

Fisher Chemical High-Purity Acids

Trace Elemental Analysis
Detect to ppq Levels



Introduction

Improve your detection limits with our high-purity acids.

Whether you are analysing environmental samples, etching glass, conducting routine testing or using ICP, our high-purity acids meet the challenge, offering superior performance at exceptional value. We can supply the type of acid you need, in the grades, sizes and packaging that meet your requirements.

We offer a complete line of acid grades to meet the most challenging applications:

- **Optima™ Acids (1-100 ppt)** – Suitable for detection at ppq levels. Feature the lowest metal content (1 ppt for key metals) and the highest purity
- **Trace Metal™ Acids (0.1-1 ppb)** – High-purity, exceptional value. Specification measured at 0.1 ppb for key metals
- **Primar Plus™ Acids (1-10 ppb)** – The perfect choice for routine applications
- **For Analysis, AR Acids (Low cadmium, lead and mercury level)** – Suitable for use in environmental and food applications

For your convenience, our high-purity acids are provided in fully recyclable, robust packaging for easier and safer handling.

Discover our high-purity acids today!

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Application example

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Detection level ppt to as low as ppq

Fisher Chemical Optima Acids

The highest purity of acids and bases for ultra-trace metal analysis. All products are certified below 100 parts per trillion (ppt or pg/g) with critical impurities specified at 1 ppt level. This range contains the fewest trace metallic impurities of any other acid. Our Optima Acids are tested for up to 65 elements at ppt levels using the Thermo Scientific™ Element™ 2 High Resolution ICP-MS.



Packaging highlights

Acids are packaged in either a fluorinated ethylene propylene resin bottle or a perfluoroalkoxy resin bottle with HCl and HF (to avoid vapour permeability issues).

- **Reliable** – Bottled in class 10 clean room environment and individually double-bagged in class 100 clean room to ensure product quality
- **Convenient** – Each bottle is individually packaged for easier and safer handling

Fisher Chemical Optima				
Product code	Product description	Pack size	Packaging	Price
FSBA465-250 FSBA465-500	Acetic Acid Glacial min. 99%, Optima	250mL 500mL	Pre-cleaned FEP	POA
FSBA470-250 FSBA470-500	Ammonia Solution 20-22%, Optima	250mL 500mL	Pre-cleaned HDPE	POA
FSBA471-500	Hydrobromic Acid 44-49%, Optima	500mL	Pre-cleaned FEP	POA
FSBA466-250 FSBA466-500	Hydrochloric Acid 32-35%, Optima	250mL 500mL	Pre-cleaned PFA	POA
FSBA463-250 FSBA463-500	Hydrofluoric Acid 47-51%, Optima	250mL 500mL	Pre-cleaned PFA	POA
FSBP170-500	Hydrogen Peroxide 30-32%, Optima	500mL	Pre-cleaned FEP	POA
FSBA467-250 FSBA467-500	Nitric Acid 67-69%, Optima	250mL 500mL	Pre-cleaned FEP	POA
FSBA468-250 FSBA468-500	Sulphuric Acid 93-98%, Optima	250mL 500mL	Pre-cleaned FEP	POA
FSBW9-500 FSBW9-1 FSBW9-2	Water, Optima	500mL 1L 2L	Pre-cleaned LDPE	POA

The certificate of analysis is delivered with each bottle and is available from www.acros.com. Price on application.

Application example

ICP-Mass Spectrometry

ICP-MS is the routine tool for multi-element analysis, from ultra-trace (ppq) to matrix (%). The entire periodic table can be analysed routinely in a few minutes. The Thermo Fisher Scientific portfolio features the most complete range of ICP-MS instrumentation. To exploit the full power of ICP-MS, chemicals of the highest quality and purity are required.

Our combined strengths in chemicals and analytical instrumentation guarantees unmatched quality for highest performance and undisputable results. The Fisher Chemical Optima Acids are a full range of chemicals for ultrapure analysis. Superiority is guaranteed by quality control using unparalleled Thermo Fisher Scientific instrumentation.

For more information, go to www.thermoscientific.com.au/instruments



From ppb to ppt level detection

Fisher Chemical Trace Metal Acids

These high-purity acids and bases are certified below one part per billion (ppb or ng/g) with key impurities specified at 0.1 ppb and the majority of impurities at 0.5 ppb or lower. Our Trace Metal Acids range is tested up to 65 elements by ICP-MS. Fisher Chemical Trace Metal Grade acids are suitable for ICP-MS and ICP applications.



Packaging highlights

- Convenient – Packaged in HDPE bottles, for safer, easier handling and to maintain quality
- Reliable – Bottled in class 10 clean room environment to ensure product quality

Fisher Chemical Trace Metal Acids & Solutions				
Product code	Product description	Pack size	Packaging	Price
FSBA507-P500 FSBA507-P1	Acetic Acid, glacial min 99%, Trace Metal	500mL 1L	HDPE bottle	POA
FSBA512-P500	Ammonia Solution 20-22%, Trace Metal	500mL	HDPE bottle	POA
FSBA508-P500 FSBA508-P1 FSBA508-P212	Hydrochloric Acid 34-37%, Trace Metal	500mL 1L 2.5L	HDPE bottle	\$90.00* \$150.00* \$250.00*
FSBA513-500	Hydrofluoric Acid 47-51%, Trace Metal	500mL	HDPE bottle	POA
FSBA509-P500 FSBA509-P1 FSBA509-P212	Nitric Acid 67-69%, Trace Metal	500mL 1L 2.5L	HDPE bottle	\$90.00* \$150.00* \$250.00*
FSBP/1292/PB08 FSBP/1292/PB15	Perchloric Acid 65-71%, Trace Metal	500mL 1L	PVC coated bottle	POA POA
FSBA510-P500 FSBA510-P1	Sulphuric Acid 93-98%, Trace Metal	500mL 1L	HDPE Bottle	POA POA

The certificate of analysis is available from www.acros.com. Lot analysis is available on the label.

*Pricing valid until 31st December 2016

Application example

ICP Optical Emission Spectrometry

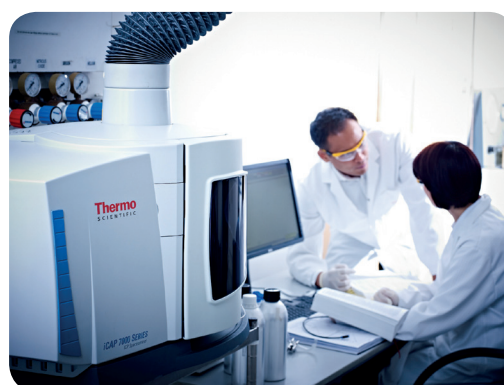
ICP-OES is a fast multi-element analysis technique capable of determining up to 72 elements in a very wide range of samples, including food, environmental, metallurgy and petrochemical samples.

With detection limit requirements from ppm to ppb levels, the Thermo Scientific™ iCAP™ 7000 Series ICP-OES is the laboratory workhorse for multi-element analysis, providing stable, efficient and low cost elemental analysis for all facilities. It is your simplified route to compliance in environmental, pharmaceutical and food safety fields, and a robust solution for exploratory or QA/QC industrial applications.

The best-performing ICP on the market deserves the best reagents. Our combined strengths in reagents and instrumentation guarantees unmatched quality for highest performance and the best results.

Fisher Chemical Trace Metal and Primar Plus grade acids allow iCAP instruments to achieve the ultimate in performance and guarantee high-quality results every time.

For more information, go to www.thermoscientific.com.au/instruments



From ppm to ppb level detection

Fisher Chemical Primar Plus Acids

Range of acids for trace elemental analysis - up to 40 elements tested down to ppb levels by ICP. 1-10 ppb level detection.

Fisher Chemical Primar Plus Acids				
Product code	Product description	Pack size	Packaging	Price
FSBA/0411/PB08	Acetic Acid Glacial >99.8%, Primar Plus	500mL	HDPE bottle	POA
FSBA/0411/PB15		1L		
FSBA/0411/PB17		2.5L		
FSBH/1196/PB08	Hydrochloric Acid min. 37%, Primar Plus	500mL	HDPE bottle	POA
FSBH/1196/PB15		1L		
FSBH/1196/PB17		2.5L		
FSBN/2272/PB08	Nitric Acid min. 68%, Primar Plus	500mL	HDPE bottle	POA
FSBN/2272/PB15		1L		
FSBN/2272/PB17		2.5L		
FSBS/9231/PB08	Sulphuric Acid min. 95%, Primar Plus	500mL	HDPE bottle	POA
FSBS/9231/PB15		1L		
FSBS/9231/PB17		2.5L		

The certificate of analysis is available from www.acros.com. Lot analysis is available on the label.

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Packaging highlight

- Convenient – Packaged in HDPE bottles, for safer, easier handling and to maintain quality

Application example

AA Spectrometry

AA spectrometry provides parts per million and parts per billion detection limits for most metallic elements in many different sample matrices with minimal interferences. Although invented over 50 years ago, AA is still the technique of choice for many laboratories.

With dedicated flame, furnace or combined flame and furnace options, the fast, easy-to-use and fully automated Thermo Fisher Scientific iCE 3000 Series AAs offers refreshingly good value for money. Our scientists designed this complete AA portfolio for your demanding analytical needs, offering stunning simplicity, innovative design and superior analytical performance, in a compact package.

For more information, go to www.thermoscientific.com.au/instruments

Fisher Chemical For Analysis, AR Acids

A range of acids For Analysis, AR with a low cadmium, lead and mercury level. Suitable for use in environmental and food applications. From ppm to ppb level detection.

Fisher Chemical For Analysis, AR Acids				
Product code	Product description	Pack size	Packaging	Price
FSBH/1020/PB15	Hydrochloric Acid 25% – For Analysis, AR; low cadmium, lead & mercury level	1L	HDPE bottle	POA
FSBH/1020/PB17		2.5L		POA
FSBN/2300/PB17	Nitric Acid 68% - 70% Certified AR ACS	2.5L	HDPE bottle	\$40.00*
FSBS/9220/PB15	Sulphuric Acid 95% – For Analysis, AR; low cadmium, lead & mercury level	1L	HDPE bottle	POA
FSBS/9220/PB17		2.5L		POA

The certificate of analysis is available from www.acros.com. Lot analysis is available on the label.



Product specifications guide

At a time when you are striving for new levels of integration, sensitivity and performance in your laboratories, we offer an unmatched portfolio of products for the most common to the most complex applications.

Analyte	Specifications		
	Optima Nitric Acid, FSBA467 Assay (HNO ₃ , w/w): 67-69%	Trace Metal Nitric Acid, FSBA509 Assay (HNO ₃ , w/w): 67-69% Colour (APHA): 10	Primar Plus Nitric Acid, Acid FSN/2272 Assay (HNO ₃ , w/w): > 67-69%
	Trace impurities in ppt (pg/g)	Trace impurities in ppb (ng/g)	Trace impurities in ppb (ng/g)
	Maximum specifications		
Aluminium (Al)	20	1	100
Antimony (Sb)	10	0.5	5
Arsenic (As)	20	0.5	5
Barium (Ba)	10	0.1	50
Beryllium (Be)	10	0.1	5
Bismuth (Bi)	10	0.1	5
Boron (B)	10	1	5
Cadmium (Cd)	10	0.5	2
Calcium (Ca)	10	1	50
Cerium (Ce)	10	0.1	*
Cesium (Cs)	10	0.1	*
Chromium (Cr)	10	1	5
Cobalt (Co)	10	0.5	*
Copper (Cu)	10	0.5	5
Dysprosium (Dy)	1	0.1	*
Erbium (Er)	1	0.1	*
Europium (Eu)	1	0.1	*
Gadolinium (Gd)	1	0.1	*
Gallium (Ga)	10	0.1	5
Germanium (Ge)	10	0.1	5
Gold (Au)	20	0.1	*
Hafnium (Hf)	10	0.1	*
Holmium (Ho)	1	0.1	*
Indium (In)	1	0.1	5
Iron (Fe)	10	1	50
Lanthanum (La)	1	0.1	*
Lead (Pb)	10	0.1	2
Lithium (Li)	10	0.1	2
Lutetium (Lu)	1	0.1	*
Magnesium (Mg)	10	1	20
Manganese (Mn)	10	0.1	2
Mercury (Hg)	50	0.1	5
Molybdenum (Mo)	10	0.1	2
Neodymium (Nd)	1	0.1	*
Nickel (Ni)	20	0.5	2
Niobium (Nb)	1	0.1	*
Palladium (Pd)	20	0.5	*
Platinum (Pt)	20	0.5	*
Potassium (K)	10	1	20
Praseodymium (Pr)	1	0.1	*
Residue after ignition	*	*	<0,0002%
Rhenium (Re)	10	0.1	*
Rhodium (Rh)	10	0.5	*
Rubidium (Rb)	10	0.1	*
Ruthenium (Ru)	20	0.5	*
Samarium (Sm)	1	0.1	*
Scandium (Sc)	10	0.1	*
Selenium (Se)	Information only	1	2
Silver (Ag)	10	0.1	5
Sodium (Na)	10	1	100
Strontium (Sr)	10	0.1	2
Tantalum (Ta)	Information only	Information only	*
Tellurium (Te)	1	0.1	*
Terbium (Tb)	1	0.1	*
Thallium (Tl)	10	0.1	5
Thorium (Th)	1	0.1	*
Thulium (Tm)	1	0.1	*
Tin (Sn)	20	0.5	5
Titanium (Ti)	10	0.5	2
Tungsten (W)	10	0.1	*
Total chloride	*	*	<0,0002%
Total sulfur	*	*	200
Uranium (U)	1	0.1	*
Vanadium (V)	10	0.5	2
Ytterbium (Yb)	1	0.1	*
Yttrium (Y)	1	0.1	*
Zinc (Zn)	10	0.5	10
Zirconium (Zr)	10	0.1	5

Select the suitable Fisher Chemical High-Purity Acid for your application!

Fisher Chemical High-Purity Acids selection guide						
		Optima	Trace Metal	Primar Plus	For Analysis, AR	
		Detection level ppt to as low as ppq	1 ppb level detection	1-10 ppb level detection	(low cadmium, lead and mercury level)	
Product description	Pack size	Product code				
Acetic Acid Glacial	250mL	FSBA465-250				
	500mL	FSBA465-500	FSBA507-P500	FSBA/0411/PB08		
Ammonia Solution	250mL	FSBA470-250				
	500mL	FSBA470-500	FSBA512-P500			
Hydrobromic Acid	500mL	FSBA471-500				
Hydrochloric Acid	250mL	FSBA466-250				
	500mL	FSBA466-500	FSBA508-P500	FSBH/1196/PB08		
	1L	FSBA466-1	FSBA508-P1	FSBH/1196/PB15	FSBH/1020/PB15*	FSBH/1180/PB15**
	2.5L		FSBA508-P212	FSBH/1196/PB17	FSBH/1020/PB17*	FSBH/1180/PB17**
Hydrofluoric Acid	250mL	FSBA463-250				
	500mL	FSBA463-500	FSBA513-500			
Hydrogen Peroxide	500mL	FSBP170-500				
Nitric Acid	250mL	FSBA467-250				
	500mL	FSBA467-500	FSBA509-P500	FSBN/2272/PB08		
	1L	FSBA467-1	FSBA509-P1	FSBN/2272/PB15		
	2.5L		FSBA509-P212	FSBN/2272/PB17	FSBN/2320/PB17	
Perchloric Acid	250mL					
	500mL			FSBP/1292/PB08		
	1L	FSBP/1292/PB15				
Sulphuric Acid	250mL	FSBA468-250				
	500mL	FSBA468-500	FSBA510-P500	FSBS/9231/PB08		
	2.5L			FSBS/9231/PB17	FSBN/2300/PB17	
Water	500mL	FSBW9-500				
	1L	FSBW9-1				
	2L	FSBW9-2				

*Hydrochloric acid 25% ** Hydrochloric acid 37%

Do you want to improve your detection limits?

Look closer for answers to your analytical challenges.

- Optima, Trace Metal, Primar Plus and For Analysis, AR grade products, depending on your application
- Sizes and quantities for your project scope, from bench to batch
- Packaging design that preserves chemical quality and promotes lab safety
- Product specification and certificate of analysis available on the website



Order Placement:

To fax an order, use 1800-067-639

To phone, call 1300-735-292

To email an order, ordersau@thermofisher.com

To order online: thermofisher.com.au

Contact Us:

For customer service, call 1300-735-292

For service and calibration, call 1300-736-767

By email, auinfo@thermofisher.com

Find out more at thermofisher.com.au

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