



August 22, 2005

Randy Leathers
Culligan Of The Piedmont

Phone: 864-295-9500
E-mail: randy@waterprofessionals.com

RE: Resin Analyses

Dear Randy:

This letter is in reference to the nine resin samples we received from you. Comparisons are made with ResinTech® equivalents.

Cation Exchange Resin

Cation #1-5 chemical and physical properties are degraded, cation #5 being the worst.

Anion Exchange Resin

Anion #1-4 have good capacities but the physical properties show signs of degradation.

Recommendations

Cation #1-4 still have some useful life, a thorough backwashing is recommended. Cation #5 is most damaged and should be replaced immediately.

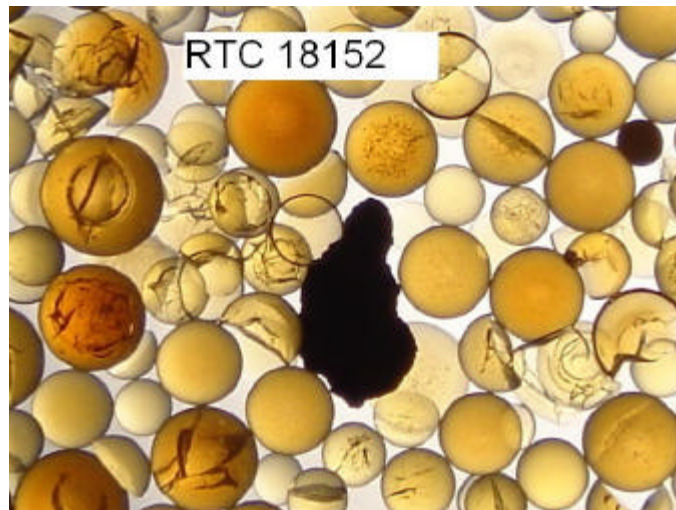
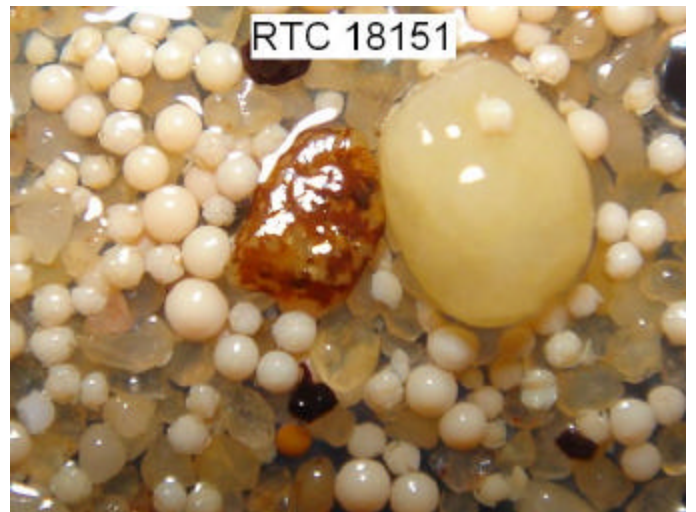
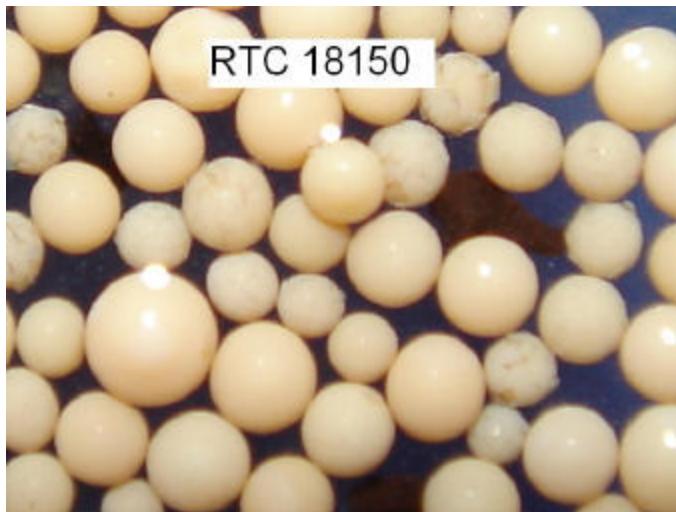
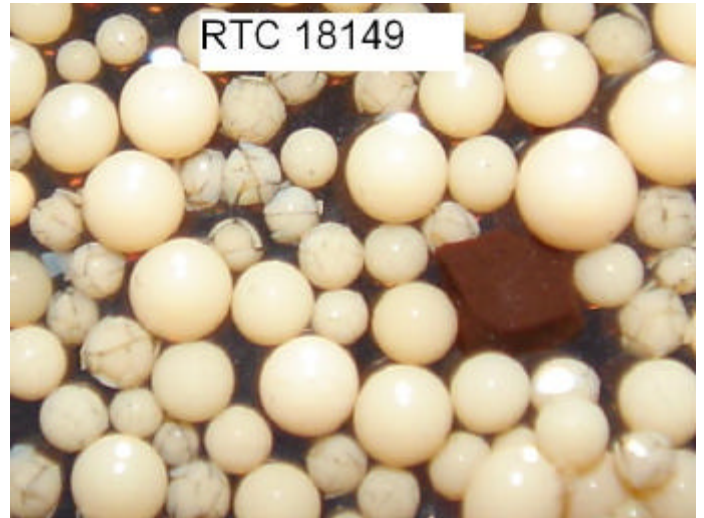
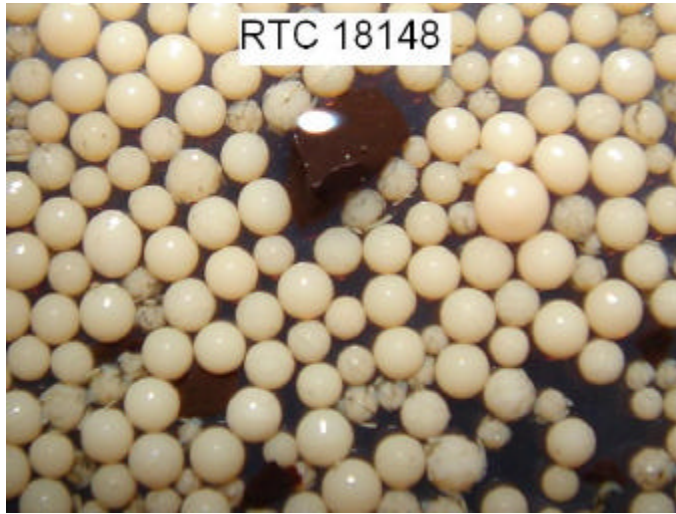
Anion #1-4 have some useful life but a thorough backwashing is recommended.

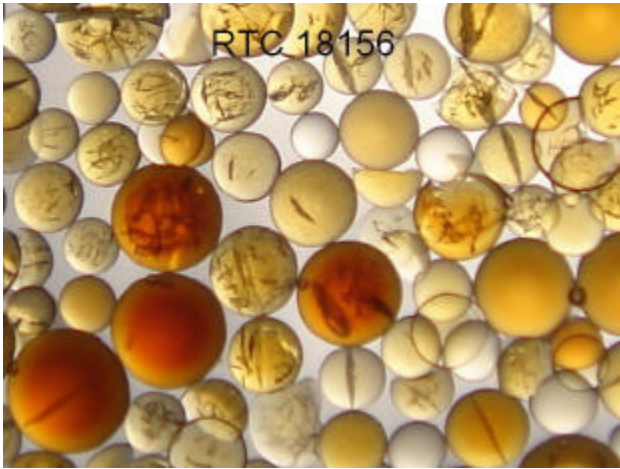
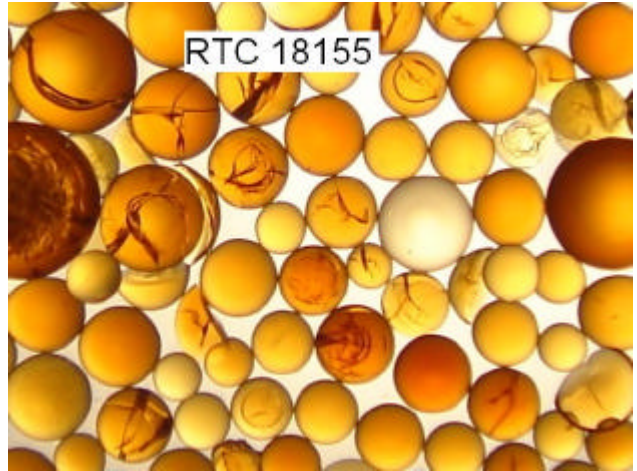
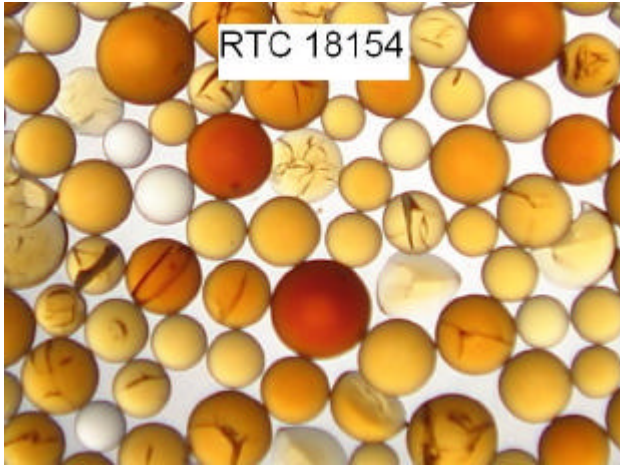
We are available for any further assistance with your ion exchange applications including troubleshooting, review of regeneration procedures or new resin recommendations.

If you have any questions or need additional information, please call your local ResinTech® technical representative, Phil Adams at 678-461-8830.

Sincerely yours,

Robert Rittershausen
Director of Analytical Services







1 ResinTech Plaza, 160 Cooper Rd.
 West Berlin, NJ 08091-9243
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 ixresin@resintech.com www.resintech.com

RESIN ANALYSIS

Customer: Culligan (Piedmont)
Date: 08/15/05

Sample Designation		
Sample Identifier	Anion #1	Anion #2
ResinTech Equivalent	WBMP	WBMP
Resintech Sample Number	RTC-18148	RTC-18149

PARAMETER	<i>(RESINTECH SPEC VALUE IS INCLUDED IN ITALICS BELOW TO THE RIGHT)</i>			
Total Capacity - Na or Cl Form in meq/mL	1.45	<i>1.30</i>	1.49	<i>1.30</i>
Salt Splitting Capacity in meq/mL	0.48		0.11	
Treated Total Capacity in meq/mL		<i>1.30</i>		<i>1.30</i>
Treated Salt Splitting Capacity in meq/mL				

Chemical Moisture (%), Na or Cl Form	40.6%	<i>51 - 58</i>	40.4%	<i>51 - 58</i>
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Effective Particle Size (mm) <i>(This is a visual estimation)</i>	0.50		0.47	
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Bead integrity (percent)				
Whole perfect	87	<i>Min. 90%</i>	81	<i>Min. 90%</i>
Whole cracked	5	<i>Max. 10%</i>	6	<i>Max. 10%</i>
Broken	8	<i>Max. 5%</i>	13	<i>Max. 5%</i>

COMMENTS	Approximately 3% carbon beads are present. There was a slight orange throw when treated with caustic/brine. Resin is slightly dirty.	Approximately 3% carbon beads are present. There was a slight orange throw when treated with caustic/brine. Resin is slightly dirty.	
	NOTE: All capacity and moisture percentage values correspond to the sodium form for cation resins and to the chloride form for anion resins unless otherwise noted.		



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RESIN ANALYSIS

Customer: Culligan (Piedmont)
Date: 08/15/05

Sample Designation		
Sample Identifier	Anion #3	Anion #4
ResinTech Equivalent	WBMP	WBMP
Resintech Sample Number	RTC-18150	RTC-18151

PARAMETER	<i>(RESINTECH SPEC VALUE IS INCLUDED IN ITALICS BELOW TO THE RIGHT)</i>			
Total Capacity - Na or Cl Form in meq/mL	1.45	<i>1.30</i>	1.44	<i>1.30</i>
Salt Splitting Capacity in meq/mL	0.19		0.16	
Treated Total Capacity in meq/mL		<i>1.30</i>		<i>1.30</i>
Treated Salt Splitting Capacity in meq/mL				

Chemical Moisture (%), Na or Cl Form	40.6%	<i>51 - 58</i>	41.2%	<i>51 - 58</i>
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Effective Particle Size (mm) <i>(This is a visual estimation)</i>	0.61		0.39	
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Bead integrity (percent)				
Whole perfect	94	<i>Min. 90%</i>	10	<i>Min. 90%</i>
Whole cracked	3	<i>Max. 10%</i>	86	<i>Max. 10%</i>
Broken	3	<i>Max. 5%</i>	2	<i>Max. 5%</i>

COMMENTS		
	<p>There was a slight orange throw when treated with caustic/brine.</p> <p>Approximately 4% carbon beads are present.</p>	<p>There was a slight orange throw when treated with caustic/brine.</p> <p>Approximately 2% carbon beads are present.</p> <p>Tiny beads.</p>
NOTE: All capacity and moisture percentage values correspond to the sodium form for cation resins and to the chloride form for anion resins unless otherwise noted.		



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RESIN ANALYSIS

Customer: Culligan (Piedmont)
Date: 08/15/05

Sample Designation		
Sample Identifier	Cation #1	Cation #2
ResinTech Equivalent	CG8	CG8
Resintech Sample Number	RTC-18152	RTC-18153

PARAMETER	<i>(RESINTECH SPEC VALUE IS INCLUDED IN ITALICS BELOW TO THE RIGHT)</i>			
Total Capacity - Na or Cl Form in meq/mL	1.85	<i>1.90</i>	1.91	<i>1.90</i>
Salt Splitting Capacity in meq/mL		<i>1.90</i>		<i>1.90</i>
Treated Total Capacity in meq/mL		<i>1.90</i>		<i>1.90</i>
Treated Salt Splitting Capacity in meq/mL		<i>1.90</i>		<i>1.90</i>

Chemical Moisture (%), Na or Cl Form	51.2%	<i>40 - 47</i>	49.5%	<i>40 - 47</i>
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Effective Particle Size (mm) <i>(This is a visual estimation)</i>	0.53		0.61	
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Bead integrity (percent)				
Whole perfect	73	<i>Min. 85%</i>	79	<i>Min. 85%</i>
Whole cracked	13	<i>Max. 15%</i>	14	<i>Max. 15%</i>
Broken	14	<i>Max. 7%</i>	7	<i>Max. 7%</i>

COMMENTS		
<i>NOTE: All capacity and moisture percentage values correspond to the sodium form for cation resins and to the chloride form for anion resins unless otherwise noted.</i>		



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RESIN ANALYSIS

Customer: Culligan (Piedmont)
Date: 08/15/05

Sample Designation		
Sample Identifier	Cation #3	Cation #4
ResinTech Equivalent	CG8	CG8
Resintech Sample Number	RTC-18154	RTC-18155

PARAMETER	<i>(RESINTECH SPEC VALUE IS INCLUDED IN ITALICS BELOW TO THE RIGHT)</i>			
Total Capacity - Na or Cl Form in meq/mL	1.98	<i>1.90</i>	1.98	<i>1.90</i>
Salt Splitting Capacity in meq/mL		<i>1.90</i>		<i>1.90</i>
Treated Total Capacity in meq/mL		<i>1.90</i>		<i>1.90</i>
Treated Salt Splitting Capacity in meq/mL		<i>1.90</i>		<i>1.90</i>

Chemical Moisture (%), Na or Cl Form	47.0%	<i>40 - 47</i>	47.0%	<i>40 - 47</i>
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Effective Particle Size (mm) <i>(This is a visual estimation)</i>	0.53		0.53	
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Bead integrity (percent)				
Whole perfect	78	<i>Min. 85%</i>	84	<i>Min. 85%</i>
Whole cracked	14	<i>Max. 15%</i>	7	<i>Max. 15%</i>
Broken	8	<i>Max. 7%</i>	9	<i>Max. 7%</i>

COMMENTS		
<i>NOTE: All capacity and moisture percentage values correspond to the sodium form for cation resins and to the chloride form for anion resins unless otherwise noted.</i>		



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RESIN ANALYSIS

Customer: Culligan (Piedmont)
Date: 08/15/05

Sample Designation		
Sample Identifier	Cation #5	
ResinTech Equivalent	CG8	
Resintech Sample Number	RTC-18156	

PARAMETER	<i>(RESINTECH SPEC VALUE IS INCLUDED IN ITALICS BELOW TO THE RIGHT)</i>		
Total Capacity - Na or Cl Form in meq/mL	1.75	<i>1.90</i>	
Salt Splitting Capacity in meq/mL		<i>1.90</i>	
Treated Total Capacity in meq/mL		<i>1.90</i>	
Treated Salt Splitting Capacity in meq/mL		<i>1.90</i>	

Chemical Moisture (%), Na or Cl Form	54.0%	<i>40 - 47</i>	
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Effective Particle Size (mm) <i>(This is a visual estimation)</i>	0.53		
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Bead integrity (percent)			
Whole perfect	71	<i>Min. 85%</i>	
Whole cracked	18	<i>Max. 15%</i>	
Broken	11	<i>Max. 7%</i>	

COMMENTS		
<i>NOTE: All capacity and moisture percentage values correspond to the sodium form for cation resins and to the chloride form for anion resins unless otherwise noted.</i>		