40C.

Activated Alumina can remove a variety of contaminants from styrene, polyethylene, ethylene, light hydrocarbons and air. Aluminas are very nonreactive absorbents giving off low heat.

TECHNICAL DATA:

Diameter..... 1/8, 3/16, 1/4
 Gravity-Surface Area 1.47E+06
 Cavity Volume..... 4.93E+06
 Static Adsorption..... 17
 Bulk Density..... 43.7
 Loss on Ignition 8.0
 Crush Strength 27
 Wear Rate 0.1

Desiccant Type 4A			
Bead Size	Mesh Size	Container Size	Part Number
1/8"	4 x 8	30 lb. Pail	4A18-30
		110 lb. Drum	4A18-110
		330 lb. Drum	4A18-330
1/16"	8 x 12	30 lb. Pail	4A116-30
		110 lb. Drum	4A116-110
		330 lb. Drum	4A116-330
Desiccant Type 13X			
Bead Size	Mesh Size	Container Size	Part Number
1/8"	4 x 8	26 lb. Pail	13x18-26
		103 lb. Drum	13x18-103
		309 lb. Drum	13x18-309
1/16"	8 x 12	26 lb. Pail	13x116-26
		103 lb. Drum	13x116-103
		309 lb. Drum	13x116-309
Activated Alumina			
Bead Size	Mesh Size	Container Size	Part Number
1/8"	N/A	50 lb. Bag	AA18-50
3/16"	N/A	50 lb. Bag	AA316-50
1/4"	N/A	50 lb. Bag	AA14-50

If you are unsure which type and mesh size are required for your dryer, consult your manufacturer's manual.



NOTE:
Most ISO9000 and QS9000 quality systems require replacement of molecular sieve desiccant every 12 months. When was the last time you replaced your desiccant?