

## Detrex ULTRAMAX<sup>®</sup> 10 - 23° Baume Hydrochloric Acid

Semiconductor Grade 2 – SEMI C7.2-94

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 <sub>2</sub> )	To pass test	500 ppb max	B.D.L.
Phosphate (PO <sub>4</sub> )	50 ppb max	20 ppb max	B.D.L.
Sulfate (SO <sub>4</sub> )	500 ppb max	100 ppb max	B.D.L.
Sulfite (SO <sub>3</sub> )	800 ppb max	800 ppb max	B.D.L.
Aluminum (Al)	10 ppb max	10 ppb max	< 1 ppb
Antimony (Sb)	5 ppb max	1 ppb max	< 1 ppb
Arsenic (As)	10 ppb max	10 ppb max	< 1 ppb
Barium (Ba)	10 ppb max	10 ppb max	< 1 ppb
Boron (B)	10 ppb max	10 ppb max	< 1 ppb
Cadmium (Cd)	10 ppb max	10 ppb max	< 1 ppb
Calcium (Ca)	10 ppb max	10 ppb max	5 ppb
Chromium (Cr)	10 ppb max	10 ppb max	< 1 ppb
Copper (Cu)	10 ppb max	10 ppb max	< 1 ppb
Iron (Fe)	10 ppb max	10 ppb max	4 ppb
Lead (Pb)	10 ppb max	10 ppb max	< 1 ppb
Lithium (Li)	10 ppb max	10 ppb max	< 1 ppb
Magnesium (Mg)	10 ppb max	10 ppb max	< 1 ppb
Manganese (Mn)	10 ppb max	10 ppb max	< 1 ppb
Nickel (Ni)	10 ppb max	10 ppb max	< 1 ppb
Potassium (K)	10 ppb max	10 ppb max	< 1 ppb
Sodium (Na)	10 ppb max	10 ppb max	< 1 ppb
Tin (Sn)	10 ppb max	10 ppb max	< 1 ppb
Titanium (Ti)	10 ppb max	10 ppb max	< 1 ppb
Vanadium (V)	10 ppb max	10 ppb max	< 1 ppb
Zinc (Zn)	10 ppb max	10 ppb max	< 1 ppb

\*SEMI C27-0708 Standards 1978, 2008

Extractable Organic Substances	500 ppb max	B.D.L
Beryllium (Be)	10 ppb max	< 1 ppb
Bismuth (Bi)	10 ppb max	< 1 ppb
Cobalt (Co)	10 ppb max	< 1 ppb
Gallium (Ga)	10 ppb max	< 1 ppb
Germanium (Ge)	10 ppb max	< 1 ppb
Gold (Au)	10 ppb max	< 1 ppb
Niobium (Nb)	10 ppb max	< 1 ppb
Silver (Ag)	10 ppb max	< 1 ppb
Strontium (Sr)	10 ppb max	< 1 ppb
Tantalum (Ta)	10 ppb max	< 1 ppb
Thallium (Tl)	10 ppb max	< 1 ppb
Zirconium (Zr)	10 ppb max	< 1 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