

Detrex ULTRAMAX[®] 100 - 23° Baume Hydrochloric Acid

Semiconductor Grade 1 – SEMI C1.7-95

CAS No. 7647-01-0

<u>Parameter</u>	<u>SEMI Specification*</u>	<u>Detrex Specification</u>	<u>Detrex Typical</u>
Assay	37 – 38.0%	37 - 38%	37.5%
Color (APHA)	10 max	< 5 APHA	< 5 APHA
Free Halogen (as Cl ₂)	To pass test	500 ppb max	B.D.L.
Phosphate (PO ₄)	50 ppb max	20 ppb max	B.D.L.
Sulfate (SO ₄)	500 ppb max	100 ppb max	B.D.L.
Sulfite (SO ₃)	800 ppb max	800 ppb max	B.D.L.
Aluminum (Al)	300 ppb max	10 ppb max	< 5 ppb
Arsenic and Antimony (As)	5 ppb	5 ppb max	< 5 ppb
Boron (B)	100 ppb max	100 ppb max	< 5 ppb
Calcium (Ca)	300 ppb max	100 ppb max	50 ppb
Chromium (Cr)	200 ppb max	100 ppb max	< 5 ppb
Copper (Cu)	100 ppb max	100 ppb max	< 5 ppb
Iron (Fe)	200 ppb max	100 ppb max	50 ppb
Lead (Pb)	100 ppb max	100 ppb max	< 5 ppb
Magnesium (Mg)	300 ppb max	100 ppb max	< 5 ppb
Manganese (Mn)	300 ppb max	100 ppb max	< 5 ppb
Nickel (Ni)	100 ppb max	100 ppb max	< 5 ppb
Potassium (K)	300 ppb max	100 ppb max	< 5 ppb
Sodium (Na)	300 ppb max	100 ppb max	< 5 ppb
Tin (Sn)	300 ppb max	100 ppb max	< 5 ppb
Titanium (Ti)	300 ppb max	100 ppb max	< 5 ppb
<u>Zinc (Zn)</u>	<u>300 ppb max</u>	100 ppb max	< 5 ppb

*SEMI C27-0708 Standards 1978, 2008

Extractable Organic Substances	500 ppb max	B.D.L
Barium (Ba)	100 ppb max	< 5 ppb
Beryllium (Be)	100 ppb max	< 5 ppb
Bismuth (Bi)	100 ppb max	< 5 ppb
Cadmium (Cd)	100 ppb max	< 5 ppb
Cobalt (Co)	100 ppb max	< 5 ppb
Gallium (Ga)	100 ppb max	< 5 ppb
Germanium (Ge)	100 ppb max	< 5 ppb
Gold (Au)	100 ppb max	< 5 ppb
Lithium (Li)	100 ppb max	< 5 ppb
Niobium (Nb)	100 ppb max	< 5 ppb
Silver (Ag)	100 ppb max	< 5 ppb
Strontium (Sr)	100 ppb max	< 5 ppb
Tantalum (Ta)	100 ppb max	< 5 ppb
Thallium (Tl)	100 ppb max	< 5 ppb
Vanadium (V)	100 ppb max	< 5 ppb
<u>Zirconium (Zr)</u>	<u>100 ppb max</u>	< 5 ppb

< 1 particle per mL @ 1 micron

< 1 particle per mL @ .5 micron

< 5 particles per mL @ .3 micron

< 70 particles per mL @ .2 micron