



**ChemPure\* Brand  
Chemicals**

Cust-Product Code: CP-M1495P  
Lot #: 2020072381

## CERTIFICATE OF ANALYSIS

...Pure Quality

PRODUCT NAME: **Hydrochloric Acid**  
ACS

F.W.: 36.4600

CHEMICAL FORMULA: HCl

CAS No: 7647-01-0

Density: 1.1800

ANALYTICAL RESULTS		
ITEM	SPECIFICATIONS	ANALYSIS
Appearance	Clear, colorless liquid	Passes Test
Assay (HCl)	36.5 - 38.0%	37.6%
Color (APHA)	10 max.	0
Residue After Ignition	5 ppm max.	<5 ppm
Bromide (Br)	0.005% max.	<0.005%
Sulfate (SO <sub>4</sub> )	1 ppm max.	<0.1 ppm
Sulfite (SO <sub>3</sub> )	1 ppm max.	<0.1 ppm
Free Chlorine (Cl <sub>2</sub> )	1 ppm max.	<0.5 ppm
Ammonium (NH <sub>4</sub> )	3 ppm max.	<3 ppm
Arsenic (As)	0.01 ppm max.	<0.01 ppm
Heavy Metals	1 ppm max.	<0.01 ppm
Iron (Fe)	0.2 ppm max.	<0.01 ppm
Manufacture Date	Record Actual	07/20/2020
Recommended Retest Date	Report Actual	07/20/2022

### REMARKS

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**ChemPure\* Brand  
Chemicals**

Cust-Product Code: CP-D1494P  
Lot #: 2020072381

## CERTIFICATE OF ANALYSIS

...Pure Quality

PRODUCT NAME: **Hydrochloric Acid**  
High Purity

F.W.: 36.4600

CHEMICAL FORMULA: HCl

CAS No: 7647-01-0

Density: 1.1800

ANALYTICAL RESULTS		
ITEM	SPECIFICATIONS	ANALYSIS
Assay (HCl)	36.5-38.0%	37.6%
Assay (HCl) Be'	22.7 deg Be' min.	>22.7° Be'
Appearance	Clear, colorless fuming liquid	Passes Test
Appearance (EP)	To pass test	Passes Test
Ammonium (NH <sub>4</sub> )	0.0003% max.	<0.0003%
Bromide or Iodide	To pass test	Passes Test
Color (APHA)	10 max.	<10
Clarity of Solution	Free from suspended matter/sediment	Passes Test
Free Bromine or Chlorine	To pass test (0.0001% max.)	Passes Test (<0.0001%)
Free Chlorine (Cl <sub>2</sub> )	1.0 ppm Max	<0.5 ppm
Heavy Metals (as Pb)	0.0001% max.	<0.00002%
Hydrazine	0.1 ppm Max	<0.001 ppm
Identification NF	To pass test	Passes Test
Identification FCC	To pass test	Passes Test
Nonvolatile residue	0.5% Max	<0.00001%
Organic Compounds - Total non-fluorine containing organic compounds	5 mg/kg Max	<0.001 mg/kg
Organic Compounds - Benzene	0.05 mg/kg Max	<0.001 mg/kg
Organic Compounds - Total fluorinated organic compounds	0.0025% Max	<0.0000001%
Oxidizing substances (as Cl <sub>2</sub> )	0.003% Max	<0.00001%
Reducing Substances	To pass test	Passes Test
Residue After Ignition	0.0005% max.	<0.0005%
Phosphate (PO <sub>4</sub> )	50 ppb Max	<50 ppb
Specific Gravity at 60°F	Record only (approx. 1.17-1.20)	1.19
Sulfate (SO <sub>4</sub> )	0.0001% max.	<0.00001%
Sulfite (SO <sub>3</sub> )	0.0001% max.	<0.00001%
Aluminum (Al)	300 ppb Max	<100 ppb
Antimony (Sb)	4 ppb Max	<4 ppb
Arsenic (As)	4 ppb max.	<1 ppb

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Cust-Product Code: CP-D1494P  
Lot #: 2020072381

...Pure Quality

## CERTIFICATE OF ANALYSIS

PRODUCT NAME: **Hydrochloric Acid**  
High Purity

F.W.: 36.4600

CHEMICAL FORMULA: HCl

CAS No: 7647-01-0

Density: 1.1800

### ANALYTICAL RESULTS

ITEM	SPECIFICATIONS	ANALYSIS
Barium (Ba)	100 ppb Max	<20 ppb
Beryllium (Be)	50 ppb Max	<10 ppb
Bismuth (Bi)	50 ppb Max	<20 ppb
Boron (B)	50 ppb Max	<20 ppb
Bromide (Br)	50 ppm Max	<50 ppm
Calcium (Ca)	300 ppb Max	<100 ppb
Cadmium (Cd)	100 ppb Max	<5 ppb
Chromium (Cr)	100 ppb Max	<50 ppb
Cobalt (Co)	50 ppb Max	<5 ppb
Copper (Cu)	50 ppb Max	<5 ppb
Gallium (Ga)	100 ppb Max	<20 ppb
Germanium (Ge)	100 ppb Max	<20 ppb
Gold (Au)	100 ppb Max	<5 ppb
Iron (Fe)	200 ppb Max	<50 ppb
Lead (Pb)	100 ppb Max	<25 ppb
Iridium (Ir)	2 ppm Max	<2 ppm
Lithium (Li)	100 ppb Max	<50 ppb
Magnesium (Mg)	200 ppb Max	<50 ppb
Manganese (Mn)	100 ppb Max	<5 ppb
Mercury (Hg)	1 ppb Max	<1 ppb
Molybdenum (Mo)	50 ppb Max	<10 ppb
Nickel (Ni)	50 ppb Max	<10 ppb
Palladium (Pd)	2 ppm Max	<2 ppm
Platinum (Pt)	2 ppm Max	<2 ppm
Silver (Ag)	50 ppb Max	<50 ppb
Potassium (K)	300 ppb Max	<100 ppb
Silicon (Si)	300 ppb Max	<100 ppb
Sodium (Na)	300 ppb Max	<100 ppb

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Chemicals**

Cust-Product Code: CP-D1494P  
Lot #: 2020072381

...Pure Quality

## CERTIFICATE OF ANALYSIS

PRODUCT NAME: **Hydrochloric Acid**  
High Purity

F.W.: 36.4600

CHEMICAL FORMULA: HCl

CAS No: 7647-01-0

Density: 1.1800

ANALYTICAL RESULTS		
ITEM	SPECIFICATIONS	ANALYSIS
Strontium (Sr)	100 ppb Max	<20 ppb
Rhodium (Rh)	2 ppm Max	<2 ppm
Ruthenium (Ru)	2 ppm Max	<2 ppm
Tantalum (Ta)	50 ppb Max	<10 ppb
Thallium (Tl)	50 ppb Max	<20 ppb
Tin (Sn)	300 ppb Max	<50 ppb
Titanium (Ti)	300 ppb Max	<10 ppb
Vanadium (V)	50 ppb Max	<10 ppb
Zinc (Zn)	100 ppb Max	<50 ppb
Zirconium (Zr)	50 ppb Max	<10 ppb
Manufacture Date	Record Actual	07/20/2020
Expiration Date	Two years from manufacture date	07/20/2022
REMARKS		

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**ChemPure\* Brand  
Chemicals**

Cust-Product Code: CP-A1969D  
Lot #: 2019111136

...Pure Quality

## CERTIFICATE OF ANALYSIS

PRODUCT NAME: **Potassium Iodide**  
Crystal, ACS

F.W.: 166.0000

CHEMICAL FORMULA: KI

CAS No: 7681-11-0

Density: 1.0000

ANALYTICAL RESULTS		
ITEM	SPECIFICATIONS	ANALYSIS
Heavy Metals (as Pb)	5 ppm max.	1 ppm
Assay (KI)	99.0% min.	99.9%
Barium (Ba)	0.002% max.	0.00002%
Calcium (Ca)	0.002% max.	0.00006%
Chloride and bromide (as Cl)	0.01% max.	0.001%
Color	White	Passes Test
Form	Granules	Passes Test
Insoluble Matter	0.005% max.	0.0003%
Iodate (IO <sub>3</sub> )	3 ppm max.	<3 ppm
Iron (Fe)	3 ppm max.	1 ppm
Loss on Drying at 150°C	0.2% max.	<0.1%
Magnesium (Mg)	0.001% max.	0.00003%
pH of a 5% solution at 25°C	6.0-9.2	6.8
Phosphate (PO <sub>4</sub> )	0.001% max.	0.0001%
Sodium (Na)	0.005% max.	0.003%
Sulfate (SO <sub>4</sub> )	0.005% max.	0.002%
Manufacture Date	Record Actual	10/22/2019
Expiration date	Record Actual	10/21/2021
REMARKS		

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**ChemPure\* Brand  
Chemicals**

Cust-Product Code: CP-M2390D  
Lot #: 2018100546

...Pure Quality

## CERTIFICATE OF ANALYSIS

PRODUCT NAME: **Sodium Hydroxide**  
Pellet, ACS

F.W.: 40.0000

CHEMICAL FORMULA: NaOH

CAS No: 1310-73-2

Density: 1.0000

ANALYTICAL RESULTS		
ITEM	SPECIFICATIONS	ANALYSIS
Iron (Fe)	0.001% max.	<0.0003%
Nickel (Ni)	0.001% max.	<0.0003%
Nitrogen Compounds (as N)	0.001% max.	<0.001%
Phosphate (PO4)	0.001% max.	<0.001%
Heavy metals (as Ag)	0.002% max.	<0.001%
Magnesium (Mg)	0.002% max.	<0.001%
Sulfate (SO4)	0.003% max.	<0.002%
Calcium (Ca)	0.005% max.	<0.002%
Chloride (Cl)	0.005% max.	<0.005%
Potassium (K)	0.02% max.	<0.01%
Mercury (Hg)	0.1 ppm max.	<0.1 ppm
Sodium Carbonate (Na2CO3)	1.0% max.	0.6%
Assay (NaOH)	97.0% min.	98.7%
Manufacture Date	Record Actual	09/01/2018
Expiration date	Record Actual	08/31/2021
REMARKS		

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