



**EMD Chemicals Inc.**  
 480 S. Democrat Road  
 Gibbstown, NJ 08027  
 Phone 856-423-6300  
 Fax 856-423-4389

**Name:** Hydrochloric Acid  
 OmniTrace Ultra(TM) High Purity Acid

**Formula:** HCl in water

**Item Number:** HX0608-1, HX0608-2, HX0608-6, HX0608-7

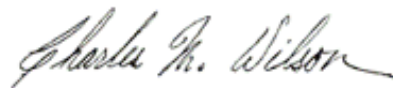
**Formula Wt:** 36.46

**Lot Number:** 46299

**Data Order No:** 000408691

CHARACTERISTIC	REQUIREMENT		RESULTS	UNITS
	Min.	Max.		
Assay	32	35	34	%
Appearance			Passes test	
Sulfate (SO4)		1	< 1	ppm
Aluminum (Al)		20	< 20	pg/g
Antimony (Sb)		20	< 20	pg/g
Arsenic (As)		50	< 20	pg/g
Barium (Ba)		10	< 1	pg/g
Beryllium (Be)		10	< 5	pg/g
Bismuth (Bi)		10	< 0.05	pg/g
Boron (B)		100	< 20	pg/g
Cadmium (Cd)		10	< 0.1	pg/g
Calcium (Ca)		20	< 20	pg/g
Cerium (Ce)		10	< 0.05	pg/g
Cesium (Cs)		10	< 0.05	pg/g
Chromium (Cr)		20	< 10	pg/g
Cobalt (Co)		10	< 3	pg/g
Copper (Cu)		20	< 5	pg/g
Dysprosium (Dy)		1	< 0.01	pg/g
Erbium (Er)		1	< 0.01	pg/g
Europium (Eu)		1	< 0.01	pg/g
Gadolinium (Gd)		1	< 0.01	pg/g
Gallium (Ga)		10	< 1	pg/g
Gold (Au)		100	< 10	pg/g
Hafnium (Hf)		10	< 0.05	pg/g
Holmium (Ho)		1	< 0.01	pg/g
Indium (In)		1	< 0.1	pg/g
Iron (Fe)		20	< 20	pg/g
Lanthanum (La)		1	< 0.05	pg/g
Lead (Pb)		10	< 1	pg/g
Lithium (Li)		10	< 1	pg/g
Lutetium (Lu)		10	< 0.01	pg/g
Magnesium (Mg)		10	< 5	pg/g
Manganese (Mn)		10	< 2	pg/g

Mercury (Hg)		100	< 100	pg/g
Molybdenum (Mo)		10	< 10	pg/g
Neodymium (Nd)		1	< 0.05	pg/g
Nickel (Ni)		50	< 10	pg/g
Niobium (Nb)		1	< 1	pg/g
Palladium (Pd)			< 10	pg/g
Platinum (Pt)			< 1	pg/g
Potassium (K)		10	< 10	pg/g
Praseodymium (Pr)		1	< 0.05	pg/g
Rhenium (Re)		10	< 0.1	pg/g
Rhodium (Rh)		10	< 1	pg/g
Rubidium (Rb)		10	< 1	pg/g
Ruthenium (Ru)		10	< 10	pg/g
Samarium (Sm)		1	< 0.01	pg/g
Scandium (Sc)		10	< 1	pg/g
Selenium (Se)			< 50	pg/g
Silver (Ag)		10	< 5	pg/g
Sodium (Na)		10	< 10	pg/g
Strontium (Sr)		10	< 1	pg/g
Tantalum (Ta)			< 20	pg/g
Tellurium (Te)		1	< 1	pg/g
Terbium (Tb)		1	< 0.01	pg/g
Thallium (Tl)		10	< 0.1	pg/g
Thorium (Th)		1	< 0.05	pg/g
Thulium (Tm)		1	< 0.01	pg/g
Tin (Sn)		20	< 20	pg/g
Titanium (Ti)		20	< 10	pg/g
Tungsten (W)		10	< 10	pg/g
Uranium (U)		1	< 0.01	pg/g
Vanadium (V)		10	< 1	pg/g
Ytterbium (Yb)		1	< 0.01	pg/g
Yttrium (Y)		1	< 0.1	pg/g
Zinc (Zn)		20	< 5	pg/g
Zirconium (Zr)		10	< 1	pg/g



Charles M. Wilson,  
Quality Assurance Manager

Release Date: 4/16/2007

EMD Chemicals Inc.  
(Formerly EM Science, A Division of EM Industries, Inc.)  
An Affiliate of Merck KGaA, Darmstadt, Germany