

AAMI Standards

Contaminant	AAMI Suggested Maximum Levels
Aluminum	0.010 mg/L
Antimony	0.006 mg/L
Arsenic	0.005 mg/L
Barium	0.100 mg/L
Beryllium	0.0004 mg/L
Cadmium	0.0010 mg/L
Calcium	2.000 mg/L
Chromium	0.014 mg/L
Copper	0.100 mg/L
Cyanide	0.020 mg/L
Fluoride	0.200 mg/L
Iron	N/A
Lead	0.005 mg/L
Magnesium	4.000 mg/L
Mercury	0.0002 mg/L
Nitrate (as N)	2.000 mg/L
pH	N/A
Potassium	8.000 mg/L
Resistivity	N/A
Selenium	0.090 mg/L
Silver	0.005 mg/L
Sodium	70.000 mg/L
Sulfate	100.00 mg/L
Thallium	0.002 mg/L
Total Dissolved Solids	N/A
Zinc	0.100 mg/L

Conductivity and Resistivity (NaCl and CaCO₃ Solutions at 25° C)

*1 grain per gal = 17.1 ppm (CaCO₃) **theoretical maximum level

Grains/Gal* as CaCO ₃	ppm as CaCO ₃	ppm NaCl	Conductivity micromhos/cm	Resistivity megohm/cm
99.3	1700	2000	3860	0.00026
74.5	1275	1500	2930	0.00034
49.6	850	1000	1990	0.00050
24.8	425	500	1020	0.00099
9.93	170	200	415	0.0024
7.45	127.50	150	315	0.0032
4.96	85.0	100	210	0.0048
2.48	42.5	50	105	.0095
0.992	17.0	20	42.7	0.023
0.742	12.7	15	32.1	0.031
0.496	8.5	10	21.4	0.047
0.248	4.5	5.0	10.8	0.093
0.099	1.70	2.0	4.35	0.23
0.074	1.27	1.5	3.28	0.30
0.048	0.85	1.0	2.21	0.45
0.025	0.42	0.50	1.13	0.88
0.0099	0.17	0.20	0.49	2.05
0.0076	0.13	0.15	0.38	2.65
0.0050	0.085	0.10	0.27	3.70
0.0025	0.042	0.05	0.16	6.15
0.00099	0.017	0.02	0.098	10.2
0.00070	0.012	0.015	0.087	11.5
0.00047	0.008	0.010	0.076	13.1
0.00023	0.004	0.005	0.066	15.2
0.00021	0.002	0.002	0.059	16.9
0.00006	0.001	0.001	0.057	17.6
none	none	none	0.055	18.3**

Semiconductor

Test	Attainable	Acceptable
Resistivity @ 25° C	18.2	18.2
(% of time)	100	98
TOC (ppb)		
On-line *	<1	<2
THM (ppb)	<2	<5
Particles—cts/Liter		
SEM	-	-
0.05- 0.1µm	<300	350
0.1- 0.1µm	<100	250
0.2- 0.5µm	<50	100
0.5-1.0µm	<10	30
>0.1µm	<10	20
On-Line		
0.05- 0.1µm	<200	300
0.1- 0.2µm	<100	100
0.2- 0.5µm	<10	10
0.5- 1.0µm	<5	5
> 0.1µm	<1	1
Oxygen (ppb)		
O ₂ Free System	<10/>1	<10/>1
Bacteria cfu/sample volume		
1 Liter	<1	<1
Silica (ppb)		
Total	<1.0	2.0
Dissolved	<0.1	<0.1

AAMI Bacterial Contamination Limits

Bacteria	AAMI Recommended Limit
Purified Water	<200 cfu/ml
Dialysate	<200 cfu/ml
Endotoxin	<2 eu/ml by LAL



ASTM

Water Specifications				
Water Type	I	II	III	
Electrical Resisitvity, min (Megohm-cm compensated at 25°C)	18.0	1.00	4.0	
Total Organic Carbon, max (ppb)	100	50	200	
Sodium, max (ppb)	1	5	10	
Chlorides, max (ppb)	1	5	10	
Total Silica, max (ppb)	3	3	500	
Water Type	A	B	C	
Maximum Bacteria Count (cfu/ml)	10/1000 ml	10/100 ml	100/10 ml	
Endotoxin (eu/ml)	<0.03	<0.25	N.A.	

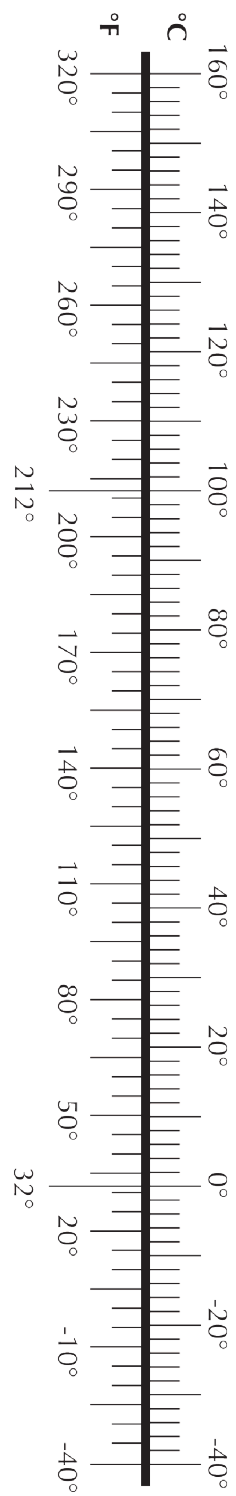
CLRW (Clinical Laboratory Reagent Water)

Water Specifications		
Water Type	CLRW	SRW
Maximum Bacterial Content, Colony forming units per ml. (cfu/ml)	10	User specified
pH	N.S.	
Minimum Resistivity (megohm-cm at 25°)	10	User specified
Particulate Matter	0.22	User specified
Organic Impurities (TOC)	500 ppb.	User specified

USP 31 NF 26 WATER

** Guidelines Only

(TOC) Total Organic Carbon N.S.	500 ppb
Conductivity	1.3 µS/cm @ 25°C 1.1 µS/cm @ 20°C
Bacteria (cfu/ml)	
Purified	100** 100**
WFI	10/100 0.1
Endotoxin (eu/ml) by LAL	
Purified	— Unchanged
WFI	.25 Unchanged



Fahrenheit / Centigrade Temperature Conversion Chart

Total Water Treatment Resource Guide

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Total Water

At Total Water Treatment Systems Inc
We Provide Comprehensive Solutions to
Our Customers' Water Needs.

Total Water Treatment Systems Inc.

was founded over sixty years ago to offer commercial and industrial clients water purification systems that would fit their needs. Our company was built with service as its foundation. Today, we still maintain that every product is only as good as the people behind it. As an employee owned company, we support our service personnel by training them in the most up-to-date technologies in the industry. This enables them to efficiently meet the changing needs of our customers.

We can select from a wide range of manufacturers and suppliers. As your complete water resource, you can concentrate on your business.

Total Water Treatment Systems offers system design and engineering, distribution design, system sanitizations and complete maintenance programs. Additional services include:

- Water-by-the-gallon or water-by-the-month agreements
- Portable exchange deionizers and carbon filters
- Reverse osmosis repair and maintenance
- Membrane replacement
- System upgrades and renovations
- Installation, start-up and operator training
- 510K medical device supplier
- Local services
- 24-hour emergency service
- Temporary and rental equipment

Relative Sizes of Particles Key

