



Dow  
Liquid Separations

DOWEX Ion Exchange Resins

Uniform Particle Size Resins for Demineralization  
in Industrial Water Applications

October 2004

# DOWEX Ion Exchange Resins – Uniform Particle Size Resins for Demineralization

PRODUCT	RESIN TYPES	IONIC FORMS	GUARANTEED SALES SPECIFICATIONS <sup>1</sup>									COMMENTS
			TOTAL EXCHANGE CAPACITY, min.		WATER CONTENT	UNIFORMITY COEFFICIENT, max.	MEAN PARTICLE SIZE	PARTICLE SIZE LIMITS		WHOLE UNCRACKED BEADS, % min.		
			eq/l	kg/ft <sup>3</sup>	%		microns	>850 μm max.	<300 μm max.			
DOWEX UPCORE	DOWEX <sup>®</sup> UPCORE <sup>®</sup> Mono C-600	Strong Acid	Na <sup>+</sup> H <sup>+</sup>	2.0 1.8	43.7 39.3	42-48 50-56	1.1 1.1	585 ± 50 600 ± 50	5 5	0.5 0.5	95 95	Uniform particle size gel cation resin specifically designed for the UPCORE system. It is well suited for both softening and demineralization applications.
	DOWEX UPCORE Mono MC-575	Strong Acid	H <sup>+</sup>	1.6	35.0	50-56	1.1	575 ± 50	5	0.5	95 <sup>3</sup>	Uniform particle size macroporous cation resin designed for the UPCORE system. High capacity, exceptional physical stability, and excellent osmotic shock resistance.
	DOWEX UPCORE MAC-3 <sup>2</sup>	Weak Acid	H <sup>+</sup>	3.8	83.0	44-52	–	–	–	–	95 <sup>3</sup>	Gaussian particle size polyacrylic, macroporous cation resin specifically designed for the UPCORE system. Efficiently removes hardness associated with alkalinity.
	DOWEX UPCORE Mono A-500	Strong Base Type 1	Cl <sup>-</sup>	1.3	28.4	50-58	1.1	575 ± 50	5	0.5	95	Uniform particle size gel anion resin specifically designed for the UPCORE system. High operating capacity and good resistance to silica fouling.
	DOWEX UPCORE Mono A-625	Strong Base Type 1	Cl <sup>-</sup>	1.3	28.4	47-54	1.1	670 ± 50	5	0.5	95	Uniform particle size gel anion resin, with a particle size selected to maintain excellent separation in UPCORE system layered beds when used with DOWEX UPCORE Mono WB-500.
	DOWEX UPCORE Mono A2-500	Strong Base Type 2	Cl <sup>-</sup>	1.2	26.2	46-55	1.1	550 ± 50	5	0.5	95	Uniform particle size gel anion resin specifically designed for use in the UPCORE system. It has high operating capacity, chemical efficiency and resistance to organic fouling.
	DOWEX UPCORE Mono MA-600	Strong Base Type 1	Cl <sup>-</sup>	1.1	24.0	55-65	1.1	640 ± 50	5	0.5	95 <sup>3</sup>	Uniform particle size macroporous anion resin specifically designed for use in the UPCORE system. Exceptional physical stability and osmotic shock resistance.
	DOWEX UPCORE Mono WB-500	Weak Base	FB (free base)	1.3	28.4	52-60	1.1	540 ± 50	5	0.5	95 <sup>3</sup>	Uniform particle size macroporous anion resin specifically designed for use in the UPCORE system. Used in layered beds with DOWEX UPCORE Mono A-625.
	DOWEX UPCORE IF-62	Floating Inert	None	–	–	–	–	Typical size range 2,500-4,000	–	–	–	A polyethylene floating inert resin specifically designed for use in the UPCORE system. Allows dirt and resin fragments to pass through while retaining whole resin beads in the bed.
DOWEX MARATHON	DOWEX MARATHON <sup>®</sup> C	Strong Acid	Na <sup>+</sup> H <sup>+</sup>	2.0 1.8	43.7 39.3	42-48 50-56	1.1 1.1	–	–	–	–	Uniform particle size gel cation resin for make-up demineralization. The small uniform beads result in improved regeneration, efficiency and higher operating capacity versus conventional-sized resins.
	DOWEX MARATHON C-10	Strong Acid	Na <sup>+</sup> H <sup>+</sup>	2.2 1.9	48.1 41.5	40-45 46-51	1.1 1.1	–	–	–	–	Uniform particle size, high capacity gel cation resin with high cross-linking for exceptional mechanical and chemical stability.
	DOWEX MARATHON MSC	Strong Acid	Na <sup>+</sup> H <sup>+</sup>	1.7 1.6	37.1 35.0	44-50 50-56	1.1 1.1	–	–	–	–	Uniform particle size, high capacity, highly cross-linked macroporous cation resin for demineralization.
	DOWEX MAC-3 <sup>2</sup>	Weak Acid	H <sup>+</sup>	3.8	83.0	44-50	–	–	–	–	–	Gaussian polyacrylic, macroporous cation resin with high exchange capacity, excellent regeneration efficiency, plus good chemical and mechanical stability. Removes hardness associated with alkalinity.
	DOWEX MARATHON A	Strong Base Type 1	Cl <sup>-</sup> OH <sup>-</sup>	1.3 1.0	28.4 21.9	50-60 50-60 <sup>4</sup>	1.1 1.1	–	–	–	–	Uniform particle size, high capacity, gel anion resin designed to give high throughput and economical operation in primary demineralized beds and mixed beds.
	DOWEX MARATHON A LB	Strong Base Type 1	Cl <sup>-</sup>	1.3	28.4	48-55	1.1	–	–	–	–	Uniform particle size gel anion resin specifically designed for use in layered anion beds.
	DOWEX MARATHON 11	Strong Base Type 1	Cl <sup>-</sup>	1.3	28.4	48-58	1.1	–	–	–	–	Uniform particle size, porous gel anion resin specifically suited for demineralization of high organic water and as an organic scavenger.
	DOWEX MARATHON A2	Strong Base Type 2	Cl <sup>-</sup>	1.2	26.2	45-54	1.1	–	–	–	–	Efficient, uniform particle size gel anion resin normally used for waters in which silica and carbon dioxide do not exceed 25% of the total anions.
	DOWEX MARATHON MSA	Strong Base Type 1	Cl <sup>-</sup>	1.1	24.0	56-66	1.1	–	–	–	–	Uniform particle size, high capacity, macroporous anion resin with exceptional physical stability and osmotic shock resistance.
	DOWEX MARATHON WBA	Weak Base (free base)	FB	1.3	28.4	50-60	1.1	–	–	–	–	Uniform particle size, high capacity, macroporous weak base anion resin that effectively removes mineral acids and organics. Excellent kinetic properties make this resin well suited for high flow rate applications.
	DOWEX MARATHON WBA-2	Weak Base (free base)	FB	1.7	37.1	40-51	1.1	–	–	–	–	Uniform particle size, high capacity, macroporous weak base anion resin that effectively removes mineral acids and organics.
	DOWEX MARATHON MR-3	Mixed Resin Strong Acid/Base	H <sup>+</sup> OH <sup>-</sup>	1.8 1.0	39.3 21.9	50-56 50-60 <sup>4</sup>	1.1 1.1	–	–	–	–	A 1:1 equivalent mixture of DOWEX MARATHON C (H) and DOWEX MARATHON A (OH) for mixed bed demineralization.
DOWEX IF-59	Floating Inert	None	–	–	–	–	Typical size range 1,000-1,700	–	–	–	A polypropylene floating inert resin for upflow service packed bed counter-current regeneration systems.	

<sup>1</sup>For additional information, please refer to the product data sheets.

<sup>2</sup>Gaussian particle size resins – see specific product data sheet for additional information.

<sup>3</sup>Whole bead % min.

<sup>4</sup>Water content in Cl<sup>-</sup> form.

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Notice: Oxidizing agents such as nitric acid attack organic ion exchange resins under certain conditions. This could lead to anything from slight resin degradation to a violent exothermic reaction (explosion). Before using strong oxidizing agents, consult sources knowledgeable in handling such materials.

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