

ELECTRONIC GRADE WATER

American Society for Testing and Materials (ASTM) D5127-90

Standard Guide for Electronic Grade Water				
	Type E-I	Type E-II	Type E-III	Type E IV
Resistivity, megohm-cm minimum,	18 (95% of time) no less than 17	17.5 (90% of time) no less than 16	12	0.5
SiO ₂ (total maximum, µg/L)	5	10	50	1000
Particle count per mL	1	3	10	100
Particle size limit, micron	0.1	0.5	1.0	10
Viable bacteria, maximum	1/1000 mL	10/1000 mL	10/mL	100/mL
Total organic carbon maximum, µg/L	25	50	300	1000
Endotoxins ¹ , EU/mL	0.03	0.25	N/A	N/A
Copper maximum, µg/L	1	1	2	500
Chloride maximum, µg/L	1	1	10	1000
Nickel, mg/L	0.1	1	2	500
Nitrate maximum, mg/L	1	1	5	500
Phosphate maximum, mg/L	1	1	5	500
Potassium maximum, µg/L	2	2	5	500
Sodium maximum, µg/L	0.5	1	5	1000
Sulfate maximum, mg/L	1	1	5	500
Zinc maximum, µg/L	0.5	1	5	500

Note 1 - Substance or by-products usually produced by gram-negative micro-organisms which give a positive test for pyrogens.

Type E-I – Electronic Grade Water. This water will be classified as microelectronic water to be used in the production of devices having line widths below 1.0 micrometer. It is intended that this be the water of ultimate practical purity produced in large volumes and for the most critical uses.

Type E-II – Electronic Grade Water. This water will be classified as microelectronic water to be used in the production of devices having line widths below 5.0 micrometer. This water should be adequate for producing most high-volume products which have dimensions above 1.0 micrometer and below 5.0 micrometers.

Type E-III – Electronic Grade Water. This grade of water may be classified as macroelectronic water to be used in the production of devices having dimensions larger than 5.0 micrometers. This grade may be used to produce larger components and some small components not affected by trace amounts of impurities.

Type E-IV – Electronic Grade Water. Electronics-Grade Water may be classified as electroplating water for non critical use and other general applications where the water is in constant contact with the atmosphere because of tank storage.