

Ultrapur

~Ultra-high pure Reagents~



Kanto Reagents

Ultrapur

“Ultrapur” guaranteed metal impurity content ppt Level

“Ultrapur” is the brand name of Ultra High Purity chemicals lineup specially designed for precise instrumental trace analysis of metal impurities. The modern analytical instruments, ICP-MS, ICP-AES, the detection limit have advanced from(10^{-9}) to ppt(10^{-12})level. To solve the increasing demands for highest purity of reagents from modern analytical instruments, Ultrapur reagents should have their impurity level less than 10 ppt.

1 Undetectable, minimal impurity content

Products are refined with Kanto's special treatment method for use in the clean room environment. The quantity of each element is at the ppt level at most, which offers the most superior product in purity on the market.

2 Contamination-free container

Products are contained in high-quality Teflon (PFA)-coated packaging, avoiding contamination from materials such as glass.

3 Certificate of Analysis

An assay is available for each product that records the lot-specific analysis obtained by ICP/MS and AAS methods.

Ultrapur-100

“Ultrapur-100” guaranteed metal impurity content 100 ppt Level

Ultra High Purity chemicals lineup specially designed for precise instrumental trace analysis of metal impurities same as *Ultrapur*. To solve the increasing demands for highest purity of reagents from modern analytical instruments, Ultrapur-100 reagents should have their impurity 100 ppt level.

1 High Purity

Ultrapur-100 products are refined with Kanto's special treatment method for use in the clean room environment. The quantity of each element is at the 100 ppt level, which is next to *Ultrapur*, which offers the most superior product in purity on the market.

2 Novel, Unique Bottle

Ultrapur-100 products are contained in Extremely-pure Polyethylene (HDPE) packaging, avoiding contamination from materials such as glass.

3 High Price-performance

To provide high price-performance even its high purity and contained in unique bottle. To solve the increasing demands for highest purity of reagents from modern Analysis of tap water and soil(pollution) using ICP-MS, ICP-AES, *Ultrapur-100* is the most suitable.



Kanto Kagaku

Ultrapur Acid • Ultrapure Water Specification

Item	<i>Ultrapur Acid • Ultrapure Water</i>								
	CH ₃ COOH	HCl	HF	HNO ₃	HClO ₄	H ₂ SO ₄	H ₂ O ₂	H ₂ O	
Purity	%	99.0%	–	–	–	60–62%	96%	–	–
Concentration	%	–	30.0–32.0%	46.0–51.0%	60.0–62.0%	–	–	30–32%	–
Silver(Ag)	max	1	1	0.5	1	5	10	1	1
Aluminium(Al)	max	10	10	5	10	20	20	10	5
Arsenic(As)	max	–	5	–	5	–	–	5	5
Gold(Au)	max	5	5	0.5	5	10	10	5	1
Barium(Ba)	max	5	5	2.5	5	–	–	5	1
Beryllium(Be)	max	1	1	0.5	1	10	10	1	1
Bismuth(Bi)	max	1	1	0.5	1	5	5	1	1
Calcium(Ca)	max	20	5	8	5	10	10	10	5
Cadmium(Cd)	max	5	5	2.5	5	10	10	5	5
Cobalt(Co)	max	5	5	0.5	5	10	10	5	1
Chromium(Cr)	max	5	5	2.5	5	20	10	5	1
Copper(Cu)	max	10	10	5	10	10	10	10	5
Europium(Eu)	max	–	1	0.5	1	–	–	1	–
Iron(Fe)	max	10	10	10	10	20	20	10	5
Gallium(Ga)	max	–	10	10	10	10	10	10	–
Germanium(Ge)	max	–	10	2.5	5	10	10	5	5
Mercury(Hg)	max	–	5	–	5	–	–	–	5
Indium(In)	max	10	10	10	10	10	10	10	–
Potassium(K)	max	10	5	2.5	5	10	10	5	5
Lithium(Li)	max	1	1	0.5	1	1	10	1	1
Magnesium(Mg)	max	20	5	2.5	5	10	10	5	5
Manganese(Mn)	max	5	5	2.5	5	5	5	5	1
Molybdenum(Mo)	max	–	5	2.5	5	10	10	5	1
Sodium(Na)	max	10	5	5	5	20	20	5	5
Niobium(Nb)	max	10	10	10	10	10	10	10	–
Nickel(Ni)	max	30	10	5	10	10	10	10	10
Lead(Pb)	max	5	5	2.5	5	5	5	5	5
Platinum(Pt)	max	10	10	2.5	5	10	10	5	5
Rubidium(Rb)	max	1	1	0.5	1	–	–	1	1
Rhodium(Rh)	max	–	1	0.5	1	–	–	1	–
Antimony(Sb)	max	5	5	2.5	5	10	10	5	5
Selenium(Se)	max	–	10	–	10	–	–	–	10
Tin(Sn)	max	10	10	5	5	20	20	5	5
Strontium(Sr)	max	1	1	0.5	1	1	1	1	1
Tantalum(Ta)	max	10	1	0.5	1	10	10	1	1
Thorium(Th)	max	0.05	0.005	0.005	0.005	0.1	0.1	0.005	0.005
Uranium(U)	max	0.02	0.002	0.002	0.002	0.1	0.1	0.002	0.002
Tungsten(W)	max	–	10	5	10	–	–	10	10
Yttrium(Y)	max	10	10	10	10	10	10	10	–
Zinc(Zn)	max	10	5	2.5	5	10	10	5	5
Zirconium(Zr)	max	10	10	–	10	10	10	10	–

Concentration Unit of Metal Specification : ppt

Ultrapur Alkali • Ultrapur -100 Specification

Item	Ultrapur Alkali			
	NH ₃	KOH	NaOH	
Concentration	%	28-30%	15%	11%
Silver(Ag)	max	0.01	-	-
Aluminium(Al)	max	0.2	30	20
Arsenic(As)	max	0.1	3	3
Barium(Ba)	max	0.01	10	10
Boron(B)	max	0.5	-	-
Beryllium(Be)	max	0.01	-	-
Bismuth(Bi)	max	0.01	-	-
Calcium(Ca)	max	0.5	2	2
Cadmium(Cd)	max	0.01	1	1
Cobalt(Co)	max	0.01	-	-
Chromium(Cr)	max	0.01	-	-
Copper(Cu)	max	0.1	3	3
Europium(Eu)	max	-	-	-
Iron(Fe)	max	0.5	10	10
Gallium(Ga)	max	0.01	-	-
Germanium(Ge)	max	-	-	-
Indium(In)	max	0.01	-	-
Potassium(K)	max	0.5	-	-
Lithium(Li)	max	0.01	-	-
Magnesium(Mg)	max	0.1	1	1
Manganese(Mn)	max	0.01	-	-
Sodium(Na)	max	0.5	-	-
Nickel(Ni)	max	0.1	-	-
Lead(Pb)	max	0.1	2	2
Palladium(Pd)	max	0.01	-	-
Antimony(Sb)	max	0.1	-	-
Silicon(Si)	max	1	-	-
Tin(Sn)	max	0.1	-	-
Strontium(Sr)	max	0.01	1	1
Thorium(Th)	max	0.01	-	-
Thallium(Tl)	max	0.1	-	-
Uranium(U)	max	0.01	-	-
Zinc(Zn)	max	0.1	15	10

Concentration Unit of Metal Specification : **ppb**

Item	Ultrapur 100				
	HCl	HF	HNO ₃	H ₂ SO ₄	
Purity	%	-	-	-	96.0%
Concentration	%	35.0-37.0%	46.0-51.0%	69.0-71.0%	-
Silver(Ag)	max	100	100	100	100
Aluminium(Al)	max	200	200	200	200
Gold(Au)	max	100	100	100	100
Barium(Ba)	max	100	100	100	100
Beryllium(Be)	max	100	100	100	100
Bismuth(Bi)	max	100	100	100	100
Calcium(Ca)	max	100	100	100	100
Cadmium(Cd)	max	100	100	100	100
Cobalt(Co)	max	100	100	100	100
Chromium(Cr)	max	100	100	100	100
Copper(Cu)	max	100	100	100	100
Iron(Fe)	max	200	200	200	200
Gallium(Ga)	max	100	100	100	100
Germanium(Ge)	max	100	100	100	100
Indium(In)	max	100	100	100	100
Potassium(K)	max	200	200	200	200
Lithium(Li)	max	100	100	100	100
Magnesium(Mg)	max	100	100	100	100
Manganese(Mn)	max	100	100	100	100
Molybdenum(Mo)	max	100	100	100	100
Sodium(Na)	max	200	200	200	200
Nickel(Ni)	max	100	100	100	100
Lead(Pb)	max	100	100	100	100
Antimony(Sb)	max	100	100	100	100
Tin(Sn)	max	100	100	100	100
Strontium(Sr)	max	100	100	100	100
Thorium(Th)	max	100	100	100	100
Thallium(Tl)	max	-	-	-	100
Uranium(U)	max	100	100	100	100
Yttrium(Y)	max	100	100	100	100
Zinc(Zn)	max	100	100	100	100
Zirconium(Zr)	max	100	-	100	100

Concentration Unit of Metal Specification : **ppt**

Ultrapur-100 Product List

Product Code	Product Name	Size
18078-4B	<i>Hydrochloric Acid</i>	500mL
18083-3B	<i>Hydrofluoric Acid</i>	500mL
28163-5B	<i>Nitric Acid</i>	500mL
37390-4B	<i>Sulfuric Acid</i>	500mL

Ultrapur Product List

Product Code	Product Name	Size
01021-2B	<i>Acetic Acid</i>	250mL
18078-1B	<i>Hydrochloric Acid</i>	250mL
18083-1B	<i>Hydrofluoric Acid</i>	250mL
28163-1B	<i>Nitric Acid</i>	250mL
32059-1B	<i>Perchloric Acid</i>	250mL
37390-1B	<i>Sulfuric Acid</i>	250mL
18084-2B	<i>Hydrogen peroxide</i>	250mL
43001-1B	<i>Ultrapure Water</i>	1L
01266-3B	<i>Ammonia Solution</i>	250mL
32947-1B	<i>Potassium Hydroxide Solution</i>	250mL
37960-1B	<i>Sodium Hydroxide solution</i>	250mL

<Precautions>

In order to protect the quality of Ultrapur, Ultrapur-100, we recommend you

- 1) Handling all in a clean-box, -bench(-hood), or -room of Class 10 or below.
- 2) To take out in order of a) Outer container and b) Inner box(Polyethylene bag with zipper)
- 3) To wear disposable polyethylene gloves and wash it with Ultra pure water.
- 4) To open carefully not to contaminate inside cap.
- 5) DO NOT directly insert pipette to inside bottle, sample directly bottle to another bottle.
- 6) Please immediately cap bottle as soon as using it.
- 7) Please store cool and dark place with putting bottle in plastic bag and putting it back to box.
- 8) **PAY ATTENTION, Nitrogen Oxide Gas can be permeated though bottle and Acidity Condensation can be appeared on outside of bottle. Please store at cool and dark place with sealed bottle cap.**

