

Desiccant Selector Chart

Drying Agent	Product No.†	Suitable for Drying	Not Suitable for Drying	Residual Water* mg H ₂ O / 1 dry air	g H ₂ O/g Desiccant	5 10g H ₂ O	Regeneration	Reaction Mechanism
Aluminum Oxide	0536	Hydrocarbons		0.003	0.2	0.58	175°C.	Chemisorption Adsorption
Anhydrous (Magnesium Perchlorate Anhydrous)	0828	Inert gas, air	Most organics	0.001	0.2	2.20	250°C. with vacuum	Hydration
Calcium Chloride	1308(4 Mesh) 1309(8 Mesh) 1310(12 Mesh) 1311(20 Mesh)	Ethers, most esters, alkyl halides, aryl halides, saturated hydrocarbons, aromatic hydrocarbons	Alcohols, amines, phenols, aldehydes, amides, amino acids, some esters, ketones **	0.4	0.2(1H ₂ O) 0.3(2H ₂ O)	.96 .49	None	Hydration
Calcium Oxide	1410	Low molecular weight alcohols, amines, ammonia gas	Acidic compounds, esters	0.007	0.3	0.37	1000°C.	Chemisorption
Magnesium Oxide	2476	Hydrocarbons, aldehydes, alcohols, basic gases, amines	Acidic compounds	0.008	0.5	1.39	800°C.	Hydration
Magnesium Sulfate Anhydrous	2506	Most compounds including acids, ketones, aldehydes, esters, nitriles		1.0	0.2-0.8	1.40 to 0.28	None	Hydration
Molecular Sieve, Activated	2707(8-12 Mesh) Indicating, Type 4A 2708(8-12 Mesh) Type 4A	Molecules of diameter < 4 angstroms	Molecules with a diameter of > 4 angstroms, ethanol, H ₂ S, CO ₂ , SO ₂ , C ₂ H ₄ , C ₂ H ₆ , C ₃ H ₈ , and strong acids	0.001	0.18	1.46 3.69	250°C.	Absorption
Molecular Sieve, Activated	2709(8-12 Mesh) Type 5A	Molecules with an effective diameter > 5 angstroms, e.g., branched chain compounds and those having 4 carbon or larger rings	Molecules with an effective diameter < 5 angstroms, e.g., butanol, n-C ₄ H ₁₀ to n-C ₂₂ H ₄₆	0.003	0.18	1.46	250	
Phosphoric Acid (orthophosphoric acid)	0260			0.003			No	Absorption & solution
Phosphorus Pentoxide, Granular (Granusic)	2155	Saturated hydrocarbons, aromatic hydrocarbons, ethers, alkyl halides, aryl halides, nitriles, anhydrides	Alcohols, acids, amines, ketones	0.001	0.5	0.62	No	Chemisorption
Potassium Carbonate, Anhydrous	3012	Alcohols, nitriles, ketones, esters, amines	Acids, phenols		0.2	0.96	200°C.	Hydrate formation
Potassium Hydroxide Pellets	3140	Amines	Acids, phenols, esters, amides, acidic gases	0.3	Indeterminate		No	Hydration and solution formation
Silica Gel (6-16 Mesh)	3401	Most organics		0.03	0.20	0.95	200°-350° C	Adsorption
Sodium Hydroxide Pellets	3722	Amines	Acids, phenols, esters, amides	0.16 *	Indefinite		No	Absorption and solution formation
Sodium Sulfate Anhydrous, Granular	3891	Alkyl halides, aryl halides, aldehydes, ketones, acids		12.0	1.2	0.07	Usually Not	Hydration
Sodium Sulfate Anhydrous, Powder	3898	"		"	"	0.06	"	"
Sulfuric Acid	9681	Inert gases, air used in desiccators	Too reactive to actually contact organic materials	.004	Indefinite		No	Hydration
Zinc Chloride Reagent, Broken Lump	4321	Hydrocarbons	Ammonia, amines, alcohol	.9	0.2	1.27	110° C	Hydration

*Will vary with method and application.

**Not to be used when exposed to organic vapors.