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Chemicals for Analytical Techniques

A reference guide to key solvents and acids for every application

Fisher Scientific

Fisher Chemical

"Chemicals for Analytical Techniques" is Fisher Chemical's latest reference guide providing extensive information on chemicals used in wide range of analytical techniques, from LC/MS to HPLC to gas chromatography to spectrophotometry. Use the safety reference guide to quickly access chemical storage codes or spill cleanup symbols. Read more about Fisher Chemical's commitment to not just safely pack each chemical, but ensuring the packaging is environmental friendly as well. Finally, don't waste time searching for the right solvent or acid, use this easy-to-identify product list. Fisher Chemical delivers quality, purity and certainty

Fisher Chemical offers more than 5,000 high-quality chemicals: dry reagents, acids and solutions and high-purity solvents. All chemicals are manufactured in ISO 9001:2008-certified facilities, and undergo rigorous quality assurance and testing procedures, ensuring excellent lot-to-lot and bottle-to-bottle consistency.

For more information about any of our products, or to learn about special offers, please contact your local Fisher Scientific representative or log on to **www.fishersci.com/chemicals.**

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Need more information about chemicals and bioreagents?

Our team of manufacturing chemists, chemical specialists, account representatives and customer service personnel are committed to bringing you the highest level of customer service, technical assistance and fast, accurate delivery.

Customer Service: **1-800-766-7000**

Chemical Technical Support: **1-800-227-6701**
Available in the United States, Puerto Rico and Canada.
Monday – Friday, 8:00 a.m. to 6:30 p.m. ET

Your Partners in Smart Chemistry Solutions

Our essential reagents and chemicals enable analysis, research and development, scale-up and manufacturing through:

Supply Chain Flexibility

Fisher Chemical product line stands for high-quality products and customer-focused, optimized, global solutions. We are committed to improving your transaction efficiency through the broadest and most flexible purchasing options including direct sales, catalogs and e-commerce.

Manufacturing Capabilities

Our blending, custom synthesis, distillation, crystallization, testing, packaging, filling, USP grade, multicompendial and GMP capabilities allow us to manufacture a broad range of products to assist on the various stages from drug discovery to production. Each year we produce and package millions of liters of high-purity liquid reagents and semi-bulk quantities of high-purity dry reagents. We specialize in high-volume packaging, as well as custom micro-scale weighing, while maintaining chemical purity. Through our extensive supply chain network and sourcing excellence we deliver customized chemical solutions to a wide range of customers in pharmaceutical, biotechnology and industrial markets.

Quality and Reliability

Our world-class manufacturing and unmatched expertise enable us to provide customers with the best quality, and deliver products when and where they are needed. Our reagents are manufactured, tested and packaged under ISO 9001:2008 certification.

Innovative Packaging

Our products come in a wide variety of innovative packaging designed for safety, environmental protection, convenient handling and storage, and preservation of product integrity. Our packaging is compliant with all government regulations.

Specialized Chemical Services

All Fisher Chemical products are available in the following custom services and solutions:

- Semi-bulk and bulk chemicals
- Special Solutions
- Tailored Solvents and Solvent Blends
- Testing Services
- Customized Packaging and Labeling

Please contact your Fisher Scientific sales representative for a custom quote.

Safely Serving Science

Safety and customer convenience are at the foundation of our business. From product selection to packaging innovations, we continue to strive to meet the changing needs of our customers, faster and more effectively.

We ship our products in the environmentally friendly, fully recyclable corrugated boxes produced by a Sustainable Forestry Initiative* (SFI)-certified manufacturer. (Learn more on p. 4.)

Our FisherLOCK* cap has been designed to reduce the potential for leakage during transportation and incorporates the easy-to-see color coding that follows National Fire Protection Association (NFPA) industry standards. (Learn more on p. 3.) This same color coding is also reflected on our pressure-sensitive labels, which are printed with chemical resistant ink to protect the important product safety information. (See below.)

Safety Quick Reference Guide

Fisher Chemical* Bottle Labels

1 **Bar Code:** an alphanumeric code widely used by industry for inventory and tracking control; this "three-of-nine" code meets the Health Industry Bar Code (HIBC) Supplier Labeling Standard as prepared by the Health Industry Business Communication Council (HIBCC)

2 Appropriate **Precautionary Signal Word** (i.e., DANGER, WARNING, CAUTION), which highlights the Potential Health Hazards, both acute and chronic, of the product

3 **Molecular Formula, Formula Weight and Product Chemical Abstract Service (CAS) Registry Number; Date Received** is left blank for the customer to write the date the bottle was received to assist in inventory control

4 **Maximum Limits of Impurities**

5 **Product Name and Purity Grade**

6 **Fisher Chemical ChemAlert* Guide:** A three-part guide that provides the Safety Code, the NFPA Code and a Storage Code

7 **NFPA Code:** Provides information relating to the severity of health, flammability, reactivity and related hazards that may be presented by short-term, acute exposure to material during handling under emergency conditions such as spills, leaks and fires. Each section displays a numerical severity rating from four (most severe) to zero (least severe). The fourth section, as stipulated by NFPA, is left blank and is reserved for indicating any unusual reactivity with water or oxidizing properties

8 **Storage Code:** The storage code is spelled out for clarification and the color-coded bar provides an instant reference guide; refer to p. 2 for the five ChemAlert colors and their descriptions

9 **U.S. Department of Transportation (DOT) Shipping Information:** Includes the DOT Proper Shipping Name and U.N./N.A. Number, which identifies the United Nations/North American numerical designation for transportation hazards

10 **Catalog Number:** For identification reference

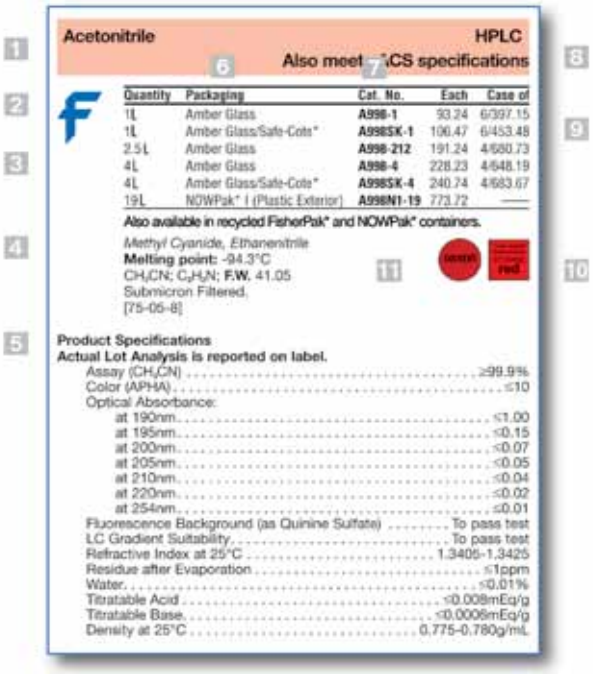
11 **Manufacturer's Address and Telephone Number** (Fisher Chemical is listed)

12 **Package Size:** The amount of material per unit or case

13 **Lot Number**

Note: *ChemAlert is an instant guide only. It should be supplemented by reading the rest of the label (provides detailed instructions in the event of accidental exposure, spill or fire, and applicable OSHA, DOT and ANSI* data), and the appropriate Material Safety Data Sheet and standard references.*

Catalog Product Information Labels



1. Product Name
2. Company Logo
3. Container Size
4. Synonym(s), Formula, Formula Weight, CAS Registry Number
   Also: Physical Data and Special Application Notes
5. Product Specifications
6. Type of Primary Container
7. Catalog Number
8. Purity Grade (Fisher Chemical* grades are described on p. 5)
9. Price
10. Storage Code Color (ChemAlert* Storage Codes are described on the right.)
11. Spill Cleanup Kit Symbols (See right for more information.)

Accepted Nomenclature

- Chemical salts and compounds are listed under element name "Sodium Benzoate," not "Benzoate of Sodium"
- Prefixes for organic compounds – alpha, iso, meta, secondary and abbreviations – do not affect alphabetical order (Exceptions: cases where prefix is considered part of the name)
- Numerical prefixes, such as tri and tetra, are treated as an integral part of the name; the prefix mono is not used

Packaging for Safety, Convenience and Product Quality

The Fisher Chemical portfolio comes in a wide variety of innovative packaging designed for safety, environmental protection, convenient handling and storage, and preservation of product integrity. Our packaging is compliant with all government regulations. Shipping cartons covered by the U.S. Department of Transportation regulations also meet international hazardous materials regulations and standards. Primary containers include:

- Plastic and glass bottles/jars
- Tin cans
- SafeTin* cans
- Aluminum cans
- Square poly bottles
- Steel drum/pails
- PolyPac* containers
- FisherPak*

Learn more about our packaging on pp. 3-4.

ChemAlert Storage Codes

RED (R): Flammable; *Store in an area segregated for flammable reagents*

BLUE (B): Health and hazard. Toxic if inhaled, ingested or absorbed through skin; *Store in secure area*

YELLOW (Y): Reactive and oxidizing reagents. May react violently with air, water or other substance; *Store away from flammable and combustible materials*

WHITE (W): Corrosive. May harm skin, eyes, mucus membranes; *Store away from red, yellow and blue coded reagents*

GRAY (G): Presents no more than moderate hazard in any of the categories above; *For general chemical storage*

Exception: *Reagent incompatible with other reagents of the same color bar; store separately*

Spill Cleanup Kit Symbols

To simplify ordering the appropriate kit, the following symbols are used to identify chemicals that require special cleanup materials and the type of cleanup kit required. These are one-time-use kits containing everything necessary for spill cleanup.

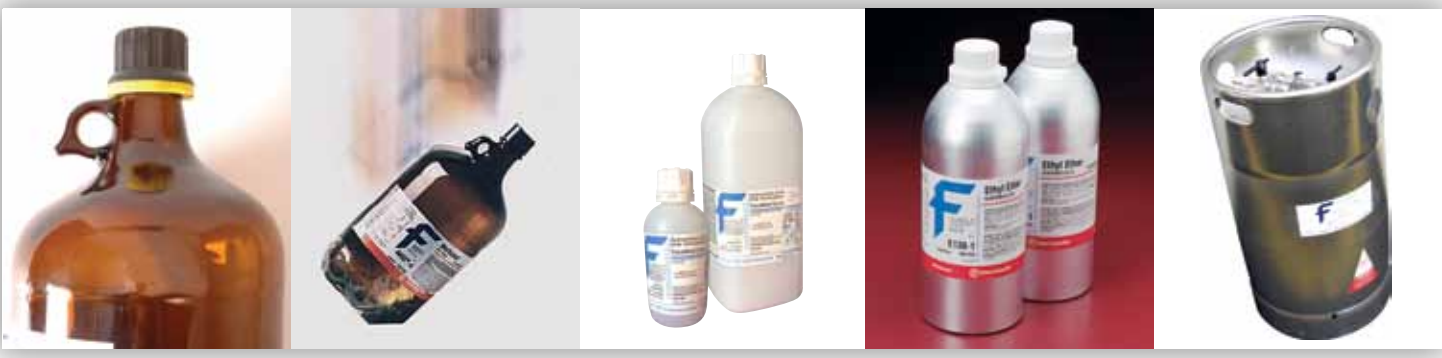
Mercury Warning; this product contains Mercury.

Acid Spill Emergency Cleanup Kit for neutralizing and absorbing up to 1L of acid. (**Cat. No. 18-061A**)

Caustic Spill Emergency Cleanup Kit for neutralizing and absorbing up to 1L of caustic material. (**Cat. No. 18-061C**)

Solvent Spill Emergency Cleanup Kit for neutralizing and absorbing up to 1L of solvent. (**Cat. No. 18-061B**)

Excellence in Packaging through Innovation



Excellence in Packaging through Innovation

The Fisher Chemical* portfolio comes in a wide variety of innovative packaging designed for safety, environmental protection, convenient handling and storage, and preservation of product integrity. Our packaging is compliant with all government regulations.

Plastic Bottles – Safety and Convenience
Available when chemical properties are compatible to minimize the risk of breakage, provide lighter weight packaging and enable more economical shipping.

Amber Glass Bottles – Quality and Reliability
Used to package photosensitive chemicals, to protect them from light.

Safe-Cote* PVC-Coated Bottles – Safety
These tough bottles provide the purity of glass and most of the benefits of plastic for storing and dispensing of solvents and acids. If the bottle breaks, glass fragments and liquids are more likely to remain trapped.

Aluminum Cans – Quality and Reliability
Designed to contain ethers, Fisher Chemical 1L and 4L aluminum cans feature a round, seamless construction, which reduces the possibility of leakage through a seam.

Lock in Quality and Safety with Fisher Chemical Products

Fisher Chemical products are now packaged with the innovative, new FisherLOCK* Cap, designed to help maintain the highest standards in product quality and chemical safety practices. With an exclusive color-coded design (patent pending), the FisherLOCK Cap is engineered to lock to the transfer bead of the bottle when applied during manufacturing to a filled bottle of laboratory chemicals. The cap design includes an interior ring, visible from various angles, which offers resistance until separated from the cap when opened.

The presence and location of that ring imparts tamper evidence to the configuration — without the drawbacks and complications of a plastic seal over the cap. The FisherLOCK Cap is easy-to-use, and supports product quality, reliability of use and safety-in-use of the chemical products you purchase.

The FisherLOCK Cap LOCKS in quality, safety, reliability and convenience:

QUALITY

- Provides a tight, tamper-evident, secure seal to ensure chemical contents arrive fresh and unopened
- Eliminates polyethylene glycol contamination that is possible with a plastic overseal

SAFETY

- Caps are designed to resist back-off during transport, reducing risk of leakage
- Color-coded rings indicate storage requirements and hazard categories, and enhance proper recognition, handling and storage, even before the bottle is removed from the case

RELIABILITY

- Rigorously tested for chemical compatibility
- Bottle threads are unchanged, allowing you to continue to attach the opened bottle to standard equipment

CONVENIENCE

- Cap design facilitates correct initial torque application during manufacturing, thus eliminating caps that may be hard to twist open
- Larger ridges on the exterior of the cap make it easier to open
- Caps readily reseal after initial opening

Going Green Has Never Been So Easy With...

EcoSafPak

Styrofoam*-free EcoSafPak* packaging. We now deliver all 4 x 4L, 1 x 4L, 6 x 1L, 6 x 500mL, 1 x 2.5L, 1 x 1L, 1 x 500mL, 2 x 4L, 2 x 1L and 2 x 500mL glass bottles (including the Safe-Cote* glass bottles) of your favorite products in eco-friendly EcoSafPak packaging manufactured by an SFI-certified manufacturer.

EcoSafPak packaging minimizes the use of non-recyclable material through the use of the revolutionary Hexacomb* design inserts.

The Hexacomb is:

- Fully recyclable
- Sturdy and durable
- Versatile

Improved Safety and Handling

- EcoSafPak is the only package of its kind to pass the requirements of the International Safe Transport Association "3A" test:
  - 17 Drops to simulate real-world parcel shipment handling
  - Shock testing
  - Vibration testing
  - Corrugated material is shock absorbing
  - Greater stability in the frame of the box
  - Staggered handholds for ease of transport

SFI CERTIFIED SOURCING

FIBER USED IN THIS PRODUCT LINE MEETS THE SOURCING REQUIREMENTS OF THE SFI PROGRAM

WWW.SFIPROGRAM.ORG

The SFI Program:

- is based on the premise that responsible environmental behavior and sound business decisions can co-exist
- is a comprehensive system of principles, objectives and performance measures developed by professional foresters, conservationists and scientists
- promotes the perpetual growing and harvesting of trees with the long-term protection of wildlife, plants, soil and water

SFI's Nine Objectives:

- Sustainable forestry
- Responsible practices
- Reforestation and productive capacity
- Forest health and productivity
- Long-term forest and soil productivity
- Protection of water resources
- Protection of special sites and biological diversity
- Legal compliance
- Continual improvement

ThinkGreen
Fisher Scientific

Solvents

The Fisher Chemical* portfolio of high-purity solvents comprises more than 600 solvents suited to a wide range of laboratory applications, from LC/MS to HPLC to gas chromatography to spectrophotometry.

Manufactured in ISO 9001:2008-certified facilities, each Fisher Chemical solvent undergoes rigorous quality assurance and testing measures that ensure excellent lot-to-lot and bottle-to-bottle consistency.

Fisher Chemical Solvents Purity Grades

Grade	Definition	Application	Certificate Of Analysis
Optima* LC/MS	Solvents and additives of exceptionally high purity specially designed and use-tested on LC/MS instruments. Solvents impurity levels in ppb.	LC/MS, HPLC, GC and spectrophotometry	Provided with each shipment
Optima	Acids and solvents of extremely high purity. Acids are analyzed for 65 metals by ICP/MS; impurity levels in ppt. Solvent impurity levels in ppm. UV absorbance curves and sample chromatograms available on request. For Optima acids, a typical lot analysis is given in the catalog. Impurity levels in an actual lot received may vary from the amount listed.	HPLC, GC, plasma/ICP, spectrophotometry, and pesticide residue analysis	Provided with each shipment
GC *Resolv**	Solvents with the highest purity and lot-to-lot consistency. Free of contaminants to the ppb level, including those listed in Contract Laboratory Program Target Compound List. Meet ACS specifications. Chromatogram available on request.	Gas Chromatography (GC)	Provided with each shipment
HPLC	Solvents manufactured specifically for use with HPLC instruments. Meet all ACS specifications. Submicron filtered.	HPLC and spectrophotometry procedures	Available on request
Certified ACS Plus	Acids that, in addition to meeting or exceeding the latest specifications of the ACS, are analyzed for more than 16 metals. Actual lot analysis on label.	Analytical applications with tighter metal specifications	Available on request
Certified ACS	Reagent chemicals that meet or exceed the latest ACS Specifications. Actual lot analysis on label.	Analytical applications requiring tight specifications	Available on request
Certified	Reagent chemicals for which the purity standard is established by Fisher Scientific. Purity is guaranteed to meet published maximum limits of impurities.	General analytical procedures	Available on request
Ultra Trace Elemental Analysis	Solvents manufactured for use with plasma/ICP instruments. Impurity levels in ppt. Packaged in acid-cleaned polyethylene bottles.	Plasma/ICP, environmental testing, trace-metal analysis	Available on request
Environmental Grade	Solvents for use in HPLC analysis, trace-organic analysis, and environmental testing. Packaged in precleaned glass bottles in M3.5 (Class 100) clean-room. Shipped with Certificate of Analysis.	HPLC, trace-organic analysis, environmental testing	Provided with each shipment
Pesticide	Solvents for use in analysis of pesticide residue. Meet or exceed ACS standards of purity for pesticide residue analysis.	GC with electron capture detector (ECD), pesticide residue analysis	Available on request
USP/NF/FCC/ EP/BP/JP	Reagent chemicals that meet or surpass specifications of the United States Pharmacopeia (USP), the National Formulary (NF), the Food Chemicals Codex (FCC), the European Pharmacopeia (EP), the British Pharmacopeia (BP) and/or the Japanese Pharmacopeia (JP).	Food and drug laboratories, biological testing	20L or greater; 10kg or greater
Spectranalyzed*	Solvents for use in spectrophotometry. Also meet ACS specifications. Actual lot analysis on label.	Ultraviolet and visible wavelength detectors (UV-Vis)	Available on request
Biotechnology	Solvents and reagents that have been specially purified and assayed for biotechnology applications.	Electrophoresis, molecular biology, sequencing, and peptide and oligonucleotide synthesis	Available on request
Scintanalyzed*	Solvents, fluors and prepared cocktails for liquid scintillation counting. Includes nonflammable, nontoxic, biodegradable ScintiSafe* cocktails.	Liquid scintillation counting	Available on request
Electronic	Solvents manufactured to ensure low levels of metal contamination. Meet Semiconductor Equipment and Materials Institute (SEMI) requirements. Actual lot analysis on label.	Electronics and circuit board manufacturing	Available on request
TraceMetal*	Acids manufactured to achieve low metal contamination measurable in ppm to ppb range. Each lot is analyzed for more than 55 metals by ICP/MS. For TraceMetal acids, a typical lot analysis is given in the catalog. Impurity levels in an actual lot received may vary from amounts listed	Primarily used in digestion of samples prior to instrument (ICP) analysis	Provided with each shipment
Histology	Solvents and products that are specially prepared for use in the histology laboratory setting. Solvents are filtered for tissue processing applications.	Tissue processing, clinical or histology procedures	Available on request
Laboratory and Technical	Chemicals of reasonable quality and purity for use in procedures where no official standards are required.	Manufacturing and general laboratory use	Available on request

Fisher Chemical* High Purity Solvents Selection Guide

Solvent	Available Grades†	UV Cutoff (nm)	Boiling Point (°C)	Density (g/mL, 25°C)	Refractive Index (25°C)	Melting Point (°C)	Polarity Index (P')	Eluotropic Value on Silica (ε°)	Viscosity (cP, 20°C)	Flash Point (°C)	Mol. Wt.
Acetone	GOHPSEF	330	56.1	0.7857	1.3568	-94.3	5.1	0.53	0.36	20	58.08
Acetonitrile	OHP	190	81.6	0.7780	1.3415	-50.0	5.8	0.52	0.36	2	41.05
1-Butanol	HS	215	117.7	0.8098	1.3972	-88.6	3.9	----	2.98	35	74.12
Chloroform	OMHPS	245	61.7	1.4840	1.4445	-63.3	4.1	0.26	0.58	none	119.38
Cyclohexane	HPS	202	80.7	0.7740	1.4247	-6.5	0.2	0.03	0.90	-20	84.16
N,N-Dimethyloformamide	S	268	153.0	0.9440	1.4280	-61.0	6.4	----	0.92	58	73.09
Dimethyl Sulfoxide	SH	262	189.0	1.1014	1.4783	18.5	7.2	----	2.24	87.8	78.13
Ethyl Acetate	OHPSPh	255	77.1	0.8940	1.3695	-83.9	4.4	0.38	0.45	-4	88.11
Ethyl Ether	HPS	218	34.6	0.7134	1.3500	-116.3	2.8	0.43	0.24	-45	74.12
Glycerol	MSPh	205	290.0	1.2613	1.4746	18.2	----	----	----	193	92.09
Heptane	HSO	197	98.4	0.6838	1.3855	-90.6	0.2	0.01	0.40	-4	100.20
Hexanes	GOHPSPh	195	69.0	0.6630	1.3759	-95.3	0.1	0.01	0.31	-23	86.18
Isooctane	OHPS	205	99.2	0.6919	1.3895	109.5	0.1	0.01	0.50	28	114.23
Methanol	GPtOHPSELw	205	64.7	0.7915	1.3288	-97.8	5.1	0.73	0.55	12	32.04
Methylene Chloride	GOHPS	233	39.5	1.3180	1.4215	-96.7	3.1	0.32	0.30	N/A	84.93
N-Methylpyrrolidinone	M	275	202.2	1.03	1.469	-24.4	----	----	1.67	95	99.13
Pentane	HPS	190	36.1	0.6264	1.3555	-129.7	0.0	0.00	0.22	-49	72.15
Petroleum Ether	OP	----	35-60	0.6400	1.3610	----	0.1	----	----	-18	----
2-Propanol	OHPSLwPh	205	82.3	0.7855	1.3772	-90.0	3.9	0.63	2.40	-12	60.10
Tetrahydrofuran	OHS	210	66.1	0.8892	1.4060	-108.3	4.0	0.35	0.55	-14	72.11
Toluene	OHSSc	285	110.6	0.8660	1.4940	-95.0	2.4	0.22	0.59	-4	92.14
Water	OH	----	100.0	0.9982	1.3330	0.0	10.2	----	1.00	N/A	18.02

†G = GC *Resolv** Pt = Purge & Trap O = Optima* M = Molecular Biology Grade H = HPLC Grade P = Pesticide Grade S = Spectranalyzed* E = Electronic Grade Sc = Scintanalyzed* Lw = Low water

Ph = Pharmacopeia, one or more of the following: USP, NF, FCC, EP, BP, JP

Liquid Chromatography/ Mass Spectrometry (LC/MS)

The joining of liquid chromatography (LC) with mass spectrometry (MS) has become an indispensable tool for various fields of research. The value of LC/MS derives from its ability to combine separation chemistry with selective mass ion detection. As instrumentation advances lead to ever-lower analyte detection limits, it is crucial for the chromatographer to consider the level of purity when selecting appropriate solvents for use in the LC/MS mobile phase. The Fisher Chemical* product line offers **Optima* LC/MS** Grade Solvents designed to meet the required purity level of advanced LC/MS systems.

Key Features:

- Lower contamination from plasticizer peaks
- Exceptionally low metal ion content
- Fewer background peaks
- Higher signal intensity low LC/ D UV response

Thermo Scientific* Q Exactive* Benchtop Orbitrap* LC-MS/MS offers "Quanfirmation" – identification, quantitation,confirmation.

For more product information, go to: **www.thermoscientific.com/ms**

Product Description	Grade	Size	Packaging	Cat. No.
OPTIMA LC/MS				
SOLVENTS				
Acetonitrile	Optima LC/MS	500mL	Amber Glass	**A955-500**
Acetonitrile	Optima LC/MS	1L	Amber Glass	**A955-1**
Acetonitrile	Optima LC/MS	2.5L	Amber Glass	**A955-212**
Acetonitrile	Optima LC/MS	4L	Amber Glass	**A955-4**
Methanol	Optima LC/MS	500mL	Amber Glass	**A456-500**
Methanol	Optima LC/MS	1L	Amber Glass	**A456-1**
Methanol	Optima LC/MS	2.5L	Amber Glass	**A456-212**
Methanol	Optima LC/MS	4L	Amber Glass	**A456-4**
2-Propanol	Optima LC/MS	500mL	Amber Glass	**A461-500**
2-Propanol	Optima LC/MS	1L	Amber Glass	**A461-1**
2-Propanol	Optima LC/MS	2.5L	Amber Glass	**A461-212**
2-Propanol	Optima LC/MS	4L	Amber Glass	**A461-4**
Water	Optima LC/MS	500mL	Amber Glass	**W6-500**
Water	Optima LC/MS	1L	Amber Glass	**W6-1**
Water	Optima LC/MS	2.5L	Amber Glass	**W6-212**
Water	Optima LC/MS	4L	Amber Glass	**W6-4**
BLENDS				
0.1% FA in Water	Optima LC/MS	500mL	Amber Glass	**LS118-500**
0.1% FA in Water	Optima LC/MS	1L	Amber Glass	**LS118-1**
0.1% FA in Water	Optima LC/MS	2.5L	Amber Glass	**LS118-212**
0.1% FA in Water	Optima LC/MS	4L	Amber Glass	**LS118-4**
0.1% TFA in Water	Optima LC/MS	500mL	Amber Glass	**LS119-500**
0.1% TFA in Water	Optima LC/MS	1L	Amber Glass	**LS119-1**
0.1% TFA in Water	Optima LC/MS	2.5L	Amber Glass	**LS119-212**
0.1% TFA in Water	Optima LC/MS	4L	Amber Glass	**LS119-4**
0.1% FA in Acetonitrile	Optima LC/MS	500mL	Amber Glass	**LS120-500**
0.1% FA in Acetonitrile	Optima LC/MS	1L	Amber Glass	**LS120-1**
0.1% FA in Acetonitrile	Optima LC/MS	2.5L	Amber Glass	**LS120-212**
0.1% FA in Acetonitrile	Optima LC/MS	4L	Amber Glass	**LS120-4**
0.1% TFA in Acetonitrile	Optima LC/MS	500mL	Amber Glass	**LS121-500**
0.1% TFA in Acetonitrile	Optima LC/MS	1L	Amber Glass	**LS121-1**
0.1% TFA in Acetonitrile	Optima LC/MS	2.5L	Amber Glass	**LS121-212**
0.1% TFA in Acetonitrile	Optima LC/MS	4L	Amber Glass	**LS121-4**
ADDITIVES				
Formic Acid	Optima LC/MS	50mL	*Poly* Bottle	**A117-50**
Formic Acid	Optima LC/MS	10x1mL	Ampules	**A117-10X1AMP**
Formic Acid	Optima LC/MS	1mL	Ampule	**A117-1AMP**
Formic Acid	Optima LC/MS	0.5mL	Ampule	**A117-05AMP**
Formic Acid	Optima LC/MS	2mL	Ampule	**A117-2AMP**
Trifluoroacetic Acid	Optima LC/MS	50mL	Amber Glass	**A116-50**
Trifluoroacetic Acid	Optima LC/MS	10x1mL	Ampules	**A116-10X1AMP**
Trifluoroacetic Acid	Optima LC/MS	1mL	Ampule	**A116-1AMP**
Trifluoroacetic Acid	Optima LC/MS	0.5mL	Ampule	**A116-05AMP**
Trifluoroacetic Acid	Optima LC/MS	2mL	Ampule	**A116-2AMP**
Acetic Acid	Optima LC/MS	50mL	Poly Bottle	**A113-50**
Acetic Acid	Optima LC/MS	1mL	Ampule	**A113-1AMP**
Acetic Acid	Optima LC/MS	10 x 1mL	Ampules	**A113-10X1AMP**
Ammonium Acetate	Optima LC/MS	50g	Amber Glass	**A114-50**
Ammonium Formate	Optima LC/MS	50g	Amber Glass	**A115-50**

High-Performance Liquid Chromatography (HPLC)

HPLC is a technique that can separate a mixture of compounds and is used in biochemistry and analytical chemistry to identify, quantify and purify the individual components of the mixture. Fisher Chemical* Optima* Grade Solvents meet extremely high purity (ppm) levels. They are manufactured for use when contaminant-free performance is essential — HPLC, GC, plasma/ICP, spectrophotometry, environmental testing and other analytical applications.

Key Features:

- Contaminant-free to ppb and ppm levels
- Supplied in specially cleaned bottles
- Certificate of Analysis provided with each shipment

UltiMate 3000 LC System

Provides excellent chromatographic performance while maintaining easy and reliable operation. Select from a wide variety of systems for applications at all scales.

For more product information, go to:
www.thermoscientific.com/chromatography

Product Description	Grade	Size	Packaging	Cat. No.
OPTIMA				
Acetone	Optima	1L	Amber Glass	**A929-1**
Acetone	Optima	4L	Amber Glass	**A929-4**
Acetone	Optima	4L	Glass/Safe-Cote*	**A929SK-4**
Acetonitrile	Optima	1L	Amber Glass	**A996-1**
Acetonitrile	Optima	4L	Amber Glass	**A996-4**
Acetonitrile	Optima	4L	Amber Glass/Safe-Cote	**A996SK4**
Chloroform (Approx. 50ppm Amylene as Preservative)	Optima	4L	Amber Glass	**C297-4**
Ethyl Acetate	Optima	4L	Amber Glass	**E196-4**
Ethyl Acetate	Optima	4L	Safe-Cote	**E196SK-4**
Hexanes	Optima	1L	Amber Glass	**H303-1**
Hexanes	Optima	4L	Amber Glass	**H303-4**
Hexanes	Optima	4L	Amber Glass/Safe-Cote	**H303SK-4**
n-Hexane,95%,	Optima	1L	Amber Glass	**H306-1**
n-Hexane,95%,	Optima	4L	Amber Glass	**H306-4**
n-Hexane,95%,	Optima	4L	Amber Glass/Safe-Cote	**H306SK-4**
Methanol	Optima	1L	Amber Glass	**A454-1**
Methanol	Optima	1L	Amber Glass	**A454-4**
Methanol	Optima	4L	Amber Glass/Safe-Cote	**A454SK-4**
Methylene Chloride	Optima	2.5L	Amber Glass	**D151-1**
Methylene Chloride	Optima	4L	Amber Glass	**D151-4**
Methylene Chloride	Optima	4L	Amber Glass/Safe-Cote	**D151SK-4**
Petroleum Ether	Optima	4L	Amber Glass	**E120-4**
Petroleum Ether	Optima	4L	Amber Glass/Safe-Cote	**E120SK-4**
2-Propanol	Optima	4L	Amber Glass	**A464-4**
2-Propanol	Optima	4L	Amber Glass/Safe-Cote	**A464SK-4**
Tetrahydrofuran	Optima	1L	Amber Glass	**T427-1**
Tetrahydrofuran	Optima	4L	Amber Glass/Safe-Cote	**T427SK-4**
Tetrahydrofuran	Optima	4L	Amber Glass/Safe-Cote	**T427SK-4**
Toluene	Optima	4L	Amber Glass	**T291-4**
Toluene	Optima	4L	Amber Glass/Safe-Cote	**T291SK-4**
Water	Optima	4L	Amber Glass	**W7-4**
Water	Optima	4L	Amber Glass/Safe-Cote	**W7SK-4**
BLENDS				
Acetonitrile with 0.01% Trifluoroacetic Acid (v/v)	HPLC	4L	Amber Glass	**HB98104**
Acetonitrile with 0.035% Formic Acid (v/v)	HPLC	4L	Amber Glass	**HB98214**
Acetonitrile with 0.035% Trifluoroacetic Acid (v/v)	HPLC	4L	Amber Glass	**HB98114**
Acetonitrile with 0.05% Formic Acid (v/v)	HPLC	4L	Amber Glass	**HB98224**
Acetonitrile with 0.05% Trifluoroacetic Acid (v/v)	HPLC	4L	Amber Glass	**HB98124**
Acetonitrile with 0.1% Formic Acid (v/v)	HPLC	4L	Amber Glass	**HB98234**
Acetonitrile with 0.1% Formic Acid and 0.01% Trifluoroacetic Acid (v/v)	HPLC	4L	Amber Glass	**HB98344**
Acetonitrile with 0.1% Trifluoroacetic Acid (v/v)	HPLC	4L	Amber Glass	**HB98134**

Gas Chromatography (GC)

Gas Chromatography is a common type of technique used to separate and analyze compounds that can be vaporized without decomposition. GC *Resolv** Grade Solvents are manufactured for GC applications, and are free of contaminants to the ppb level. Chromatogram on GC *Resolv* Grade Solvents is available on request. Pesticide Grade solvents are for use in the analysis of pesticide residue on GC with electron capture detector (ECD).

Product Description	Grade	Size	Packaging	Cat. No.
GC *RESOLV*/ PESTICIDE				
Acetone	GC *Resolv*	4L	Amber Glass	**A928-4**
n-Hexane	GC *Resolv*	4L	Amber Glass	**H307-4**
Methanol	GC *Resolv*	4L	Amber Glass	**A457-4**
Methylene Chloride	GC *Resolv*	4L	Amber Glass	**D154-4**
Acetone	Pesticide	4L	Amber Glass	**A40-4**
Chloroform (With Amylene Preservative)	Pesticide	4L	Amber Glass	**C603-4**
Cyclohexane	Pesticide	4L	Amber Glass	**C553-4**
Ethyl Acetate	Pesticide	4L	Amber Glass	**E191-4**
Ethyl Ether	Pesticide	4L	Amber Glass	**E199-4**
Hexanes	Pesticide	4L	Amber Glass	**H300-4**
Isooctane	Pesticide	4L	Amber Glass	**O297-4**
Methanol	Pesticide	4L	Amber Glass	**A450-4**
Methylene Chloride	Pesticide	4L	Amber Glass	**D142-4**
Pentane	Pesticide	4L	Amber Glass	**P400-4**
Petroleum Ether	Pesticide	4L	Amber Glass	**P480-4**
2-Propanol	Pesticide	4L	Amber Glass	**A519-4**

TRACE GC Ultra Gas Chromatographs

With the most complete range of proprietary inlets, sensitive detection systems, smart accessories, and ancillary devices, the Ultra platform features unique technologies that raise the standards of speed, sensitivity and separation in gas chromatography.

For more product information, go to:
www.thermoscientific.com/chromatography

ACS

ACS Grade Solvents meet or exceed the specifications set by the American Chemical Society. ACS Grade Solvents are suitable for analytical applications requiring tight specifications.

There are two grades among this classification:

1. **Certified ACS Plus Grade** Solvents meet or exceed the latest specifications of the ACS and are suitable for applications with tighter metal specifications
2. **Certified ACS Grade** Solvents meet or exceed the latest ACS Specifications

Product Description	Grade	Size	Packaging	Cat. No.
ACS				
1,2-Dichloroethane	Certified ACS	500mL	Amber Glass	**E175-500**
1,2-Dichloroethane	Certified ACS	4L	Amber Glass	**E175-4**
1,2-Dichloroethane	Certified ACS	20L	Steel Pail	**E175-20**
1-Butanol	Certified ACS	500mL	Amber Glass	**A399-500**
1-Butanol	Certified ACS	1L	Amber Glass	**A399-1**
1-Butanol	Certified ACS	4L	Amber Glass	**A399-4**
1-Butanol	Certified ACS	4L	SafeTin	**A399S-4**
2-Propanol	Certified ACS Plus	500mL	Amber Glass	**A416-500**
2-Propanol	Certified ACS Plus	1L	Amber Glass	**A416-1**
2-Propanol	Certified ACS Plus	4L	Amber Glass	**A416-4**
2-Propanol	Certified ACS Plus	4L	Poly Bottle	**A416P-4**
2-Propanol	Certified ACS Plus	4L	SafeTin	**A416S-4**
2-Propanol	Certified ACS Plus	4L	Amber Glass/Safe-Cote*	**A416SK-4**
Acetone	Certified ACS	500mL	Amber Glass	**A18-500**
Acetone	Certified ACS	1L	Amber Glass	**A18-1**
Acetone	Certified ACS	4L	Amber Glass	**A18-4**
Acetone	Certified ACS	4L	Poly Bottle	**A18P-4**
Acetone	Certified ACS	4L	SafeTin	**A18S-4**
Acetone	Certified ACS	4L	Amber Glass/Safe-Cote	**A18SK-4**
Acetonitrile	Certified ACS	1L	Amber Glass	**A21-1**
Acetonitrile	Certified ACS	4L	Amber Glass	**A21-4**
Chloroform (Approx. 0.75% Ethanol as Preservative)	Certified ACS	500mL	Amber Glass	**C298-500**
Chloroform (Approx. 0.75% Ethanol as Preservative)	Certified ACS	1L	Amber Glass	**C298-1**
Chloroform (Approx. 0.75% Ethanol as Preservative)	Certified ACS	4L	Amber Glass	**C298-4**
Chloroform (Approx. 0.75% Ethanol as Preservative)	Certified ACS	4L	SafeTin	**C298S-4**
Chloroform (Approx. 0.75% Ethanol as Preservative)	Certified ACS	4L	Amber Glass/Safe-Cote	**C298SK-4**
Ethyl Acetate	Certified ACS	500mL	Amber Glass	**E145-500**
Ethyl Acetate	Certified ACS	1L	Amber Glass	**E145-1**
Ethyl Acetate	Certified ACS	4L	Amber Glass	**E145-4**
Ethyl Acetate	Certified ACS	4L	SafeTin	**E145S-4**
Ethyl Acetate	Certified ACS	4L	Amber Glass/Safe-Cote	**E145SK-4**
Hexanes	Certified ACS	500mL	Amber Glass	**H292-500**
Hexanes	Certified ACS	1L	Amber Glass	**H292-1**
Hexanes	Certified ACS	4L	Amber Glass	**H292-4**
Hexanes	Certified ACS	4L	Amber Glass/Safe-Cote	**H292SK-4**

ACS (continued)

Product Description	Grade	Size	Packaging	Cat. No.
ACS				
Methanol	Certified ACS	500mL	Amber Glass	**A412-500**
Methanol	Certified ACS	1L	Amber Glass	**A412-1**
Methanol	Certified ACS	4L	Amber Glass	**A412-4**
Methanol	Certified ACS	4L	Poly Bottle	**A412P-4**
Methanol	Certified ACS	4L	Amber Glass/Safe-Cote*	**A412SK-4**
Methylene Chloride (Stabilized)	Certified ACS	500mL	Amber Glass	**D37-500**
Methylene Chloride (Stabilized)	Certified ACS	1L	Amber Glass	**D37-1**
Methylene Chloride (Stabilized)	Certified ACS	4L	Amber Glass	**D37-4**
Methylene Chloride (Stabilized)	Certified ACS	4L	Amber Glass/Safe-Cote	**D37SK-4**
N,N-Dimethylformamide	Certified ACS	500mL	Amber Glass	**D119-500**
N,N-Dimethylformamide	Certified ACS	1L	Amber Glass	**D119-1**
N,N-Dimethylformamide	Certified ACS	4L	Amber Glass	**D119-4**
N,N-Dimethylformamide	Certified ACS	4L	SafeTin	**D119S-4**
Toluene	Certified ACS	500mL	Amber Glass	**T324-500**
Toluene	Certified ACS	1L	Amber Glass	**T324-1**
Toluene	Certified ACS	4L	Amber Glass	**T324-4**
Toluene	Certified ACS	4L	SafeTin	**T324S-4**
Toluene	Certified ACS	4L	Amber Glass/Safe-Cote	**T324SK-4**
Xylene	Certified ACS	500mL	Amber Glass	**X5-500**
Xylene	Certified ACS	1L	Amber Glass	**X5-1**
Xylene	Certified ACS	1 gal.	Poly Bottle	**X5P-1GAL**
Xylene	Certified ACS	4L	Amber Glass	**X5-4**
Xylene	Certified ACS	4L	SafeTin	**X5S-4**
Xylene	Certified ACS	4L	Amber Glass/Safe-Cote	**X5SK-4**

Certified

Certified Grade Solvents are suitable for general analytical procedures, for which the purity standard is established by Fisher Scientific. Purity is guaranteed to meet published maximum limits of impurities.

Product Description	Grade	Size	Packaging	Cat. No.
CERTIFIED				
Tetrahydrofuran	Certified	500mL	Amber Glass	**T397-500**
Tetrahydrofuran	Certified	1L	Amber Glass	**T397-1**
Tetrahydrofuran	Certified	4L	Amber Glass	**T397-4**
Tetrahydrofuran	Certified	4L	Amber Glass/Safe-Cote	**T397SK-4**

Acids

The Fisher Chemical* portfolio of high-purity acids and bases comprises more than 400 products suited to a wide range of laboratory applications, including trace element analysis in sample preparation, HPLC and spectrophotometry.

Manufactured in ISO 9001:2008-certified facilities, all Fisher Chemical acids and bases undergo rigorous quality assurance and testing measures that ensure excellent lot-to-lot and bottle-to-bottle consistency.

Select the grade that is best suited to your application:

Fisher Chemical Acid Purity Grades

Grade	Application	Features
Optima*	HPLC, GC, AA, plasma/ICP/ICP-MS, spectrophotometry, pesticide residue analysis	Acids of extremely high purity. Lowest metal content of any commercially available acid. Acids are analyzed for 65 metals by ICP/MS; impurity levels in ppt. Packaged in specially manufactured and cleaned PFA and FEP fluoropolymer bottles (Optima Ammonium Hydroxide is packaged in specially leached HDPE bottles.)
TraceMetal*	Primarily used in digestion of samples prior to instrument (ICP) analysis	Acids manufactured under proprietary distillation to achieve low metal contamination measurable in ppm to ppb range. Each lot is analyzed for more than 55 metals by ICP/MS. Now packaged in poly bottles for safer and easier handling in the laboratory and limited or no breakage during transportation.
HPLC	HPLC and spectrophotometry	Specifically formulated for use in liquid chromatography, Fisher Chemical HPLC Grade Acids ensure minimum baseline drift and maximum retention reproducibility. Meet all ACS specifications.
Certified ACS Plus	Analytical applications with tighter metal specifications	Acids that, in addition to meeting or exceeding the latest specifications of the ACS, are analyzed for more than 16 metals.
Certified ACS	Analytical applications requiring tight specifications	Reagent chemicals that meet or exceed the latest ACS specifications. Actual lot analysis on label.
USP/NF/FCC/EP/BP/JP	Food and drug laboratories, biological testing	Solvents meet or surpass specifications of the United Stated Pharmacopeia (USP), the National Formulary (NF), the Food Chemicals Codex (FCC), the European Pharmacopeia (EP), the British Pharmacopeia (BP) and/or the Japanese Pharmacopeia (JP).
Reagent, Laboratory and Technical	Manufacturing and general laboratory use	Chemicals of reasonable quality and purity for use in procedures where no official standards are required.

Evolution 600 UV-Vis Spectrophotometer

Thermo Scientific Evolution 600 incorporates a high-performance optical design, versatile VISION* software packages, and the highest quality accessories for the most demanding materials science and research applications.

For more product information, go to:
www.thermoscientific.com/uv-vis

High-Purity

Optima* Grade Acids offer the lowest metal content and the highest purity. They are the perfect choice for environmental testing, plasma analysis, electronic research and other exacting procedures requiring the utmost purity, precision and accuracy.

Key Features:

- Analyzed for up to 65 metals to ppt level by ICP-MS to provide unequaled purity (Certificate of Analysis supplied with each bottle)
- Packaged in specially manufactured and cleaned PFA and FEP fluoropolymer bottles (Optima Ammonium Hydroxide is packaged in specially leached HDPE bottles)
- Produced and packaged in Class 100 cleanroom environment to ensure maximum purity
- Established product lines provide excellent lot-to-lot consistency for reproducible results

Applications: HPLC, GC, plasma/ICP, spectrophotometry, pesticide residue analysis

Product Description	Grade	Size	Packaging	Cat. No.
OPTIMA ACIDS				
Acetic Acid, Glacial	Optima	250mL	PFA bottle	**A465250**
Acetic Acid, Glacial	Optima	500mL	PFA bottle	**A465500**
Acetic Acid, Glacial	Optima	1L	PFA bottle	**A4651**
Ammonium Hydroxide	Optima	250mL	PFA bottle	**A470250**
Ammonium Hydroxide	Optima	500mL	PFA bottle	**A470500**
Ammonium Hydroxide	Optima	1L	PFA bottle	**A4701**
Hydrobromic Acid	Optima	1L	PFA bottle	**A4711**
Hydrobromic Acid	Optima	2L	FEP bottle	**A4712**
Hydrobromic Acid	Optima	250mL	PFA bottle	**A471250**
Hydrobromic Acid	Optima	500mL	PFA bottle	**A471500**
Hydrochloric Acid	Optima	1L	PFA bottle	**A4661**
Hydrochloric Acid	Optima	2L	FEP bottle	**A4662**
Hydrochloric Acid	Optima	250mL	PFA bottle	**A466250**
Hydrochloric Acid	Optima	500mL	PFA bottle	**A466500**
Hydrofluoric Acid	Optima	1L	PFA bottle	**A4631**
Hydrofluoric Acid	Optima	2L	FEP bottle	**A4632**
Hydrofluoric Acid	Optima	250mL	PFA bottle	**A463250**
Hydrofluoric Acid	Optima	500mL	PFA bottle	**A463500**
Hydrogen Peroxide	Optima	500mL	FEP bottle	**P170500**
Nitric Acid	Optima	1L	PFA bottle	**A4671**
Nitric Acid	Optima	2L	FEP bottle	**A4672**
Nitric Acid	Optima	250mL	PFA bottle	**A467250**†
Nitric Acid	Optima	500mL	PFA bottle	**A467500**
Perchloric Acid	Optima	1L	PFA bottle	**A4691**
Perchloric Acid	Optima	250mL	PFA bottle	**A469250**
Perchloric Acid	Optima	500mL	PFA bottle	**A469500**
Sulfuric Acid	Optima	2L	FEP bottle	**A4682**
Sulfuric Acid	Optima	250mL	PFA bottle	**A468250**
Sulfuric Acid	Optima	500mL	PFA bottle	**A468500**
Sulfuric Acid	Optima	1L	PFA bottle	**A4681**

†*Products might not be available in all regions. Contact your local sales representative for details.*

XSERIES 2 ICP-MS

The Thermo Scientific* XSERIES 2 ICP-MS offers outstanding productivity in a quadrupole ICP-MS for both routine and high performance analytical work.

For more product information, go to:
www.thermoscientific.com/ms

iCAP 6500 ICP Spectrometer

Thermo Scientific* iCAP 6500 ICP Spectrometer is small in size, yet big on performance, offering the best detection capability of any optical ICP, with enhanced productivity and the optimum in application flexibility.

For more product information, go to: **www.thermoscientific.com/ms**

TraceMetal* Analysis

TraceMetal Grade Acids are used primarily in digestion of samples prior to instrument (ICP) analysis. Each lot is analyzed for more than 55 metals by ECP-MS. Proprietary distillation achieves metal concentrations in the sub-ppb range.

Selected Fisher Chemical* TraceMetal Grade Acids and Bases are now available in a *poly* bottle. These bottles consist of a new high-density polyethylene made with proprietary resin that provides up to 80% less metallic extractables compared to glass. This new packaging material for TraceMetal Acids and Bases provides more convenience and stability during transport, plus increased resistance to breakage compared to conventional glass packaging.

Packaging Advantages

- Poly bottles provide reduced weight for safer and easier handling in the laboratory and limited or no breakage during transportation
- FisherLOCK* tamper evidence cap for chemical safety and drip lip pour feature for safer pouring in the laboratory
- Fully recyclable package and poly bottle for reduced waste disposable
- Poly bottles take up less space than glass bottles, providing better chemical storage space utilization in the laboratory
- With the poly bottle, there is no longer a need to remove the PVC coating on glass to allow for disposal in landfills or for recycling glass

Product Description	Grade	Size	Packaging	Cat. No.
TraceMetal				
Acetic Acid, Glacial	TraceMetal	2.5L	Poly Bottle	**A507P212**
Acetic Acid, Glacial	TraceMetal	500mL	Poly Bottle	**A507P500**
Ammonium Hydroxide	TraceMetal	500mL	Poly Bottle	**A512P500**
Hydrochloric Acid	TraceMetal	2.5L	Poly Bottle	**A508P212**
Hydrochloric Acid	TraceMetal	500mL	Poly Bottle	**A508500**
Hydrofluoric Acid	TraceMetal	4L	HDPE Bottle	**A5134**
Hydrofluoric Acid	TraceMetal	500mL	LDPE Bottle	**A513500**
Nitric Acid	TraceMetal	2.5L	Poly Bottle	**A509P212**
Nitric Acid	TraceMetal	500mL	Poly Bottle	**A509P500**
Perchloric Acid	TraceMetal	2.5L	Poly Bottle	**A511P212**
Perchloric Acid	TraceMetal	500mL	Poly Bottle	**A511P500**
Sulfuric Acid	TraceMetal	2.5L	Poly Bottle	**A510P212**
Sulfuric Acid	TraceMetal	500mL	Poly Bottle	**A510P500**
Water	Ultra Trace Elemental Analysis	500mL	LDPE Bottle	**W9500**
Water	Ultra Trace Elemental Analysis	1L	LDPE Bottle	**W91**
Water	Ultra Trace Elemental Analysis	2L	LDPE Bottle	**W92**

ACS

ACS Grade Acids meet or exceed the specifications set by the American Chemical Society. ACS Grade Acids are suitable for analytical applications requiring tight specifications.

There are two grades among this classification:

1. **Certified ACS Plus Grade:** Acids that, in addition to meeting or exceeding the latest specifications of the ACS, are analyzed for more than 16 metals; actual lot analysis on label
2. **Certified ACS Grade:** Acids meet or exceed the latest ACS Specifications

Product Description	Grade	Size	Packaging	Cat. No.
ACS ACIDS				
Acetic Acid, Glacial	Certified ACS	6 x 2.5L	Glass	**A38C212**†
Acetic Acid, Glacial	Certified ACS	2.5L	Safe-Cote*/Glass	**A38S212**†
Acetic Acid, Glacial	Certified ACS	2.5L	Glass	**A38212**
Acetic Acid, Glacial	Certified ACS	500mL	Glass	**A38500**
Acetic Acid, Glacial	Certified ACS	500mL	Safe-Cote/Glass	**A38S500**
Acetic Acid, Glacial	Certified ACS	2.5L	Safe-Cote/Glass	**A38SI212**
Ammonium Hydroxide	Certified ACS Plus	6 x 2.5L	Glass	**A669C212**†
Ammonium Hydroxide	Certified ACS Plus	2.5L	Glass	**A669212**
Ammonium Hydroxide	Certified ACS Plus	500mL	Safe-Cote/Glass	**A669S500**
Ammonium Hydroxide	Certified ACS Plus	2.5L	Safe-Cote/Glass	**A669S212**
Ammonium Hydroxide	Certified ACS Plus	500mL	Poly Bottle	**A669500**
Formic Acid	Certified ACS	4L	SafeTin	**A118P4**
Formic Acid	Certified ACS	500mL	Poly Bottle	**A118P500**
Formic Acid	Certified ACS	100mL	Poly Bottle	**A118P100**
Hydrochloric Acid	Certified ACS Plus	6 x 2.5L	Glass	**A144C212**†
Hydrochloric Acid	Certified ACS Plus	2.5L	Safe-Cote/Glass	**A144S212**
Hydrochloric Acid	Certified ACS Plus	500mL	Glass	**A144500**
Hydrochloric Acid	Certified ACS Plus	2.5L	Glass	**A144212**
Hydrochloric Acid	Certified ACS Plus	500mL	Safe-Cote/Glass	**A144S500**
Hydrochloric Acid	Certified ACS Plus	2.5L	Safe-Cote/Glass	**A144SI212**†
Nitric Acid	Certified ACS Plus	500mL	Glass	**A200500**†
Nitric Acid	Certified ACS Plus	500mL	Safe-Cote/Glass	**A200S500**†
Nitric Acid	Certified ACS Plus	2.5L	Safe-Cote/Glass	**A200SI212**
Nitric Acid	Certified ACS Plus	2.5L	Safe-Cote/Glass	**A200S212**
Nitric Acid	Certified ACS Plus	2.5L	Glass	**A200212**
Nitric Acid	Certified ACS Plus	6 x2.5L	Glass	**A200C212**
o-Phosphoric Acid 85%	Certified ACS	2.5L	Glass	**A242212**
o-Phosphoric Acid 85%	Certified ACS	2.5L	Safe-Cote/Glass	**A242SK212**
o-Phosphoric Acid 85%	Certified ACS	500mL	Amber Glass	**A242500**
o-Phosphoric Acid 85%	Certified ACS	4L	Amber Glass	**A2424**
o-Phosphoric Acid 85%	Certified ACS	1L	Amber Glass	**A2421**
Potassium Hydroxide	Certified ACS	500g	Poly Bottle	**P250500**
Potassium Hydroxide	Certified ACS	10kg	Poly Pail	**P25010**
Potassium Hydroxide	Certified ACS	1kg	Poly Bottle	**P2501**
Potassium Hydroxide	Certified ACS	3kg	Poly Bottle	**P2503**
Sodium Hydroxide	Certified ACS	1kg	Poly Bottle	**S3181**
Sodium Hydroxide	Certified ACS	100g	Poly Bottle	**S318100**

†*Products might not be available in all regions. Contact your local sales representative for details.*

ACS (continued)

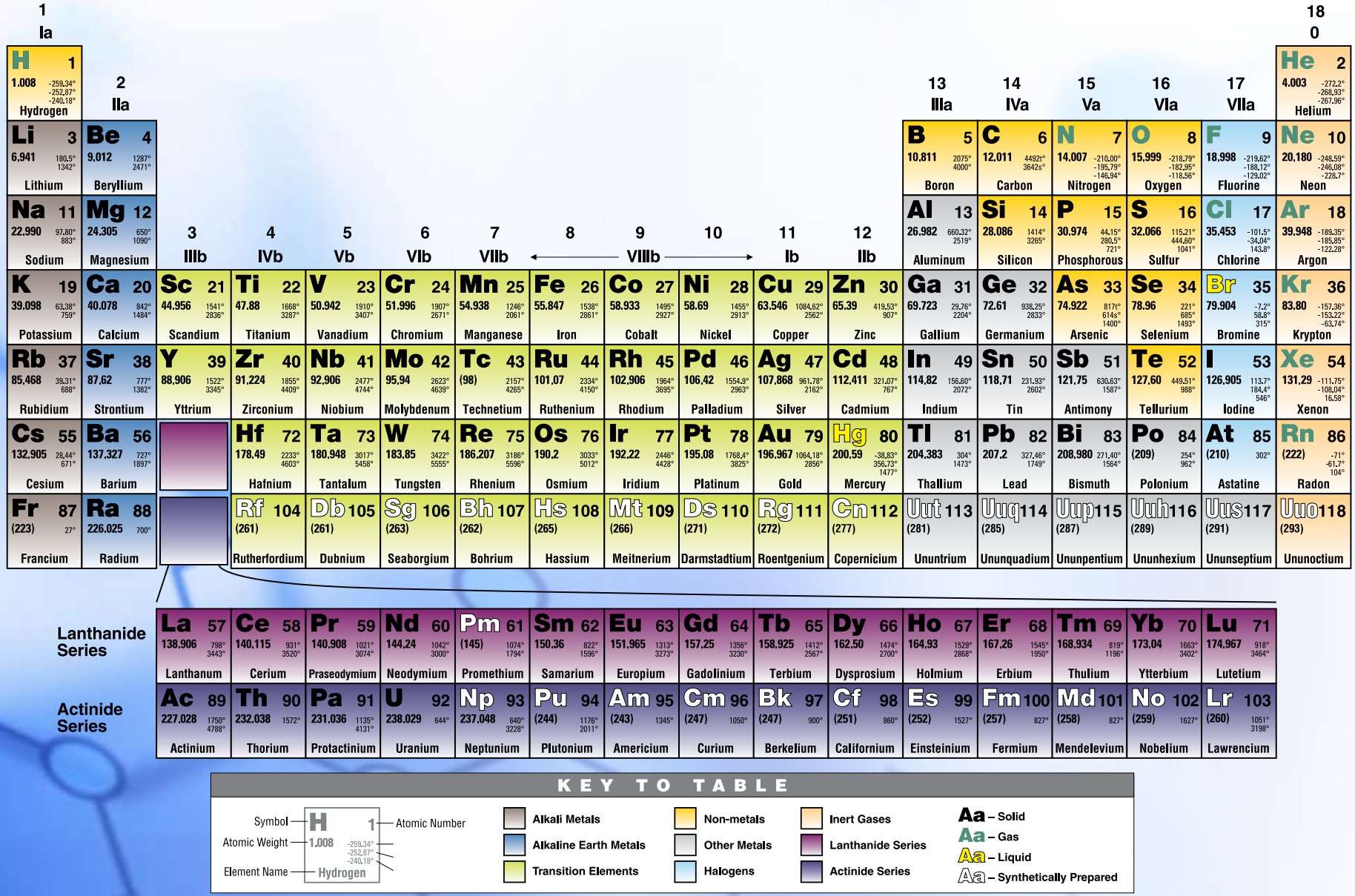
Product Description	Grade	Size	Packaging	Cat. No.
ACS ACIDS				
Sodium Hydroxide	Certified ACS	3kg	Poly Bottle	**S3183**
Sodium Hydroxide	Certified ACS	500g	Poly Bottle	**S318500**
Sodium Hydroxide	Certified ACS	5kg	Poly Pail	**S3185**
Sulfuric Acid	Certified ACS Plus	2.5L	Glass	**A300212**
Sulfuric Acid	Certified ACS Plus	500mL	Glass	**A300500**
Sulfuric Acid	Certified ACS Plus	2.5L	Safe-Cote*/Glass	**A300SI212**
Sulfuric Acid	Certified ACS Plus	500mL	Safe-Cote/Glass	**A300S500**
Sulfuric Acid	Certified ACS Plus	6 x 2.5L	Glass	**A300C212**†
Sulfuric Acid	Certified ACS Plus	2.5L	Safe-Cote/Glass	**A300S212**
Trichloroacetic Acid	Certified ACS	500g	Amber Glass	**A322500**
Trichloroacetic Acid	Certified ACS	100g	Amber Glass	**A322100**
Trichloroacetic Acid	ACS Certified	3kg	Glass	**A3223**

†*Products might not be available in all regions. Contact your local sales representative for details.*

Certified

Certified Grade Acids are suitable for general analytical procedures, for which the purity standard is established by Fisher Scientific. Purity is guaranteed to meet published maximum limits of impurities.

Product Description	Grade	Size	Packaging	Cat. No.
CERTIFIED				
Hydrochloric Acid Solution, 1N	Certified	4L	Poly Bottle	**SA484**
Hydrochloric Acid Solution, 1N	Certified	500mL	Poly Bottle	**SA48500**
Hydrochloric Acid Solution, 1N	Certified	1L	Poly Bottle	**SA481**
Hydrochloric Acid Solution, 2N	Certified	500mL	Poly Bottle	**SA431500**
Hydrochloric Acid Solution, 6N	Certified	1L	Amber Glass	**SA561**
Hydrochloric Acid Solution, 6N	Certified	4L	Amber Glass	**SA564**
Hydrochloric Acid Solution, 6N	Certified	500mL	Amber Glass	**SA56500**
Nitric Acid Concentrate	Certified	100mL	Amber Glass	**SA95**
Nitric Acid Solution, 0.1N (N/10)	Certified	1L	Amber Glass	**SA941**
Perchloric Acid Solution, N/10 (0.1N)	Certified	500mL	Amber Glass	**SP339500**
Potassium Hydroxide Solution, 0.1N (In Isopropanol)	Certified	500mL	Amber Glass	**ST110500**
Propionic Acid	Certified	500mL	Amber Glass	**A258500**
Sulfuric Acid Solution (0.02N (N/50))	Certified	4L	Poly Bottle	**SA2264**
Sulfuric Acid Solution (0.02N (N/50))Certified	Certified	1L	Poly Bottle	**SA2261**



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