Water Solutions

DuPont™ AmberLyst™ Polymeric Catalysts

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Application & Product Name	Type	Matrix	Surface Area[1]	Avg. Pore Diameter[1]	Minimum Capacity		Water Retention Capacity	Shipping Weight		Recommended Max. Op. Temperature	
			(m^2/g)	(Å)	(eq/L)	(eq/kg)[2]	(%)	(g/L)	(lb/ft^3)	(°C)	(°F)
Etherification (MTBE, ETBE, TAME)											
AmberLyst™ 15WET	Strong acid	Macro	53	300	1.80	4.70	52 – 57	770	48.1	120	250
AmberLyst™ 35WET	Strong acid	Macro	50	300	1.90	5.20	51 – 57	800	49.9	150	300
AmberLyst™ 17	Strong acid	Macro	30	200	1.85	4.90	50 – 54	760	47.4	120	250
Dimerization (Isooctane)											
AmberLyst™ 35WET	Strong acid	Macro	50	300	1.90	5.20	51 – 57	800	49.9	150	300
AmberLyst™ 36WET	Strong acid	Macro	33	240	1.95	5.40	51 – 57	800	49.9	150	300
Phenol Purification											
AmberLyst™ 16WET	Strong acid	Macro	30	250	1.70	4.80	52 – 58	780	48.7	130	265
AmberLyst™ 36WET	Strong acid	Macro	33	240	1.95	5.40	51 – 57	800	49.9	150	300
Phenol Alkylation											
AmberLyst™ 15DRY	Strong acid	Macro	53	300	-	4.70	≤ 1.6	610	38.1	120	250
AmberLyst™ 35DRY	Strong acid	Macro	50	300	-	5.00	≤ 3.0	560	35.0	150	300
AmberLyst™ 36DRY	Strong acid	Macro	33	240	-	5.40	≤ 1.65	770	48.1	150	300
AmberLyst™ 17DRY	Strong acid	Macro	30	200	-	4.70	≤ 3.0	590	36.8	120	250
Condensation (Bisphenol-A)											
AmberLyst™ 33	Strong acid	Gel	-	-	1.35	5.00	64 – 68	732	45.7	130	265
AmberLyst™ 125	Strong acid	Gel	-	-	0.70	4.80	77 – 83	730	45.6	130	265
Pre-promoted Catalysts											
AmberLyst™ 125B	Strong acid	Gel	-	-	0.70	4.80	77 – 83	714	44.6	130	265
AmberLyst™ 131B	Strong acid	Gel	-	-	1.35	4.80	62 – 68	770	48.1	130	265
Hydrogenation (MIBK, TAME)											
AmberLyst™ CH10	Strong acid (Pd)	Macro	33	240	1.60	4.80	52 – 58	790	49.3	130	265
AmberLyst™ CH28	Strong acid (Pd)	Macro	36	260	1.60	4.80	52 – 58	790	49.3	130	265
AmberLyst™ CH33	Strong acid (Pd)	Macro	36	260	1.60	4.80	52 – 58	790	49.3	130	265
Olefin Hydration (TBA, IPA, SBA)											
AmberLyst™ 15WET	Strong acid	Macro	53	300	1.80	4.70	52 – 57	770	48.1	120	250
AmberLyst™ 45	Strong acid	Macro	49	190	1.00	2.95	51 – 55	770	48.1	170	340
Esterification (Acetates, Acrylates, Fatty Acid Esters)											
AmberLyst™ 15WET	Strong acid	Macro	53	300	1.80	4.70	52 – 57	770	48.1	120	250
AmberLyst™ 16WET	Strong acid	Macro	30	250	1.70	4.80	52 – 58	780	48.7	130	265
AmberLyst™ 36WET	Strong acid	Macro	33	240	1.95	5.40	51 – 57	800	49.9	150	300
AmberLyst™ 39WET	Strong acid	Macro	32	230	1.15	5.00	60 – 66	735	45.9	130	265
AmberLyst™ 46	Strong acid	Macro	75	235	-	0.80	26 – 36	600	37.5	120	250
AmberLyst™ 45	Strong acid	Macro	49	190	1.00	2.95	51 – 55	770	48.1	170	340
AmberLyst™ 131WET	Strong acid	Gel	-	-	1.35	4.80	62 – 68	740	46.2	130	265
AmberLyst™ 19	Strong acid	Gel	-	-	1.80	-	48 – 54	785	49.0	120	250
Base Catalyzed Reactions											
AmberLyst™ A21	Weak base	Macro	35	110	1.30	4.60	56 – 62	660	41.2	100[3]	210
AmberLyst™ A26 OH	Strong base Type I	Macro	30	290	0.80	4.20	66 – 75	675	42.1	60[4]	140
AmberLyst™ A21DRY	Weak base	Macro	35	110	-	5.00	≤ 0.3	330	20.6	100[3]	210
AmberLyst™ A22	Weak base	Macro	55	290	1.70	-	40 – 50	640	40.0	120[3]	250

[1] Nitrogen BET [2] Dry weight [3] Free base form [4] Hydroxide form

Remarks
Etherification catalyst. Extremely resistant to breakdown by osmotic and mechanical shock.
Excellent etherification catalyst. Higher acid strength, better performance, and longer lifetime than conventional catalysts.
Uniform particle size catalyst offering reduced pressure drop and higher throughput for increased production.
Dimerization catalyst with high activity and high temperature stability.
Dimerization catalyst that combines high activity, high temperature stability, and good resistance to polymer fouling.
Condensation catalyst. A low degree of crosslinking provides a high resistance to polymer fouling.
Higher exchange capacity and improved thermal stability compared to conventional catalysts.
Alkylation catalyst. Excellent for use in non-aqueous systems where the presence of water has a negative effect on catalyst activity.
Alkylation catalyst with higher acidity and improved thermal stability compared to conventional catalysts.
Exceptional alkylation catalyst. In addition to high thermal stability, the low degree of crosslinking confers a high resistance to organic fouling.
Uniform particle size, dry catalyst offering reduced pressure drop and increased productivity.
Very low acid leachables, designed for high-purity BPA production.
Low crosslinked, uniform large bead size catalyst that offers excellent productivity with good resistance to polymer fouling.
Pre-promoted, uniform large bead size catalyst for reduced pressure drop. Promotion level: 17 – 23%.
Excellent pre-promoted catalyst with uniform particle size which confers enhanced hydraulic properties and reactivity compared to conventional catalysts. Promotion level: 22 – 28%.
Bifunctional catalyst with acid and metal functionality; contains 1.0 g/L Pd. Used primarily in TAME production to selectively hydrogenate diolefins.
Bifunctional catalyst with acid and metal functionality; contains 2.8 g/L Pd. Used primarily for MIBK production.
Bifunctional catalyst with acid and metal functionality; contains 3.3 g/L Pd. Used primarily for MIBK production.
Conventional hydration catalyst suitable for reactive olefins such as isobutylene.
High-temperature catalyst for the synthesis of SBA and IPA.
Catalyst for low molecular weight acetate esters.
Best suited catalyst for medium molecular weight esters. Used in industrial production of butyl acrylate and methyl methacrylate.
Highly active catalyst with high temperature stability. Well suited for fatty acid esterification.
Esterification catalyst for higher molecular weight compounds that diffuse slowly into conventional catalysts.
Patented esterification catalyst that minimizes by-product formation such as ethers or olefins.
High-temperature catalyst for the synthesis of high molecular weight esters and the esterification of diols and polyols.
Excellent catalyst for low molecular weight esters. Used for ethyl acrylate production.
Highly active esterification catalyst for the reaction of acrylic acid with methanol and ethanol to form the corresponding acrylates.
Macroporous, weak base anion catalyst.
Excellent choice for aldol condensation. High resistance to organic fouling.
Ready-to-use catalyst for silane disproportionation.
High-capacity, macroporous, weak base anion catalyst.

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