

Certificate of Analysis

Test	Specification	Result
Assay (HCl)(w/w)	32 - 35 %	34 %
Trace Impurities - Aluminum (Al)	≤ 20 ppt	< 2 ppt
Trace Impurities - Antimony (Sb)	≤ 20 ppt	< 1 ppt
Trace Impurities - Arsenic (As)	≤ 50 ppt	< 1 ppt
Trace Impurities - Barium (Ba)	≤ 10 ppt	< 1 ppt
Trace Impurities - Beryllium (Be)	≤ 10 ppt	< 1 ppt
Trace Impurities - Bismuth (Bi)	≤ 10 ppt	< 1 ppt
Trace Impurities - Boron (B)	≤ 100 ppt	< 50 ppt
Trace Impurities - Cadmium (Cd)	≤ 10 ppt	< 1 ppt
Trace Impurities - Calcium (Ca)	≤ 10 ppt	< 10 ppt
Trace Impurities - Cerium (Ce)	≤ 10 ppt	< 1 ppt
Trace Impurities - Cesium (Cs)	≤ 10 ppt	< 1 ppt
Trace Impurities - Chromium (Cr)	≤ 10 ppt	< 1 ppt
Trace Impurities - Cobalt (Co)	≤ 10 ppt	< 1 ppt
Trace Impurities - Copper (Cu)	≤ 10 ppt	< 1 ppt
Trace Impurities - Dysprosium (Dy)	≤ 1 ppt	< 1 ppt
Trace Impurities - Erbium (Er)	≤ 1 ppt	< 1 ppt
Trace Impurities - Europium (Eu)	≤ 1 ppt	< 1 ppt
Trace Impurities - Gadolinium (Gd)	≤ 1 ppt	< 1 ppt
Trace Impurities - Gallium (Ga)	≤ 10 ppt	< 1 ppt
Trace Impurities - Gold (Au)	≤ 50 ppt	< 1 ppt
Trace Impurities - Hafnium (Hf)	≤ 10 ppt	< 1 ppt
Trace Impurities - Holmium (Ho)	≤ 1 ppt	< 1 ppt
Trace Impurities - Indium (In)	≤ 1 ppt	< 1 ppt
Trace Impurities - Iron (Fe)	≤ 10 ppt	< 5 ppt
Trace Impurities - Lanthanum (La)	≤ 1 ppt	< 1 ppt
Trace Impurities - Lead (Pb)	≤ 10 ppt	< 1 ppt
Trace Impurities - Lithium (Li)	≤ 10 ppt	< 1 ppt

>>> Continued on page 2 >>>

Test	Specification	Result
Trace Impurities – Lutetium (Lu)	≤ 10 ppt	< 1 ppt
Trace Impurities – Magnesium (Mg)	≤ 10 ppt	< 1 ppt
Trace Impurities – Manganese (Mn)	≤ 10 ppt	< 1 ppt
Trace Impurities – Mercury (Hg)	≤ 50 ppt	< 20 ppt
Trace Impurities – Molybdenum (Mo)	≤ 10 ppt	< 1 ppt
Trace Impurities – Neodymium (Nd)	≤ 1 ppt	< 1 ppt
Trace Impurities – Nickel (Ni)	≤ 20 ppt	< 5 ppt
Trace Impurities – Niobium (Nb)	≤ 1 ppt	< 1 ppt
Trace Impurities – Palladium (Pd), For Information Only		< 0.1 µmol/l
Trace Impurities – Platinum (Pt), For Information Only		< 1 ppt
Trace Impurities – Potassium (K)	≤ 10 ppt	< 1 ppt
Trace Impurities – Praseodymium (Pr)	≤ 1 ppt	< 1 ppt
Trace Impurities – Rhenium (Re)	≤ 10 ppt	< 1 ppt
Trace Impurities – Rhodium (Rh)	≤ 10 ppt	< 1 ppt
Trace Impurities – Rubidium (Rb)	≤ 10 ppt	< 1 ppt
Trace Impurities – Ruthenium (Ru)	≤ 10 ppt	< 1 ppt
Trace Impurities – Samarium (Sm)	≤ 1 ppt	< 1 ppt
Trace Impurities – Scandium (Sc)	≤ 10 ppt	< 1 ppt
Trace Impurities – Selenium (Se), For Information Only		< 200 ppt
Trace Impurities – Silver (Ag)	≤ 10 ppt	< 1 ppt
Trace Impurities – Sodium (Na)	≤ 10 ppt	< 2 ppt
Trace Impurities – Strontium (Sr)	≤ 10 ppt	< 1 ppt
Trace Impurities – Tantalum (Ta), For Information Only		< 1 ppt
Trace Impurities – Tellurium (Te)	≤ 1 ppt	< 1 ppt
Trace Impurities – Terbium (Tb)	≤ 1 ppt	< 1 ppt
Trace Impurities – Thallium (Tl)	≤ 10 ppt	< 1 ppt
Trace Impurities – Thorium (Th)	≤ 1 ppt	< 1 ppt
Trace Impurities – Thulium (Tm)	≤ 1 ppt	< 1 ppt
Trace Impurities – Tin (Sn)	≤ 20 ppt	< 1 ppt
Trace Impurities – Titanium (Ti)	≤ 10 ppt	< 1 ppt
Trace Impurities – Tungsten (W)	≤ 10 ppt	< 1 ppt
Trace Impurities – Uranium (U)	≤ 1 ppt	< 1 ppt

>>> Continued on page 3 >>>

Hydrochloric Acid
ULTREX® II Ultrapure Reagent



Material No.: 6900-05
Batch No.: 4223032

Test	Specification	Result
Trace Impurities – Vanadium (V)	≤ 10 ppt	< 1 ppt
Trace Impurities – Ytterbium (Yb)	≤ 1 ppt	< 1 ppt
Trace Impurities – Yttrium (Y)	≤ 1 ppt	< 1 ppt
Trace Impurities – Zinc (Zn)	≤ 10 ppt	< 1 ppt
Trace Impurities – Zirconium (Zr)	≤ 10 ppt	< 1 ppt

For Laboratory, Research, or Manufacturing Use
Certificate Provided Reports Actual Lot Analysis
Storage Condition: Store below 25 °C.

Country of Origin: Canada
Packaging Site: Paris Mfg Ctr & DC

Michelle Bales
Sr. Manager, Quality Assurance

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC

100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700