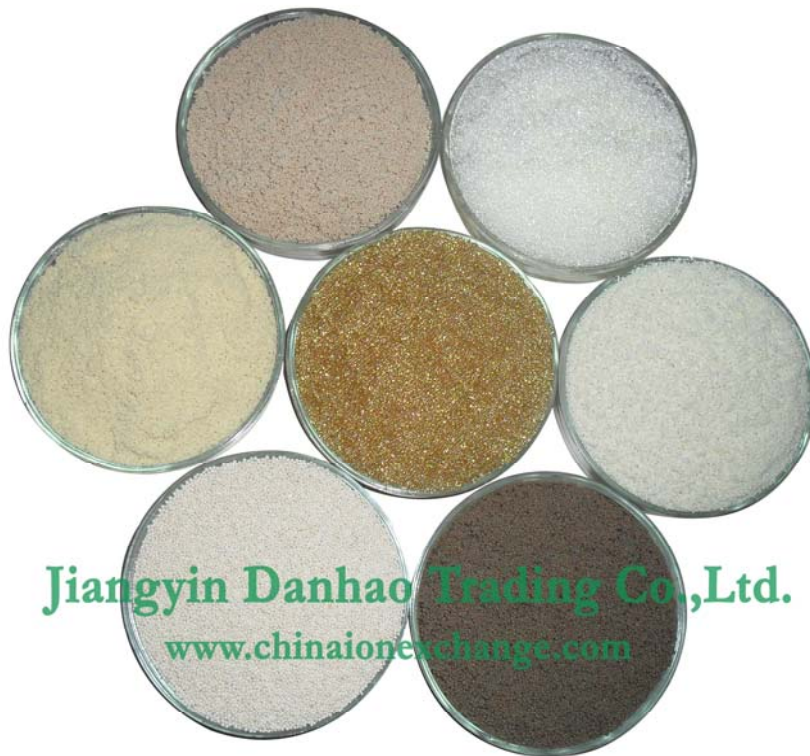




**DanHao<sup>®</sup>**  
**Trading**

**China Ion Exchange Resin Supplier**

**CATALOG 2013 EDITION**



**Jiangyin Danhao Trading Co.,Ltd.**  
[www.chinaionexchange.com](http://www.chinaionexchange.com)



Jiangyin Danhao Trading Co.,Ltd. , parent company name Danhao(Asia) Resin Technology Limited, is on the base of formerly named company EastragonResin in 2005,mainly exported products range has been now expanding from professionally manufactured ion exchange resins into water treatment equipment and accessories which service for the various water treatment solutions and applications.

By the rapid growth of the old company EastragonResin in the past 8 years, we have accumulated considerable domestic and overseas renewable customers with our excellent products, services and reputation for the ion exchange resin. Our production capacity of cation,anion and mixed bed polishing resins have reached up to 8000MT yearly and 55% products are exported overseas.Under this circumstance, the new company Jiangyin Danhao Trading Co.,Ltd. was established in 2012.

As a comprehensive and innovational water treatment engineering and technology company,our main products cover ion exchange resin, FRP vessel, tank valve, RO membrane, housing, filter element, cartridge, integrated pure water plant, UV sterilizer, media, chemicals and so on.

Our ion exchange resin has developed over hundred models as per different customers and applications requirements, there are cation, anion, mixed bed resin, macroporous adsorption resin, catalyst resin, chelating resin, powder resin, UPS resin, inert resin, food grade resin, nuclear grade resin, electronic semi-conductor grade resin and so on.

By many years experience of exporting ion exchange resins, along with the wide and friendly Chinese factories' supports on other water treatment equipment and spares supplies, Jiangyin Danhao company will be committed to assure our oversea customers obtain high quality resins and other related products at favorable prices and continuous services.

On the basis of equality and mutual benefits, we have a strong desire to establish long and friendly co-operation with foreign customers all over the world. Our company slogan is “Grow together with customers. Honesty and credit is the base of business. Every customer is always our most important customer”.



“Real Honor to meet you here! I have been working for export of ion exchange resins in the past 8 years with customers excess 10 different countries and regions, such as Hongkong, Taiwan, Malaysia, Russia, etc. Hopefully, i can serve for you in the near future not only exporting ion exchange resin, but also with other related water treatment equipment. On this stage of new company setting up, we will continue to provide you with resins at more competitive prices to help you enlarge your

market share and achieve more business success.” Said by: Mr. Rene Wang—General Manager



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## Strong Acid Cation Exchange Resins

DANHAO™	TYPE	IONIC FORM	TOTAL VOLUME CAPACITY eq/l	MOISTURE %	SHIPPING WEIGHT g/l	PARTICLE SIZE mm	REMARKS
001X7N	Gel-Poly	Na+	1.5-1.6	55-60	780-830	0.5-1.6	Normal Grade Industrial Softening
001X7GB			1.7	45-53	770-870	0315-1.25	National Grade Industrial Softening
001X7			1.9	47-53	770-870	0315-1.25	Softening + Demineralisation
001X7FC			1.9	45-50	770-870	0.45-1.25	Hi-flow Rate Floating/Fluidized Bed
001X7MB			1.9	45-50	770-870	0.5-1.25	Special for Mixed Bed
001X7H		H+	1.8	51-56	730-830	0.315-1.25	Demineralisation
001X8		Na+	2.0	42-50	780-880	0.315-1.25	Softening + Demineralisation
001X8FC			2.0	42-50	780-880	0.45-1.25	Hi-flow Rate Floating/Fluidized Bed
001X8MB			2.0	42-50	780-880	0.5-1.25	Special for Mixed Bed
001X8SC			2.1	38-43	810-870	0.63-1.25	Special for Strong/Weak Acid bi-layered bed with D113SC
001X8SC-H		H+	1.9	46-51	780-840		
001X10		Na+	2.2	38-43	800-880	0.315-1.25	Softening+Demineralisation 10% cross-linked longer service life and stronger
001X10H		H+	2.0	43-59	780-830		
DH001	Na+	1.9	40-50	760-860	0.5-1.0	UPS Cation for Demineralisation or Used with DH201 Anion for Polishing Mixed Bed	
D001	Macroporous-Poly	Na+	1.8	45-55	770-850	0.315-1.25	Higher Resistance to Oxidation, Physical Breakage, Osmotic Shock Fracture and Organic Fouling
D001H		H+	1.7	48-58	740-800		
D001FC		Na+	1.8	45-55	770-850	0.45-1.25	Macroporous Special for Strong/Weak Acid bi-layered bed with D113SC
D001MB						0.5-1.25	
D001SC						0.63-1.25	
D001TR						0.71-1.25	



## Strong Base Anion Exchange Resins

DANHAO™	TYPE	IONIC FORM	TOTAL VOLUME CAPACITY eq/l	MOISTURE %	SHIPPING WEIGHT g/l	PARTICLE SIZE mm	REMARKS
201X4	Gel-Poly	Cl-	1.1	50-60	660-710	0.315-	Demineralisation
201X40H		OH-	1.0	60-70	650-700	1.25	
201X7		Cl-	1.4	42-48	670-730	0.315-	Multiple Demineralisation FC for floating bed, MB for Mixed Bed, SC for Layered Bed
201X70H		OH-	1.1	53-58	660-710	1.25	
201X7FC		Cl-	1.4	42-48	670-730	0.4-1.25	
201X7SC			0.63-1.25				
201X7MB			0.4-1.9				
DH201		Cl-	1.4	40-50	660-750	0.45-0.8	UPS Anion for Demineralisation or Used with DH001 Cation for Polishing Mixed Bed
202		Cl-	1.4	36-46	680-760	0.315-1.25	II type Strong Base Anion, Nitrate Removal
D201		Macroporous-Poly	Cl-	1.2	50-60	650-730	0.315-
D2010H	OH-		1.0	55-65	630-700	1.25	
D201FC	Cl-		1.2	50-60	650-730	0.45-1.25	
D201SC			1.1			0.63-1.25	
D201MB			1.2			0.4-0.9	
D201TR	1.2					0.4-0.9	Tri-layered bed with D001TR and STR inert Resin
D202	Cl-		1.2	47-57	680-730	0.315-	Macroporous II type Anion, Higher Regeneration Efficiency, Resistance to Organic Fouling
D2020H	OH-		1.0	50-60	670-720	1.25	
D202FC	Cl-		1.2	47-57	680-730	0.45-1.25	
D202SC		1.15	0.63-1.25				

## Weak Acid Cation Exchange Resins

DANHAO™	TYPE	IONIC FORM	TOTAL VOLUME CAPACITY eq/l	MOISTURE %	SHIPPING WEIGHT g/l	PARTICLE SIZE mm	REMARKS
112	Gel-Polyacrylic	H+	4.3	40-50	720-820	0.315-1.25	Good Strength without Agglomeration for Potable Water Softening and Dealkalization
D113	Macroporous-Polyacrylic	H+	4.4	45-52	720-800	0.315-1.25	Softening + Dealkalization
D113FC			4.4	45-52	720-800	0.45-1.25	Hi-flow Rate Floating/Fluidized Bed
D113SC			4.4	45-52	720-800	0.315-0.63	Special for Bi-layered bed with D001SC

## Weak Base Anion Exchange Resins

DANHAO™	TYPE	IONIC FORM	TOTAL VOLUME CAPACITY eq/l	MOISTURE %	SHIPPING WEIGHT g/l	PARTICLE SIZE mm	REMARKS
D301	Macroporous-Poly	Free Amine	1.45	48-58	670-730	0.315-1.25	Superior Mechanical and Osmotic Strength, Demineralisation with Higher Regeneration Efficiency, Deionization of Higher EMA Waters, FC for Floating Bed, SC for Layered Bed
D301FC						0.45-1.25	
D301SC						0.315-0.63	

## Ready-to-use Mixed Bed Resins

DANHAO™	TYPE	IONIC FORM	TOTAL VOLUME CAPACITY eq/l	MOISTURE %	SHIPPING WEIGHT g/l	Volume Ratio	REMARKS
MB9L	Disposable	H+/ OH-	1.9/1.1	50-60	710-750	Cation 50%: Anion 50%	EDM and High Pure Water Production with Resistivity under 10 Megohm . cm
MB20			1.9/1.1	50-60	700-740	Cation 40%: Anion 60%	Super Pure Water Polishing Mixed Bed with Resistivity under 15 Megohm . cm
MB6150			2.0/1.2	50-60	680-720	Cation 34%: Anion 66%	Ultra-pure Water Polishing Mixed Bed after RO or EDI with Resistivity under 18 Megohm . cm

## Specialty Ion Exchange Resins

DANHAO™	TYPE	IONIC FORM	TOTAL VOLUME CAPACITY eq/l	MOISTURE %	SHIPPING WEIGHT g/l	PARTICLE SIZE mm	REMARKS
D751	Chelating Resin	Na+	30g/l Cu	55-65	710-780	0.315-1.25	Selective Removal of Heavy Metals from Wastewater and Hydrometallurgical Processes
DH301	Macroporous Anion Resin	Free Amine	1.35	55-65	650-750	0.6-1.5	Gold Recovery with Remarkably high Selectivity for Gold over Copper
S-TR	Inert Spacer Resin			<6	670-720	0.7-0.9	Tri-layered Bed Separation, Blue is also available



## Comparison Chart of Danhao Resins with International Brands

Danhao Resin	Bayer	Mitsubishi	Dow	Purolite	ResinTech	Rohm&Haas		Sybron	Россия / СНГ	Thermax	Application and Feature
	Lewatit	Diaion	Dowex			Amberlite	Duolite	IONAC	СНГ	Tulsion	
<b>Cation Resins</b>											
001x7	S100LF		HCR-S	C100E		SF-120				T40	Softener
001x8	S100	SK1B	HCR	C100	CG-8	IR-120	C20	C249	KY-2-8	T42	Softener + Demineralisation
001x10	S110	SK110	HGR-W2/C10	C100X10	CG-10	IR122	C20X10	C250		T52	Softener + Demineralisation
D001	SP112/120	PK216/228	MSC-1	C150/C160	SAC MP	IR200	C-26	CFP110	KY-23 10/100, KY-23 15/100	T42MP	Softener + Demineralisation Pure Water production WasteWater Treatment, Metal Recovery,High Oxidation Resistance
112				C105	WACG	IRC-86					Dealkalisation and recovery of streptomycin
D113	CNP-80	WK-40	MWC-1	C104	WAC MP	IRC-76/84		CCP	КБ-4	CX0-9	Dealkalisation and softening
001x7 FG				C120E							Potable Drink Softener
001X8 FG						SR1L					Softener + Demineralisation
D001 FG	SP210										Drinking Water with higher Cl
DH001			650C	SGC650		1200/100N a					UPS Condensate polishing
<b>Anion Resins</b>											
201x4	M504/510	SA12A	SBR-P	A400	SBG 1P	IRA402/420	A-113	ASB-1P	AB-17-8	A23P	Demineralisation
201x7	M500/511	SA10A	MRTTHON A	A600	SBG 1	IRA400	A-109	ASB-1		A23	Demineralisation+Ultrapure Water+ Silica Removal
202	M600/610	SA20A	SAR	A300	SBG 2	IRA410	A102/104	ASB-2		A32	Type 2,Demineralisation
D201	MP500	PA308/312	MSA-1	A500	SBMP 1	IRA900	A-161	A641	AB 17-10П/ 08	A27MP	Condensate polishing and removing large organic molecules
D202	MP600	PA412/416	MSA-2	A510		IRA910	A-162	A651		A36MP	Type2,Superior removal large organic molecules
D301	MP62	WA30	MWA-1	A100	WBMP	IRA93/94	A-329S	AFP-329		A-2XMP	Deionization of Higher EMA Waters
DH301				S992		IRA96RF				A-2XMP R	Gold Recovery
DH201			550A	SGA550		4200/4000C					UPS Condensate polishing
<b>Mixed Bed Resins</b>											
MB9L				MB39/MB46 /MB478/MB 378		MB9L					EDM, Pure Water Production for 10MΩ Resistivity
MB20			MR3	MB400	MBD-10	MB20		NM60			1:1.5 Cation:Anion Volume Ratio for 15MΩ Resistivity High Pure Water
MB6150			MR450UPW	NRW37		UP6040/611 3		NM60SG			1:2 Cation:Anion Volume Ratio for 18MΩ Resistivity Ultra Pure Water
001x7MB				C100EDL							Mixed Bed System Pure Water Production
201x7MB				A600DL							Mixed Bed System Pure Water Production
D001MB				C150DL							Mixed Bed System Pure Water Production,High Oxidation,Osmotic and Thermal shock Resistance
D201MB				A500DL							Mixed Bed System Pure Water Production,High Silica Free ability,Osmotic and Thermal shock Resistance
D001TR				C150TL							Tri-layered Bed System
D201TR				A500TL							Tri-layered Bed System
S-TR	IN42		XZ46287	IP4/IP-5	IT-5	RF14					Tri-layered Bed System Cation Anion separation, blue available
<b>Chelating Resins</b>											
D751	TP207	CR10/11	XZ95843	S930	SIR300	IRC748/718		SR5		CH-90	Heavy metals removal like Copper, Vanadium (VO), Uranium UO2, Lead, Nickel, Zinc, Cadmium, Iron Fe+2, Beryllium, Manganese, Calcium, Magnesium, Strontium, Barium, Sodium
<b>Adsorbent Resins</b>											
DA201				MN200							Adsorption of phenolic and other aromatic compounds from wastewater
DA202				PAD610		XAD16					Adsorption and separation antibiotic and stevioside,etc



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Website:http://chinaionexchange.com

### About Resin Particle Distribution and Customization(OEM)

(1) General Sized Resins (for conventional general bed systems)

Size range: (0.315-1.25mm)  $\geq$  95%, ( $\cong$  0.315mm)  $\leq$  1%; effective size:0.40-0.60mm;  
uniformity coefficient:  $\leq$  1.60

(2) FC resins (for floating bed systems)

Size range: (0.45-1.25mm)  $\geq$  95%, ( $\cong$  0.45mm)  $\leq$  1%; effective size:  $\geq$  0.50mm;  
uniformity coefficient:  $\leq$  1.60

(3) SC resins (for bi-layered bed systems)

Weak cation and weak anion resins: size range (0.355-0.63mm)  $\geq$  95%, ( $>$ 0.63mm)  $\leq$  1%; effective size: 0.35~0.50mm; uniformity coefficient  $\leq$ 1.40

Strong cation and strong anion resins: size range (0.63-1.25mm)  $\geq$  95%, ( $<$ 0.63mm)  $\leq$  1%; effective size  $\geq$ 0.63mm; uniformity coefficient  $\leq$ 1.40

(4) MB resins (for mixed bed systems)

Strong cation resins: size range (0.5-1.25mm)  $\geq$  95%, ( $<$ 0.5mm)  $\leq$  1%; effective size 0.55-0.90mm; uniformity coefficient  $\leq$ 1.40

Strong anion resins: size range (0.40-0.90mm)  $\geq$  95%, ( $>$ 0.90mm)  $\leq$ 1%, ( $<$ 0.315mm)  $\leq$ 1%; effective size 0.4-0.8mm; uniformity coefficient  $\leq$ 1.40

Remarks: When strong cation and strong anion resins are used as mixed bed resins, the difference of the effective sizes of the resins should be  $\leq$  0.1mm

(5) Ion exchange and adsorbent resins with uniform particle sizes

All Danhao ion exchange and adsorbent resins could be supplied in UPS with uniformity coefficient  $\leq$ 1.2

(6) The particle sizes and uniformity coefficient of all Danhao's ion exchange resin could be customized according to customers' requirements



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### Recommended Resins for Specific Contaminants

Chemical Contaminants Removed	Nature of Solution	Resin Model	Ion From	PH Range	Remarks
<b>Aluminum</b>	10-15% phosphoric acid	001X8-H/ 001X10-H	H	pH > 0	Regen w/ 20% H2SO4 (also removes Fe)
	10-15% phosphoric acid	D001-H	H	pH > 0	Used for improved resistance to breakage
	All waters	001x8	Na/H	pH >0	Works best at low pH
<b>Ammonia &amp; amines</b>	Alcohol solutions	001X8-H/ 001X10-H	H	pH >7	Acid regeneration
	Alcohol solutions	D113-H	H	pH > 7	Acid regeneration(only works when pH is >7)
	Soft water	001X8-H	H	pH > 7	Resin swells in alcohol
<b>Ammonia</b>	Soft water	001X8	Na	pH > 5	Salt regeneration(limited capacity/poor removal)
<b>Antimony (Antimonite)</b>	Concentrated hydrochloric acid	201X7/202	Cl	pH < 1	Forms chloride complexes/regen with water
<b>Arsenic (Arsenate)</b>	Soft or Hard water	201X7/202	Cl	pH < 10	Must be oxidized to arsenate
	Soft or Hard water	201X7/202	Cl	pH < 10	Present as anion, salt regeneration
<b>Barium</b>	Soft or Hard water	001X8/ 001X10	Na	pH > 2	Salt regeneration
<b>Boron (Borate)</b>	Irrigation Supplies	201X7	Cl	pH < 10	
<b>Cadmium</b>	Soft or DI water	001X8	Na	pH > 2	
	Hard water	D113	Na	pH > 6.5	
	Hard water	D751	Na	pH < 6.5	
	Cadmium cyanide plating effluents	201X7/202	Cl	pH < 10	
<b>Calcium</b>	Brine Purification	D761	Na	pH < 11	Also removes other hardness ions
<b>Chromium Cr+3</b>	Soft or Hard water	001X10/D001	Na	pH > 4	Can be salt regenerated (also removes hardness)
	Soft or Hard water	D113	Na	pH > 6	Sodium form operation (also removes hardness)
	Hard water	D751	Na	pH >1.5	Best choice for high TDS solutions
<b>Chromium Cr+6</b>	All waters	201X7/202	Cl	pH < 7.0	Salt regeneration



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	All waters	D301	FB4	pH < 6.0	Best choice for regenerable applications
<b>Cobalt</b>	Soft water	001X8	Na	pH > 2	Cannot remove cobalt past hardness break
	All waters	D751	Na	pH > 1.5	Cobalt is non-ionized at high pH
<b>Copper</b>	Copper cyanide plating	201X7/202	Cl	pH < 10	
	Hard water	D751	Na	pH > 1.5	
	Hard water	D113	Na	pH > 6.5	
	Soft water	001X8	Na	pH > 2	
<b>Cyanide</b>	Cyanide waste treated wth ferrous salts	213	Cl	pH > 7	Salt regenerated
	Hydroxide cycle	201X7/202	OH	pH < 11	
<b>Ferrocyanide</b>	Treated cyanide waste	213	Cl	pH < 10	Salt regenerated
<b>Fluorine (fluoride)</b>	Waste water	201X7/202	Cl	pH < 10	
<b>Gold</b>	Gold cyanide plating	201X7/202	Cl	pH < 10	Chloride cycle (not regenerated)
	Acid Gold plating effluents	D741	H	pH < 10	
<b>Iron</b>	Weakly acidic solutions	001X8	Na	pH > 2	Intermediate & weak acids up to phosphoric
	Concentrated hydrochloric acid	201X7	Cl	pH < 1	Regenerated by water rinse
<b>Lead</b>	Hard or Soft water	001X8	Na	pH > 2	Sodium or calcium form
	Waste water	D751	Na	pH > 1.5	Preferred where mixed metals are present
<b>Magnesium</b>	Brine Purification	D761	Na	pH < 11	Also removes other hardness ions
<b>Manganese</b>	Potable water	001X8	Na	pH > 2	Sodium form (Mn is removed with other hardness)
<b>Mercury (anionic)</b>	Tap water, all pH ranges	D741	Cl	pH < 10	
<b>Mercury (complexed)</b>	When present as organic complex	D751	Na	pH < 10	
<b>Mercury(cationic)</b>	Tap water, all pH ranges	D113/D741	Na	pH > 4	In absence of Chlorides
<b>Molybdenum</b>	Anionic complexes	D301	SO4	pH < 7	
<b>Nickel</b>	Hard water	D751	Na	pH > 1.5	Metal selective (does not remove hardness)

	Soft water	D761	Na	pH > 1.5	Metal selective (also removes hardness)
	Hard water	D113	Na	pH > 6.5	Sodium form (also removes hardness)
	Soft water	001X8	Na	pH > 2	Limited to low TDS soft water
<b>Nitrate</b>	High sulfate waters	D890	Cl	pH < 10	
	Low sulfate waters	201X7/202	Cl	pH < 10	
<b>Organics (natural)</b>	Decolorizing surface waters	D750	Cl	pH > 5	Can be salt regenerated
	Decolorizing surface waters	213	Cl	pH > 5	Can be salt regenerated
<b>Potassium</b>	Wine stabilization	001X8	Na	pH > 5	Can be salt regenerated
<b>Palladium</b>	Anionic complexes	201X7/202	Cl	pH < 10	
<b>Phenol</b>	Waste water	D301	FB	pH < 4	
<b>Phosphate</b>	Soft or hard water	201X4	Cl	pH < 10	Single bed salt regeneration or DI
<b>Platinum</b>	Anionic complexes	201X7/202	Cl	pH < 10	
<b>Radium</b>	Soft or hard water	001X8	Na/Ca	pH > 2	Can be salt regenerated
<b>Selenium (selenite)</b>	Soft or hard water	201X7/202	Cl	pH < 10	Single bed salt regeneration or DI
	Soft or hard water	201X7/202	Cl	pH < 10	Single bed salt regeneration or DI
<b>Silver</b>	Photographic wastes	201X7	Cl	pH < 11	Regenerated with sulfuric acid
	Silver cyanide plating	201X7	Cl	pH > 7	Use with D301 for regenerable applications
<b>Strontium</b>	Soft water	001X8	Na	pH > 2	
<b>Uranium (anion)</b>	Groundwater	201X7	Cl	pH < 10	Single bed salt regeneration
<b>Uranium (cation)</b>	Groundwater	001X8	Ca	pH > 2	Single bed salt regeneration
<b>Zinc</b>	Zinc cyanide plating effluents	201X7/ 202	Cl	pH > 7	
	Softened water	001X8	Na	pH 2 to 9	
	Hard water	D113	Na	pH 5 to 9	
	Hard water	D751	Na	pH < 6.5	



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	Concentrated acids	201X7/202	Cl	pH < 1	Removes zinc complexes/eluted with water
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## Danhao™ Ion Exchange Resins

### Proper Storage Conditions for Danhao Ion Exchange Resins

#### Storage of New, Unused Resin

Unused resins, in their original packaging, can be stored under proper conditions for longer than their recommended shelf life without experiencing a decline in their physical properties, in most cases. Standard demineralizing and softening resins experience minimal change in chemical properties over a three-year period. For more sensitive applications, shorter storage times are recommended as shown in the following table.

Resin	Ionic Form	Application			
		Softening	Demineralization	Nuclear	Ultrapure Water
Cation	Na	3 years	3 years		
Cation	H		3 years	3 years	3 years
Cation	NH <sub>4</sub>			3 years	
Anion types 1/2	Cl		3 years		
Anion type 1	OH		2 years	2 years	2 years
Ready to use mixed bed	H/OH		3 years	3 years	3 years

Resins should be stored in their original unopened packaging in a cool dry area. An indoor storage facility with climate control between 0-40 °C (32-105 °F) should be used for the best results.

Storage temperatures above 40 °C (105 °F) can cause premature loss of capacity for anion resins, particularly those stored in the OH-form. While cation resins can withstand higher temperatures (up to 80 °C/175 °F), it is best to store all resins under similar conditions. Storage temperatures below 0 °C (32 °F) can cause resin freezing. Tests of DANHAO™ resins under repeated freeze-thaw cycles show that bead damage can occur, so frozen resin must be thawed before safe loading can take place. Frozen resin should be thawed out completely under room temperature conditions before loading and use.

#### Storage of Used Resins

As with new resins, used resins should be stored under climate controlled conditions, where feasible, to maximize the life of the resins.

Additionally, care should be taken that resins are not exposed to air, as they will dry out and shrink. When re-hydrated, these resins are susceptible to bead breakage due to rapid re-swelling. The salt can then be removed by successive dilutions, to prevent rapid change in osmotic pressures and resulting bead breakage.

Biological growth problems can be caused by inactivity of the resin during extended storage. In order to minimize the potential for biofouling, inactive systems should be stored in a biostatic solution such as concentrated NaCl. In addition to minimizing biogrowth, the concentrated brine solution will prevent freezing. The recommended procedure for resins used for water demineralization is as follows:

- After exhaustion and a thorough backwash, the resin is ready for lay-up.
- Apply a 15-25% NaCl solution to the bed and fill the vessel so that no air is present.
- Upon reactivation of the vessel, the resin will need to be re-hydrated by successive washes of less concentrated salt to minimize osmotic shock.
- Prior to service, the beds must undergo a double or triple regeneration.

For mixed bed resins in condensate polishing and other ultrapure water applications, the resins should be left in a regenerated condition as follows:

- Separate the resins and carry out a double regeneration.
- Rinse out the regenerants and leave the resins in the rinse water.
- Flush the resins periodically down-flow (about once per week) to remove any TOC (Total Organic Carbon) leachate.
- Prior to start-up, rinse and regenerate as normal.

## Danhao™ Ion Exchange Resins

### Transportation for Danhao Ion Exchange Resins

**Transportation** During transportation of resins, precautions should be taken to avoid the extremes of temperatures as outlined previously. If product becomes frozen during transportation, thawing should take place gradually, without any physical interference. Moving resin in their primary packaging should be avoided if possible when in a frozen state

Warning: 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.



## Jiangyin Danhao Trading Co.,Ltd.

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 Email:sales@chinaionexchange.com  
 Website:http://chinaionexchange.com

### Strong Acid Cation Exchange Resin (001x7 Industry Grade)

001x7 is a GEL Type Strong Acid Cation Exchange Resin having 7% cross linked polystyrene matrix with sulphonic acid as a functional group. The resin has good operational capacity under various raw water quality. It also provides better physical stability. The resin is supplied with standard beads size distribution to give optimum operating capacity with minimum leakages of ions and also minimum pressure drop across the resin bed. The resin is available in both Na<sup>+</sup> and H<sup>+</sup> form.

001x7 is also available with varied particle size to match specific requirement, under different grades, the details are available with our technical service department.

PROPERTIES	
Matrix	Cross linked polystyrene
Functional Group	SO <sub>3</sub> Sulfonic
Ionic Form	Na + Sodium
Physical Form	Hard moist beads
Particle size (mm)	0.315-1.25
Moisture content %	47-53 Na <sup>+</sup> form
Total Exchange Capacity (Min) eq/ltr	1.9 Na <sup>+</sup> form
Bulk density or shipping weight gms/ltr	Na <sup>+</sup> form 770-870
Operating pH range	0-14
Solubility in common solvents	Insoluble
Operating Temperature °C (max)	120
Volume change% (max):Na <sup>+</sup> to H <sup>+</sup>	10

SUGGESTED OPERATING CONDITIONS		
Bed Depth	Meter	1.0-3.0
Regenerant Concentration	%	4-10 NaCl 2-5 HCl 2-4 H <sub>2</sub> SO <sub>4</sub>
Regenerant Flow Rate	Meter/Hour	5-8
Regenerant Contact Time	Minutes	30-60
Regeneration Level 100%	Kgs/m <sup>3</sup> of resins	75-150 NaCl 40-100 HCl 75-150 H <sub>2</sub> SO <sub>4</sub>
Rinse Flow Rate	Meter/Hour	10-20
Rinse Time	Minutes	30
Running Flow Rate	Meter/Hour	10-40



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**APPLICATIONS:** 001x7 (Na+) is generally used for softening application. The resin has excellent physical strength and is highly resistant to osmotic shocks. 001x7 (H+) is generally used for demineralization application, and it gives very low level of Sodium leakages. For demineralization application 001x7 is recommended to get high purity water depending on the raw water quality. In polishing units the MB grade of 001x7 along with MB grade of 201x7 is recommended for mixed bed units to obtain high purity of water required for high pressure boiler and steam generator.

**PACKING:**

Super Sack	1000Liters
PP/PE Bag	25Liters
PP/PE Bag	25Kgs

**CAUTION:** Strong oxidizing agents like nitric acid can cause explosive type reaction, when mixed with Ion Exchange resins. Knowledgeable sources should be consulted in the handling of this material.

**NOTE:** Ion Exchange Resins are sold on a volume basis, but are packed and shipped by weight. The shipping weight for each resin is fixed & does not take into consideration the variations in density and moisture content allowed within the product specifications. Therefore although the weight of the material is constant, there may be slight variations in volume, reflecting batch to batch variation of density and moisture content.

**STORAGE CONDITIONS:** The resin supplied in drums or bags should be stored in cool shed (warehouse) away from direct sunlight & should be periodically damped down with clean water.



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### Strong Acid Cation Exchange Resin (001x8 Industry Grade)

001x8 is a GEL Type Strong Acid Cation Exchange Resin having 8% cross linked polystyrene matrix with sulphonic acid as a functional group. The resin has good operational capacity under various raw water quality. It also provides better physical stability. The resin is supplied with standard beads size distribution to give optimum operating capacity with minimum leakages of ions and also minimum pressure drop across the resin bed. The resin is available in both Na<sup>+</sup> and H<sup>+</sup> form.

001x8 is also available with varied particle size to match specific requirement, under different grades, the details are available with our technical service department.

PROPERTIES	
Matrix	Cross linked polystyrene
Functional Group	SO <sub>3</sub> Sulfonic
Ionic Form	Na <sup>+</sup>
Physical Form	Hard moist beads
Particle size (mm)	0.315-1.25
Moisture content %	42-50
Total Exchange Capacity (Min) eq/ltr	2.0
Bulk density or shipping weight gms/ltr	form 780-880
Operating pH range	0-14
Solubility in common solvents	Insoluble
Operating Temperature °C (max)	120
Volume change% (max):Na <sup>+</sup> to H <sup>+</sup>	10

SUGGESTED OPERATING CONDITIONS		
Bed Depth	Meter	1.0-3.0
Regenerant Concentration	%	4-10 NaCl 2-5 HCl 2-4 H <sub>2</sub> SO <sub>4</sub>
Regenerant Flow Rate	Meter/Hour	5-8
Regenerant Contact Time	Minutes	30-60
Regeneration Level 100%	Kgs/m <sup>3</sup> of resins	75-150 NaCl 40-100 HCl 75-150 H <sub>2</sub> SO <sub>4</sub>
Rinse Flow Rate	Meter/Hour	10-20
Rinse Time	Minutes	30
Running Flow Rate	Meter/Hour	10-40



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**APPLICATIONS:** 001x8 (Na+) is generally used for softening application. The resin has excellent physical strength and is highly resistant to osmotic shocks. 001x8 (H+) is generally used for demineralization application, and it gives very low level of Sodium leakages. For demineralization application 001x8 is recommended to get high purity water depending on the raw water quality. Its performance is better and the criterion is higher than 001x7 series.

**PACKING:**

Super Sack	1000Liters
PP/PE Bag	25Liters
PP/PE Bag	25Kgs

**CAUTION:** Strong oxidizing agents like nitric acid can cause explosive type reaction, when mixed with Ion Exchange resins. Knowledgeable sources should be consulted in the handling of this material.

**NOTE:** Ion Exchange Resins are sold on a volume basis, but are packed and shipped by weight. The shipping weight for each resin is fixed & does not take into consideration the variations in density and moisture content allowed within the product specifications. Therefore although the weight of the material is constant, there may be slight variations in volume, reflecting batch to batch variation of density and moisture content.

**STORAGE CONDITIONS:** The resin supplied in drums or bags should be stored in cool shed (warehouse) away from direct sunlight & should be periodically damped down with clean water.





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### Strong Acid Cation Exchange Resin (001x10 Industry Grade)

001x10 is a premium high purity grade of conventional gel poly (styrene sulfonate) cation exchange resin. Its chemical and physical stability, particularly its resistance to oxidation and very low extractables content plays a large part in its successful employment in demineralization of water. The size grading ensures trouble free operation in both standard co-flow and counter-flow operation. The higher density spheres of the graded cation resin ensures good backwash separation at the recommended flow rates. The higher 10% cross-linking will give greatly increased life where resin degradation due to oxidative effects are anticipated such as in condensate softening. The low percentage swelling on conversion from exhausted to regenerated form allows the resin bed to be free of compacted areas when reintroduced to service in the exhaustion cycle. This ensures low pressure drop during service. The resin is available in both Na<sup>+</sup> and H<sup>+</sup> form.

PROPERTIES	
Matrix	Cross linked polystyrene
Functional Group	SO <sub>3</sub> Sulfonic
Ionic Form	Na <sup>+</sup>
Physical Form	Hard moist beads
Particle size (mm)	0.315-1.25
Uniformity Coefficient	1.6
Moisture content %	38-43
Total Exchange Capacity (Min) eq/ltr	2.2
Bulk density or shipping weight gms/ltr	form 800-880
Operating pH range	0-14
Solubility in common solvents	Insoluble
Operating Temperature °C (max)	140
Volume change% (max):Na <sup>+</sup> to H <sup>+</sup>	5

SUGGESTED OPERATING CONDITIONS		
Bed Depth	Meter	0.6-3.0
Regenerant Concentration	%	10-15 NaCl 4-10 HCl 1-5 H <sub>2</sub> SO <sub>4</sub>
Regenerant Flow Rate	BV/Hour	2-8
Regenerant Contact Time	Minutes	30-60
Regeneration Level 100%	Kgs/m <sup>3</sup> of resins	48-320 NaCl 80-320 HCl

**APPLICATIONS:** 001x10 can be used in multiple bed demineralizers with strongly basic anion exchangers such as 201x4, 202 and D201.001X10 is also ideally suited for industrial



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softening applications. It has a higher level of DVB than 001x8.This gives 001x10 a longer service life when softening aggressive waters.

### PACKING:

Super Sack	1000Liters
PP/PE Bag	25Liters
PP/PE Bag	25Kgs

**CAUTION:** Strong oxidizing agents like nitric acid can cause explosive type reaction, when mixed with Ion Exchange resins. Knowledgeable sources should be consulted in the handling of this material.

**NOTE:** Ion Exchange Resins are sold on a volume basis, but are packed and shipped by weight. The shipping weight for each resin is fixed & does not take into consideration the variations in density and moisture content allowed within the product specifications. Therefore although the weight of the material is constant, there may be slight variations in volume, reflecting batch to batch variation of density and moisture content.

**STORAGE CONDITIONS:** The resin supplied in drums or bags should be stored in cool shed (warehouse) away from direct sunlight & should be periodically damped down with clean water.



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### Macroporous Strong Acid Cation Exchange Resin (D001 Industry Grade)

D001 is a macroporous poly (styrene sulfonate) cation exchange resin with excellent resistance to both osmotic and thermal shock. Its special sponge-like structure permits higher rates of diffusion of most cations including those of heavy metals and amines and also positively charged organics of higher molecular weight, and facilitates their removal on regeneration. These properties of physical robustness, good regenerability, and fast kinetics of exchange make it ideal for a range of applications.

D001 is also available with varied particle size to match specific requirement, under different grades, the details are available with our technical service department.

PROPERTIES	
Matrix	Macroporous crosslinked with divinylbenzene
Functional Group	SO <sub>3</sub> Sulfonic
Ionic Form	Na + Sodium
Physical Form	Hard moist beads
Particle Size (mm)	0.315-1.25
Mean Size (mm)	0.5-0.9
Moisture content %	45-55 Na <sup>+</sup> form
Total Exchange Capacity (Min) eq/ltr	1.8 Na <sup>+</sup> form
Bulk density or shipping weight gms/ltr	Na <sup>+</sup> form 770-850
Operating pH range	0-14
Solubility in common solvents	Insoluble
Operating Temperature °C (max)	140
Swelling Rate% (max):Na <sup>+</sup> to H <sup>+</sup>	4

**APPLICATIONS:** D001 in the hydrogen/sodium form for use in water softening, dealkalization, demineralization, condensate polishing and chemical processing applications. This resin combines the high exchange capacity of a gel type resin like 001x8 with the exceptional physical and chemical stability of macroporous resin.

**PACKING:**

Super Sack	1000Liters
PP/PE Bag	25Liters
PP/PE Bag	25Kgs

**CAUTION:** Strong oxidizing agents like nitric acid can cause explosive type reaction, when mixed with Ion Exchange resins. Knowledgeable sources should be consulted in the handling of this material.



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**NOTE:** Ion Exchange Resins are sold on a volume basis, but are packed and shipped by weight. The shipping weight for each resin is fixed & does not take into consideration the variations in density and moisture content allowed within the product specifications. Therefore although the weight of the material is constant, there may be slight variations in volume, reflecting batch to batch variation of density and moisture content.

**STORAGE CONDITIONS:** The resin supplied in drums or bags should be stored in cool shed (warehouse) away from direct sunlight & should be periodically damped down with clean water.



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### Strong Acid Cation Exchange Resin (DH001 Industry Grade)

DH001 resin is a uniform particle size, high quality, strong acid cation exchanger designed for use in all water treatment applications: softening as well as demineralization.

The uniformity and mean particle size of DH001 resin have been optimized for use in industrial equipment. In H<sup>+</sup> cycle, it can be used in mixed bed applications paired with DH201 resin. DH001 resin can be directly substituted for conventional gel cation exchange resin in new equipment and in rebeds of existing installations. The resin is available in both Na<sup>+</sup> and H<sup>-</sup> form.

PROPERTIES	
Matrix	Cross linked polystyrene
Functional Group	SO <sub>3</sub> Sulfonic
Ionic Form	Na + Sodium
Physical Form	Hard moist beads
Particle size (mm)	0.5-1.0
Moisture content %	40-50 Na <sup>+</sup> form
Total Exchange Capacity (Min) eq/ltr	1.9 Na <sup>+</sup> form
Bulk density or shipping weight gms/ltr	Na <sup>+</sup> form 760-860
Operating pH range	0-14
Solubility in common solvents	Insoluble
Operating Temperature °C (max)	120
Volume change% (max):Na <sup>+</sup> to H <sup>+</sup>	10

#### PACKING:

Super Sack	1000Liters
PP/PE Bag	25Liters
PP/PE Bag	25Kgs

**CAUTION:** Strong oxidizing agents like nitric acid can cause explosive type reaction, when mixed with Ion Exchange resins. Knowledgeable sources should be consulted in the handling of this material.

**NOTE:** Ion Exchange Resins are sold on a volume basis, but are packed and shipped by weight. The shipping weight for each resin is fixed & does not take into consideration the variations in density and moisture content allowed within the product specifications. Therefore although the weight of the material is constant, there may be slight variations in volume, reflecting batch to batch variation of density and moisture content.



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**STORAGE CONDITIONS:** The resin supplied in drums or bags should be stored in cool shed (warehouse) away from direct sunlight & should be periodically damped down with clean water.





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### Strong Base Anion Exchange Resin (201x4 Industry Grade)

201x4 is a Gel Type Strong Base Anion Exchange Resin based on polystyrene matrix with quaternary ammonium functional group. 201x4 gives high throughput and consistent quality. 201x4 resins in combination with 001x7 resins, gives excellent performance in mixed beds.

201x4 is high capacity resin which achieves lowest possible silica under varied water conditions. The resin is supplied in transparent moist bead form with high beads strength. The resin is suitable for demineralization system incorporating co-current and counter-current operations.

PROPERTIES	
Matrix	Cross linked polystyrene
Functional Group	Quaternary Ammonium
Ionic Form	Cl <sup>-</sup> Chloride
Physical Form	Hard moist beads
Particle size (mm)	0.315-1.25
Moisture content %	50-60
Total Exchange Capacity (Min) eq/ltr	1.1
Bulk density or shipping weight gms/ltr	660-710
Operating pH range	0-14
Solubility in common solvents	Insoluble
Operating Temperature °C (max)	80
Volume change% (max):Cl <sup>-</sup> to OH <sup>-</sup>	25

SUGGESTED OPERATING CONDITIONS		
Bed Depth	Meter	1.0-3.0
Regenerant Concentration	%	4-5 NaOH
Regenerant Flow Rate	Meter/Hour	4-6
Regenerant Contact Time	Minutes	30-60
Regeneration Level 100%	Kgs/m <sup>3</sup> of resins	40-80 NaOH
Rinse Flow Rate	Meter/Hour	15-25
Rinse Time	Minutes	25
Running Flow Rate	Meter/Hour	15-25

**APPLICATIONS:** 201x4 is recommended in the two bed system of demineralization system. The resin has a lower silica and carbonic acid leakages, hence gives higher silica removal capacity in demineralization units.

201x4 is also used as a mixed bed resin along with 001x7 as a polishing unit to achieve



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lowest residual silica in treated water and water of high purity is obtained. The resin is also used in absorption process, fractionalization process of weak acid, biochemical's and pharmaceutical intermediates. 201x4 and 201x7 are quite similar, the difference between them is the degree of porosity. 201x4 has greater porosity that gives it faster kinetics, and greater ability to reversibly sorb slow moving ions such as Naturally occurring Organic Matter (NOM). At lower regeneration levels and where chlorides make up a substantial portion of the anion load, or where the removal and elution of naturally occurring organics is of concern 201x4,202 should be considered. At the higher regeneration levels used in mixed bed polishers 201x7 provides higher capacity, and the lowest possible TOC leach rates.

### PACKING:

Super Sack	1000Liters
PP/PE Bag	25Liters
PP/PE Bag	25Kgs

**CAUTION:** Strong oxidizing agents like nitric acid can cause explosive type reaction, when mixed with Ion Exchange resins. Knowledgeable sources should be consulted in the handling of this material.

**NOTE:** Ion Exchange Resins are sold on a volume basis, but are packed and shipped by weight. The shipping weight for each resin is fixed & does not take into consideration the variations in density and moisture content allowed within the product specifications. Therefore although the weight of the material is constant, there may be slight variations in volume, reflecting batch to batch variation of density and moisture content.

**STORAGE CONDITIONS:** The resin supplied in drums or bags should be stored in cool shed (warehouse) away from direct sunlight & should be periodically damped down with clean water.



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### Strong Base Anion Exchange Resin (201x7 Industry Grade)

201x7 is a Gel Type Strong Base Anion Exchange Resin based on polystyrene matrix with quaternary ammonium functional group. 201x7 gives high throughput and consistent quality. 201x7 resins in combination with 001x7 resins, gives excellent performance in mixed beds.

201x7 is high capacity resin which achieves lowest possible silica under varied water conditions. The resin is supplied in transparent moist bead form with high beads strength. The resin is suitable for demineralization system incorporating co-current and counter-current operations.

PROPERTIES	
Matrix	Cross linked polystyrene
Functional Group	Quaternary Ammonium
Ionic Form	Cl <sup>-</sup> Chloride
Physical Form	Hard moist beads
Particle size (mm)	0.315-1.25
Moisture content %	42-48
Total Exchange Capacity (Min) eq/ltr	1.4
Bulk density or shipping weight gms/ltr	670-730
Operating pH range	0-14
Solubility in common solvents	Insoluble
Operating Temperature °C (max)	80
Volume change% (max):Cl <sup>-</sup> to OH <sup>-</sup>	25

SUGGESTED OPERATING CONDITIONS		
Bed Depth	Meter	1.0-3.0
Regenerant Concentration	%	4-5 NaOH
Regenerant Flow Rate	Meter/Hour	4-6
Regenerant Contact Time	Minutes	30-60
Regeneration Level 100%	Kgs/m <sup>3</sup> of resins	40-80 NaOH
Rinse Flow Rate	Meter/Hour	15-25
Rinse Time	Minutes	25
Running Flow Rate	Meter/Hour	15-25

**APPLICATIONS:** 201x7 is recommended in the two bed system of demineralization system. The resin has a lower silica and carbonic acid leakages, hence gives higher silica removal capacity in demineralization units.

201x7 is also used as a mixed bed resin along with 001x7 as a polishing unit to achieve



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lowest residual silica in treated water and water of high purity is obtained. The resin is also used in absorption process, fractionalization process of weak acid, biochemical's and pharmaceutical intermediates.

### PACKING:

Super Sack	1000Liters
PP/PE Bag	25Liters
PP/PE Bag	25Kgs

**CAUTION:** Strong oxidizing agents like nitric acid can cause explosive type reaction, when mixed with Ion Exchange resins. Knowledgeable sources should be consulted in the handling of this material.

**NOTE:** Ion Exchange Resins are sold on a volume basis, but are packed and shipped by weight. The shipping weight for each resin is fixed & does not take into consideration the variations in density and moisture content allowed within the product specifications. Therefore although the weight of the material is constant, there may be slight variations in volume, reflecting batch to batch variation of density and moisture content.

**STORAGE CONDITIONS:** The resin supplied in drums or bags should be stored in cool shed (warehouse) away from direct sunlight & should be periodically damped down with clean water.



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### Type II Strong Base Anion Exchange Resin (202 Industry Grade)

202 is an industrial grade, polystyrenic, gel, type II strong base anion exchange resin normally supplied in the chloride form but also available in the regenerated hydroxide form as 202 OH. Its principal application is in water demineralization. Like all strong base anion resins, the resin swells between the exhausted and regenerated form. This must be taken into account in any design calculations.

Strong base type II anion resins have a higher operating capacity compared to other strong base anion resins. They can achieve very good silica removal and in co-flow regenerated plants they offer slightly higher silica leakage than type I resins. They do not have the same resistance to organic fouling offered by acrylic strong base resins or the temperature stability associated with polystyrenic strong base type I resins when operated in the hydroxide form. They are not so commonly employed in hot climates or other situations when warm water is encountered, e.g. where the raw water is preheated. 202 resin is therefore most widely found in anion units treating waters with a high TDS content. On exhaustion, the resin can be regenerated with a dilute solution of sodium hydroxide.

<b>PROPERTIES</b>	
Matrix	Styrene Cross-linked with DVB
Functional Group	Quaternary Ammonium II
Ionic Form	Cl <sup>-</sup> Chloride
Physical Form	Hard moist beads
Particle size (mm)	0.315-1.25
Moisture content %	36-46
Total Exchange Capacity (Min) eq/ltr	1.4
Bulk density or shipping weight gms/ltr	680-760
Uniformity Coefficient(Max)	1.6
Operating pH range	0-14
Solubility in common solvents	Insoluble
Operating Temperature °C (max)	60 Cl <sup>-</sup> /35 OH <sup>-</sup>
Volume Change% (max):Cl <sup>-</sup> to OH <sup>-</sup>	10

<b>SUGGESTED OPERATING CONDITIONS</b>		
Bed Depth(Min)	Meter	0.6
Regenerant Concentration	%	4-5 NaOH
Regenerant Contact Time	Minutes	30-60
Regeneration Level 100%	Kgs/m <sup>3</sup> of resins	40-160 NaOH
Running Flow Rate	BV/Hour	5-40



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### PACKING:

Super Sack	1000Liters
PP/PE Bag	25Liters
PP/PE Bag	25Kgs

**CAUTION:** Strong oxidizing agents like nitric acid can cause explosive type reaction, when mixed with Ion Exchange resins. Knowledgeable sources should be consulted in the handling of this material.

**NOTE:** Ion Exchange Resins are sold on a volume basis, but are packed and shipped by weight. The shipping weight for each resin is fixed & does not take into consideration the variations in density and moisture content allowed within the product specifications. Therefore although the weight of the material is constant, there may be slight variations in volume, reflecting batch to batch variation of density and moisture content.

**STORAGE CONDITIONS:** The resin supplied in drums or bags should be stored in cool shed (warehouse) away from direct sunlight & should be periodically damped down with clean water.





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### Macroporous Strong Base Anion Exchange Resin (D201 Industry Grade)

D201 is a highly efficient and durable, strong base, Type I macroporous anion exchange resin with quaternary ammonium as the functional group. Its macroporous structure provides high operating capacity and excellent regeneration efficiency and allows complete removal of all anions, including weakly dissociated ions such as silica. This structure with strong basicity also permits the removal of large size soluble organic molecules and imparts superior resistance to mechanical and osmotic shock. The resin is available in both Cl- and OH- form.

D201 is also available with varied particle size to match specific requirement, under different grades, the details are available with our technical service department.

PROPERTIES	
Matrix	Styrene Cross-linked with DVB
Functional Group	Quaternary Ammonium
Ionic Form	Cl- Chloride
Physical Form	Hard moist beads
Particle size (mm)	0.315-1.25
Moisture content %	50-60
Total Exchange Capacity (Min) eq/ltr	1.2
Bulk density or shipping weight gms/ltr	650-730
Uniformity Coefficient(Max)	1.6
Operating pH range	0-14
Solubility in common solvents	Insoluble
Operating Temperature °C (max)	80
Volume Change% (max):Cl- to OH-	20

SUGGESTED OPERATING CONDITIONS		
Bed Depth(Min)	Meter	0.6
Regenerant Concentration	%	4-8 NaOH
Regenerant Flow Rate	BV/Hour	4-6
Regenerant Contact Time	Minutes	30-60
Regeneration Level 100%	Kgs/m <sup>3</sup> of resins	50-150 NaOH
Running Flow Rate	BV/Hour	15-60

**APPLICATIONS:** D201 could be applied as simply called macroporous version 201x4, offers greater resistance to oxic-settling-anaerobic process. Mainly used in condensate



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polishing or make-up mixed beds, where its polymer structure helps in resisting organic fouling. Used in the deionization or demineralization of water, D201 is capable of reducing both strong acid and weak acid concentrations to very low levels. As adsorption application, it also could be used to adsorb gold from the cyanide ore pulp.

### PACKING:

Super Sack	1000Liters
PP/PE Bag	25Liters
PP/PE Bag	25Kgs

**CAUTION:** Strong oxidizing agents like nitric acid can cause explosive type reaction, when mixed with Ion Exchange resins. Knowledgeable sources should be consulted in the handling of this material.

**NOTE:** Ion Exchange Resins are sold on a volume basis, but are packed and shipped by weight. The shipping weight for each resin is fixed & does not take into consideration the variations in density and moisture content allowed within the product specifications. Therefore although the weight of the material is constant, there may be slight variations in volume, reflecting batch to batch variation of density and moisture content.

**STORAGE CONDITIONS:** The resin supplied in drums or bags should be stored in cool shed (warehouse) away from direct sunlight & should be periodically damped down with clean water.



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### Macroporous Strong Base Anion Exchange Resin (D202 Industry Grade)

D202 is a highly efficient and durable strong base type II macroporous anion exchanger offering an exceptionally high operating capacity equivalent to gel type anion resin. D202 has slightly lower basicity than Type I resins and as such shows greater regeneration efficiency and operating capacity at equivalent regeneration levels compared to Type I resins. The macroporous nature of D202 ensures consistent long-term performance in demineralization and de-alkalization of water. D202 is recommended where removal of strong as well as weak acids is necessary at high regeneration efficiencies. However, due to slightly lower basicity, silica leakage is marginally higher compared to Type I anion resins.

PROPERTIES	
Matrix	Macroporous Styrene Cross-linked with DVB
Functional Group	Quaternary Ammonium II
Ionic Form	Cl <sup>-</sup> Chloride
Physical Form	Hard moist beads
Particle size (mm)	0.315-1.25
Moisture content %	47-57
Total Exchange Capacity (Min) eq/ltr	1.2
Bulk density or shipping weight gms/ltr	680-730
Uniformity Coefficient(Max)	1.6
Operating pH range	0-14
Solubility in common solvents	Insoluble
Operating Temperature °C (max)	60
Volume Change% (max):Cl <sup>-</sup> to OH <sup>-</sup>	9

SUGGESTED OPERATING CONDITIONS		
Bed Depth(Min)	Meter	0.6
Regenerant Concentration	%	4-8 NaOH
Regenerant Contact Time	Minutes	15-60
Regeneration Level 100%	Kgs/m <sup>3</sup> of resins	40-160 NaOH
Running Flow Rate	BV/Hour	5-40

#### PACKING:

Super Sack	1000Liters
PP/PE Bag	25Liters
PP/PE Bag	25Kgs



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**NOTE:** Ion Exchange Resins are sold on a volume basis, but are packed and shipped by weight. The shipping weight for each resin is fixed & does not take into consideration the variations in density and moisture content allowed within the product specifications. Therefore although the weight of the material is constant, there may be slight variations in volume, reflecting batch to batch variation of density and moisture content.

**STORAGE CONDITIONS:** The resin supplied in drums or bags should be stored in cool shed (warehouse) away from direct sunlight & should be periodically damped down with clean water.



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### Strong Base Anion Exchange Resin (DH201 Industry Grade)

DH201 Cl is a uniform particle size, high quality, strong base type 1 anion exchanger designed for use in all general demineralization systems. The uniformity and mean particle size of DH201 Cl have been optimized for use in industrial equipment including mixed beds, when paired with DH001 H form or Na form. DH201 Cl can be directly substituted for conventional gel anion exchange resin in new equipment and in rebeds of existing demineralizers. The resin is available in both Cl and OH form.

PROPERTIES	
Matrix	Cross linked polystyrene
Functional Group	Quaternary Ammonium
Ionic Form	Cl <sup>-</sup> Chloride
Physical Form	Hard moist beads
Particle size (mm)	0.45-0.8
Moisture content %	40-50
Total Exchange Capacity (Min) eq/ltr	1.4
Bulk density or shipping weight gms/ltr	660-750
Operating pH range	0-14
Solubility in common solvents	Insoluble
Operating Temperature °C (max)	80
Volume change% (max):Cl <sup>-</sup> to OH <sup>-</sup>	25

#### PACKING:

Super Sack	1000Liters
PP/PE Bag	25Liters
PP/PE Bag	25Kgs

**CAUTION:** Strong oxidizing agents like nitric acid can cause explosive type reaction, when mixed with Ion Exchange resins. Knowledgeable sources should be consulted in the handling of this material.

**NOTE:** Ion Exchange Resins are sold on a volume basis, but are packed and shipped by weight. The shipping weight for each resin is fixed & does not take into consideration the variations in density and moisture content allowed within the product specifications. Therefore although the weight of the material is constant, there may be slight variations in volume, reflecting batch to batch variation of density and moisture content.

**STORAGE CONDITIONS:** The resin supplied in drums or bags should be stored in cool shed (warehouse) away from direct sunlight & should be periodically damped down with



China Ion Exchange Resin Supplier

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clean water.



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### Macroporous Weak Acid Cation Exchange Resin (D113 Industry Grade)

D113 is a premium grade, macro porous, weak acid cation resin supplied in the form of hydrogen as moist, tough, uniform, spherical grains containing carboxylic acid groups. It is characterized by a volume variation smaller than that of conventional weak acid resins and can therefore be used between the Na<sup>+</sup> and H<sup>+</sup> or NH<sub>4</sub><sup>+</sup> forms . It can of course also be used to remove bicarbonate harness from water.

D113 is also available with varied particle size to match specific requirement, under different grades, the details are available with our technical service department.

PROPERTIES	
Matrix	Gel Polyacrylic crosslinked with divinylbenzene
Functional Group	Carboxylic Acid
Ionic Form	H + Hydrogen
Physical Form	Hard moist beads
Particle Size (mm)	0.315-1.25
Mean Size (mm)	0.4-0.7
Moisture content %	45-52 H <sup>+</sup> form
Total Exchange Capacity (Min) eq/ltr	4.4 H <sup>+</sup> form
Bulk density or shipping weight gms/ltr	H <sup>+</sup> form 720-800
Operating pH range	4-14
Solubility in common solvents	Insoluble
Operating Temperature °C (max)	100
Swelling Rate% (max):H <sup>+</sup> to Na <sup>+</sup>	65

**APPLICATIONS:** D113 (H<sup>+</sup>) is generally used for hydrogen cycle dealkalization, deionization and chemical processing application. It can also be supplied in the sodium form for use in sodium cycle applications, such as softening and removal of heavy metal cations, etc.

**PACKING:**

Super Sack	1000Liters
PP/PE Bag	25Liters
PP/PE Bag	25Kgs

**CAUTION:** Strong oxidizing agents like nitric acid can cause explosive type reaction, when mixed with Ion Exchange resins. Knowledgeable sources should be consulted in the handling of this material.



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**STORAGE CONDITIONS:** The resin supplied in drums or bags should be stored in cool shed (warehouse) away from direct sunlight & should be periodically damped down with clean water.





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### Macroporous Weak Base Anion Exchange Resin (D301 Industry Grade)

D301 is an extremely durable macroporous weak base anion exchange resin characterized by tertiary amine groups attached to a styrene divinylbenzene copolymer matrix. It has a unique physical structure which gives it superior kinetics and greater resistance to osmotic shock than gel type weak base anion exchangers.

D301 yields exceptionally high operating capacity on caustic soda regeneration and has low rinse requirements. It has a higher resistance to organic matter than gel type anion exchangers.

D301 is supplied as moist spherical beads in free base form, ready to use. D301 removes free mineral acid ions like chloride, sulphate, nitrate etc. but will not remove weak acid ions like silica and carbon dioxide. In a demineralization system, D301 can be placed preceding a strong base anion exchanger. This system offers a more economical regeneration cost, as D301 operates at a very high regeneration efficiency in comparison to strong base exchangers. Additional savings can be achieved by regenerating the weak base and strong base exchangers in series. The design must, however take care to prevent silica precipitation on the weak base exchanger. D301 placed preceding a strong base anion exchanger also serves to protect it from organic fouling.

<b>PROPERTIES</b>	
Matrix	Macroporous styrene cross-linked with DVB
Functional Group	Tertiary Ammonium
Ionic Form	FB Form
Physical Form	Hard moist beads
Particle size (mm)	0.315-1.25
Uniformity Coefficient	1.6
Moisture content %	48-58
Total Exchange Capacity (Min) eq/ltr	1.45
Bulk density or shipping weight gms/ltr	670-730
Operating pH range	0-9
Solubility in common solvents	Insoluble
Operating Temperature °C (max)	60 in FB/100 in Cl- Form
Volume change% (max):FB to Cl-	20

<b>SUGGESTED OPERATING CONDITIONS</b>		
Bed Depth(Min)	Meter	0.6
Regenerant Concentration	%	1-5 NaOH
Regenerant Flow Rate	BV/Hour	2-8



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Regenerant Contact Time	Minutes	20-60
Regeneration Level 100%	Kgs/m3 of resins	40-80 NaOH
Rinse Flow Rate	BV/Hour	2-8 slow/10-40 fast
Rinse Time	Minutes	30-60 slow
		10-30 fast
Running Flow Rate	BV/Hour	10-40

**APPLICATIONS:** D301 is suitable for demineralization of water for industrial steam generation operated with co-current or modern counter-current systems. It is able to remove high molecular weight organic materials from the influent water, thus protecting a following strong base resin from fouling. The organics are readily eluted, and the regenerated resin shows good rinse behavior, and a very acceptable operating capacity on relatively high-TDS waters.

While there are several other specially-tailored macroporous intermediate-base resins in the D301 series, D301 itself is probably the most generally useful. A suitably-graded version, D301MB is recommended for use in conjunction with 201 II type or 201x4 in layered-bed anion exchange systems.

### PACKING:

Super Sack	1000Liters
PP/PE Bag	25Liters
PP/PE Bag	25Kgs

**CAUTION:** Strong oxidizing agents like nitric acid can cause explosive type reaction, when mixed with Ion Exchange resins. Knowledgeable sources should be consulted in the handling of this material.

**NOTE:** Ion Exchange Resins are sold on a volume basis, but are packed and shipped by weight. The shipping weight for each resin is fixed & does not take into consideration the variations in density and moisture content allowed within the product specifications. Therefore although the weight of the material is constant, there may be slight variations in volume, reflecting batch to batch variation of density and moisture content.

**STORAGE CONDITIONS:** The resin supplied in drums or bags should be stored in cool shed (warehouse) away from direct sunlight & should be periodically damped down with clean water.



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### Danhao™ MB9L – EDM Specialty Mixed-Bed Resin

#### Industry Grade Non-Regenerable Mixed Bed Resin

MB9L is mainly characterized by a high exchange capacity, and is specifically designed for the partial demineralization of water, metal electro-erosion systems(EDM), water conditioning for steam irons, top-up of car batteries, stain prevention in the glazing industry, cleaning of glassware, window washing/water fed poles for a spot free rinse and in hospitals. Using this resin, customers do not need a system with acid or base regenerated and stratified layer. The resin life is maximized when used as a post-polisher after a RO or DI plant, is capable of producing high-purity water with low conductivity values, and suitable for applications when typically a water quality of 0.1microSiemens/cm is required. The resin contains no dye indicator to show exhaustion of the resin and a conductivity meter is needed to monitor the treated water quality and the exhaustion endpoint.

PROPERTIES	
Ratio of Cation/Anion	50%:50%
Ionic Form	H + / OH-
Moisture content %	50-60%
Total Exchange Capacity (Min) eq/ltr	1.9/1.0
Bulk density or shipping weight gms/ltr	form 710-750
Operating pH range	1-14
Solubility in common solvents	Insoluble
Operating Temperature°C (max)	60

SUGGESTED OPERATING CONDITIONS		
Bed Depth	Meter	Above 0.7
Running Flow Rate	Meter/Hour	8-40

**LIMITS OF USE:** MB9L non-regenerable mixed bed resin is industrial uses. For all other specific applications such as pharmaceutical, food processing or potable water applications, it is recommended that all potential users seek advice from Danhao Trading corporation or your local resin suppliers or distributors in order to determine the best resin choice and optimum operating conditions.

**PACKING:** 5Liter/bag with alu foil vacuum packing, every 5bags/carton

**CAUTION:** Strong oxidizing agents like nitric acid can cause explosive type reaction, when mixed with Ion Exchange resins. Knowledgeable sources should be consulted in the handling of this material.



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**NOTE:** Ion Exchange Resins are sold on a volume basis, but are packed and shipped by weight. The shipping weight for each resin is fixed & does not take into consideration the variations in density and moisture content allowed within the product specifications. Therefore although the weight of the material is constant, there may be slight variations in volume, reflecting batch to batch variation of density and moisture content.

**STORAGE CONDITIONS:** The resin supplied in drums or bags should be stored in cool shed (warehouse) away from direct sunlight & should be periodically damped down with clean water.



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### Danhao™ MB20 – Ultra-Pure Water Production Mixed-Bed Resin

#### Industry Grade Non-Regenerable Mixed Bed Resin

Danhao™ MB20 is a premixed, mixed bed of uniform particle size cation and standard anion resins designed for small industrial water demineralization applications such as cartridges and lab water. It may be used as a working mixed bed or as a polisher where <15 Megohm · cm final water quality is required. And the application could be mixed bed units for polishing after primary demineralization systems, small industrial plants (e.g. refilling of starter batteries or coolant circuits), process, manufacturing or electronic industries, rad waste water process system, etc. The resin has been developed for the production of high purity water. It can be used for all applications requiring totally demineralised water, free of silica and carbon dioxide.

PROPERTIES	
Ratio of Cation/Anion	40%:60%
Ionic Form	H + / OH-
Moisture content %	50-60%
Total Exchange Capacity (Min) eq/ltr	1.9/1.1
Bulk density or shipping weight gms/ltr	form 700-740
Operating pH range	1-14
Solubility in common solvents	Insoluble
Operating Temperature °C (max)	60

SUGGESTED OPERATING CONDITIONS		
Bed Depth	Meter	Above 0.7
Running Flow Rate	Meter/Hour	10-60

**LIMITS OF USE:** MB20 non-regenerable mixed bed resin is industrial uses. For all other specific applications such as pharmaceutical, food processing or potable water applications, it is recommended that all potential users seek advice from Danhao Trading corporation or your local resin suppliers or distributors in order to determine the best resin choice and optimum operating conditions.

**PACKING:** 5Liter/bag with alu foil vacuum packing, every 5bags/carton

**CAUTION:** Strong oxidizing agents like nitric acid can cause explosive type reaction, when mixed with Ion Exchange resins. Knowledgeable sources should be consulted in the handling of this material.



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**STORAGE CONDITIONS:** The resin supplied in drums or bags should be stored in cool shed (warehouse) away from direct sunlight & should be periodically damped down with clean water.



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### Danhao™ MB6150 – Ultra-Pure Water Production Mixed-Bed Resin

#### Industry Grade Non-Regenerable Polishing Mixed Bed Resin Installed After RO System

Danhao™ MB6150 is a fully regenerated mixed bed of cation and anion exchange resins intended for use in high purity water systems after reverse osmosis. This mixed bed product is particularly suitable for use in the polishing of high purity water for specialty electronics applications such as the manufacturing of disk drives, display devices, CD-ROMs, discrete semiconductor devices, lower density IC chips, or in the back-end chip dicing and mounting operations.

It is a ready-to-use mixed bed resins, suitable for the refillable cartridges or big pressure vessel, and after exhaustion it can not be regenerated. Danhao™ MB6150 could deliver 18 Megohm · cm quality water with TOC levels below 20 ppb.

PROPERTIES	
Ratio of Cation/Anion	34%:66%
Ionic Form	H + / OH-
Moisture content %	50-60%
Total Exchange Capacity (Min) eq/ltr	2.0/1.2
Bulk density or shipping weight gms/ltr	form 680-720
Operating pH range	1-14
Solubility in common solvents	Insoluble
Operating Temperature °C (max)	60

SUGGESTED OPERATING CONDITIONS		
Bed Depth	Meter	Above 0.8
Running Flow Rate	Meter/Hour	10-60

**LIMITS OF USE:** MB6150 non-regenerable mixed bed resin is industrial uses. For all other specific applications such as pharmaceutical, food processing or potable water applications, it is recommended that all potential users seek advice from Danhao Trading corporation or your local resin suppliers or distributors in order to determine the best resin choice and optimum operating conditions.

**PACKING:** 5Liter/bag with alu foil vacuum packing, every 5bags/carton

**CAUTION:** Strong oxidizing agents like nitric acid can cause explosive type reaction, when mixed with Ion Exchange resins. Knowledgeable sources should be consulted in the handling of this material.



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**STORAGE CONDITIONS:** The resin supplied in drums or bags should be stored in cool shed (warehouse) away from direct sunlight & should be periodically damped down with clean water.





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### Macroporous Iminodiacetic Chelating Resin (D751 Industry Grade)

D751 is a macroporous polystyrene based chelating resin, with iminodiacetic groups designed for the removal of cations of heavy metals from industrial effluents. These cations may be separated from high concentrations of univalent cations (typically sodium) and also from common divalent cations (such as calcium). Removal can be achieved both from weakly acidic and weakly basic solutions depending on the metals to be removed.

D751 finds use in processes for extraction and recovery of metals from ores, galvanic plating solutions, pickling baths, and effluents even in the presence of alkaline earth metals (calcium and magnesium). Further important uses include the refining of the salt solutions of transition and precious metals and for the cleaning and purification of various organic or inorganic chemical products by removal of heavy metals contamination (usually from aqueous solution).

PROPERTIES	
Matrix	Macroporous Cross linked polystyrene
Functional Group	Iminodiacetic
Ionic Form	Na+ Sodium
Physical Form	Opaque Beige Beads
Particle size (mm)	0.315-1.25
Moisture content %	55-65
Total Exchange Capacity (Min)	30g of Cu <sup>2+</sup> /L resin
Bulk density or shipping weight gms/ltr	710-780
Operating pH range	2-6 for H <sup>+</sup> /6-11 for Na <sup>+</sup>
Solubility in common solvents	Insoluble
Operating Temperature °C (max)	70
Volume change% (max):H <sup>+</sup> to Na <sup>+</sup>	20

SUGGESTED OPERATING CONDITIONS		
Bed Depth	Meter	1.0-3.0
Regenerant Concentration	%	Mineral Acids
Regenerant Flow Rate	BV/Hour	3-4
Regenerant Contact Time	Minutes	30-60
Regeneration Level 100%	Kgs/m <sup>3</sup> of resins	140-200 HCL
Rinse Flow Rate	BV/Hour	2-4
Rinse Time	Minutes	20-40
Running Flow Rate	BV/Hour	8-16

**APPLICATIONS:** D751 is particularly suitable for the removal of heavy metals (as weakly



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acidic chelated complexes) which are held according to the following order of selectivity.  
Cu>>Ni>Zn<sup>3</sup> Co<sup>3</sup> Cd>Fe(II)>Mn>Ca

The macroporous resin structure ensures excellent diffusion of ions thus affording efficient exhaustion and regeneration.

Recovery of heavy metals from effluents from the plating industry is achieved by concentration and is particularly useful where full demineralization and recycling of the rinse water is not practised. The simplest case is where only one heavy metal is present, when volumes of rinse water are low, waste water fees may be low, and raw water has a low salt content.

D751 can be used to reduce residual toxic heavy metals to below the maximum admissible concentration levels which are often far below those obtainable after precipitation reactions. It may also be used to remove similar residuals from demineralized rinse water circuits.

D751 is also used to separate and concentrate heavy metals in hydrometallurgical processes (ore dressing and scrap recovery). It is particularly suitable where metals are present in low concentrations. Separation techniques may be carried out according to the order of selectivity given above. However changes in the sequence occur with change in pH and in the presence of certain anions (including higher concentrations of chloride and sulphate). The sequence given above is applicable for neutral and weakly acidic solutions.

### PACKING:

Super Sack	1000Liters
PP/PE Bag	25Liters
PP/PE Bag	25Kgs

**CAUTION:** Strong oxidizing agents like nitric acid can cause explosive type reaction, when mixed with Ion Exchange resins. Knowledgeable sources should be consulted in the handling of this material.

**NOTE:** Ion Exchange Resins are sold on a volume basis, but are packed and shipped by weight. The shipping weight for each resin is fixed & does not take into consideration the variations in density and moisture content allowed within the product specifications. Therefore although the weight of the material is constant, there may be slight variations in volume, reflecting batch to batch variation of density and moisture content.

**STORAGE CONDITIONS:** The resin supplied in drums or bags should be stored in cool shed (warehouse) away from direct sunlight & should be periodically damped down with clean water.



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### DH301 Gold-Selective Macroporous Weak(Medium) Base Anion Exchange Resin A specialty resin for Aurocyanide Recovery

DH301 is a macroporous-type poly(vinylbenzyl) anion exchange resin tailored for extraction of gold cyanide complexes (aurocyanide) from the pregnant solutions or pulps originated from the alkaline cyanidation of gold ores .

This resin shows high resistance to osmotic and thermal shock and gold selectivity, particularly it has remarkably high selectivity for gold over copper. The resin is also resistant to fouling by the most natural and synthetic organic matter (hydrocarbons). Details of the chemical and physical characteristics are given below. The resin is supplied in bead form with a specially graded particle size required by RIP gold recovery circuits. It can also be used in all known ion exchange contactor designs.

The gold loaded on the resin can be easily desorbed by a few bed volumes, preferably at 40 - 60 °C (104 - 140 °F), of alkaline cyanide solution. No further regeneration is required before the next sorption cycle.

<b>PROPERTIES</b>	
Matrix	Macroporous styrene cross-linked with DVB
Functional Group	Mixed amines
Ionic Form	FB Form
Physical Form	Hard moist beads
Particle size (mm)	0.6-1.5(95%)
Moisture content %	55-65(Cl- from)
Total Exchange Capacity (Min) eq/kg	4.5
Bulk density or shipping weight gms/ltr	650-750
Operating pH range	0-10.5
Solubility in common solvents	Insoluble
Operating Temperature °C (max)	80

#### PACKING:

Super Sack	1000Liters
PP/PE Bag	25Liters
PP/PE Bag	25Kgs

**CAUTION:** Strong oxidizing agents like nitric acid can cause explosive type reaction, when mixed with Ion Exchange resins. Knowledgeable sources should be consulted in the handling of this material.



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**NOTE:** Ion Exchange Resins are sold on a volume basis, but are packed and shipped by weight. The shipping weight for each resin is fixed & does not take into consideration the variations in density and moisture content allowed within the product specifications. Therefore although the weight of the material is constant, there may be slight variations in volume, reflecting batch to batch variation of density and moisture content.

**STORAGE CONDITIONS:** The resin supplied in drums or bags should be stored in cool shed (warehouse) away from direct sunlight & should be periodically damped down with clean water.



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### Inert Resin (S-TR Industry Grade)

S-TR is an inert polymer in the form of cylinders. It has been especially designed for use in the Fluidlite process (packed or partially packed and fluidised beds operated in the up-flow counter-flow mode). The polymer has optimum specific gravity, which together with its resistance to attrition and its ability to withstand mechanical stress ensures both excellent stability of the ion exchange bed and free flow through the strainers of the collector system during service, by eliminating the possibility of blockage of strainers with traces of resin fines.

Another feature of STR inert resin is its ability to improve the distribution of regenerants during the down-flow regeneration stage.

STR resin can also be used in down flow processes with up-flow regeneration, where it protects the strainers during the regeneration and improves the flow distribution during service.

PROPERTIES	
Diameter	1.1-1.5mm
Length	0.8-1.6mm
Physical Form	White Hard beads
Particle size (mm)	1.5-2.5
Moisture content %(Max)	6
Bulk density or shipping weight gms/ltr	670-720
Operating pH range	0-14
Solubility in common solvents	Insoluble
Operating Temperature°C (max)	120

#### PACKING:

Super Sack	1000Liters
PP/PE Bag	25Liters
PP/PE Bag	25Kgs

**CAUTION:** Strong oxidizing agents like nitric acid can cause explosive type reaction, when mixed with Ion Exchange resins. Knowledgeable sources should be consulted in the handling of this material.

**NOTE:** Ion Exchange Resins are sold on a volume basis, but are packed and shipped by weight. The shipping weight for each resin is fixed & does not take into consideration the variations in density and moisture content allowed within the product specifications. Therefore although the weight of the material is constant, there may be slight variations in volume, reflecting batch to batch variation of density and moisture content.

**STORAGE CONDITIONS:** The resin supplied in drums or bags should be stored in cool



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