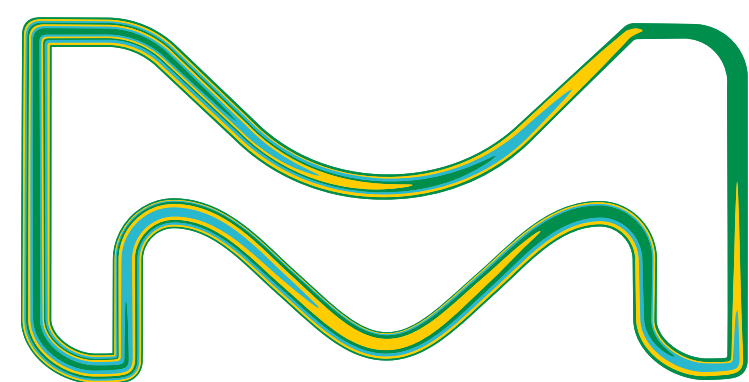


MERCK

Gas chromatography tools for your workflow



The life science business of Merck operates as
MilliporeSigma in the U.S. and Canada.

Supelco[®]
Analytical Products



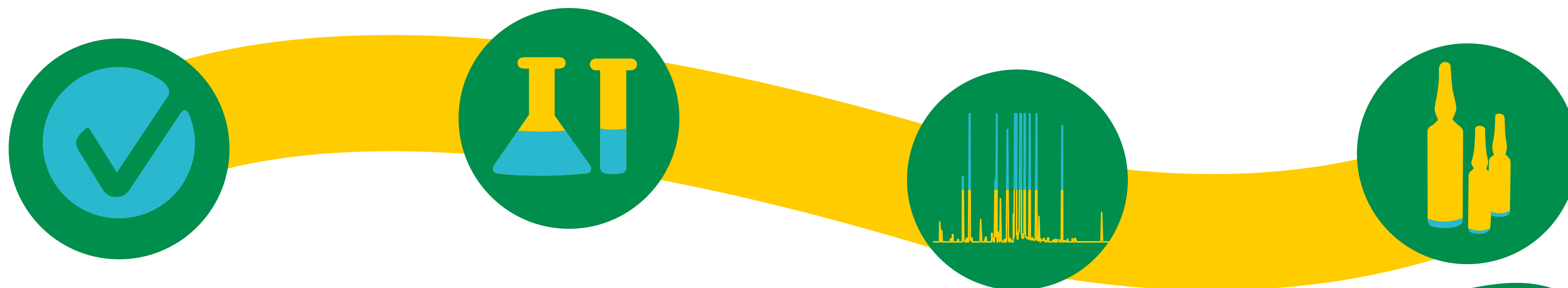
Comprehensive solutions to support the evolution of GC TECHNOLOGY

PROFICIENCY TESTING

SAMPLE PREPARATION AND COLLECTION

GC ANALYSIS

DETECTION AND CALIBRATION

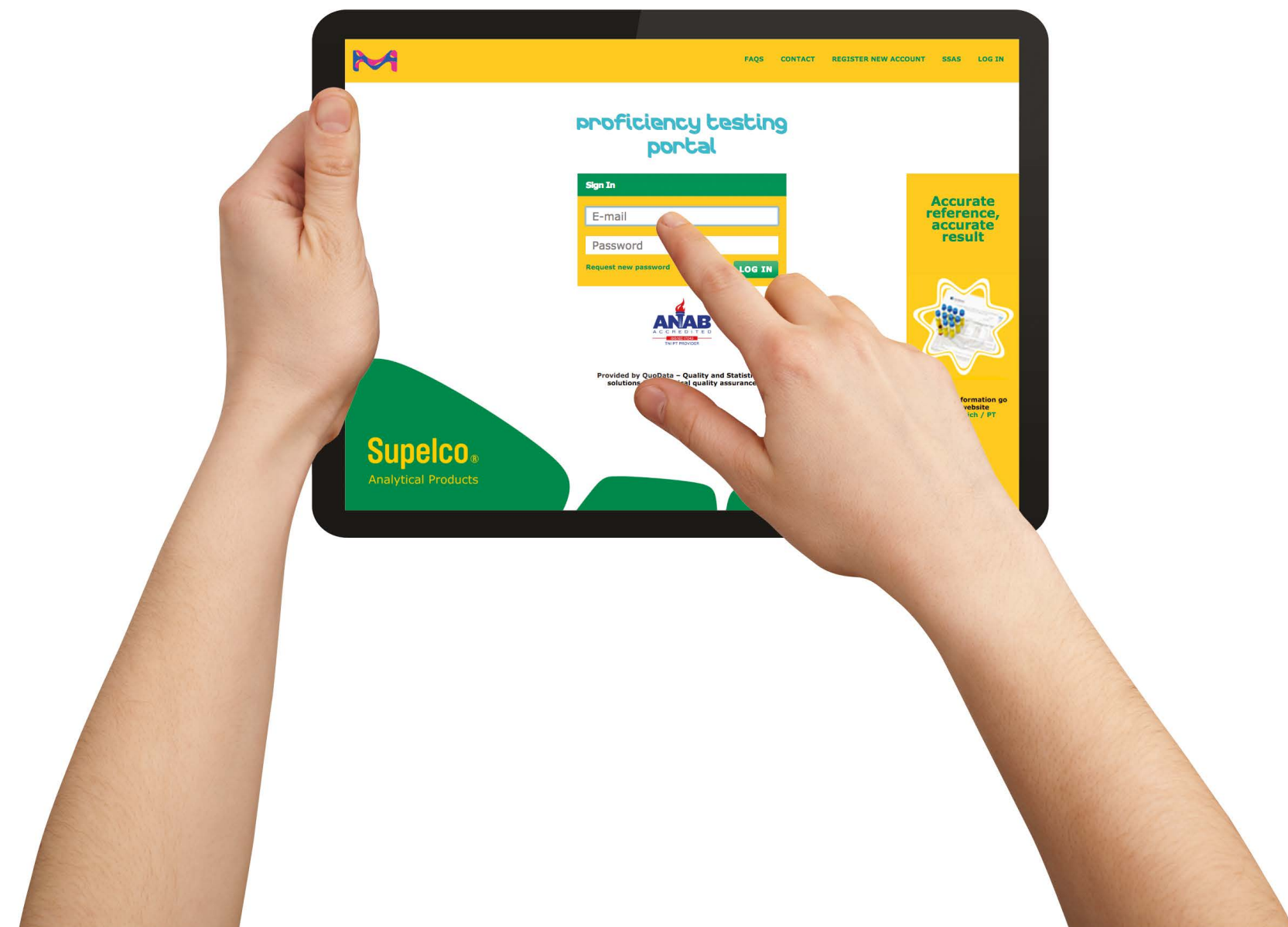


Proficiency Testing



We provide environmental, pharmaceutical and technology-based proficiency testing in several types of matrices, including neat materials, wastewater, drinking water, soil/sediment and air.

Proficiency Testing



Proficiency Testing

Our RTC brand represents over 20 years of experience and expertise in providing proficiency testing (PT) studies worldwide.

Our PT samples are manufactured to certified reference material (CRM) grade according to ISO 17043.

More than 20,000 PT samples a year are sent to over 2,500 labs worldwide.

Our quality and services allow you to work smarter, enabling us to live in a safer and healthier world

[Experience the new PT portal](#)

Accuracy.

**Sample
Preparation
& Collection**

X

SPME & SPE

Purge & Traps

Solvents

**Milli-Q®
Lab Water
Solutions**

**Derivatization
Reagents**

Air Sampling



Sample Preparation



Our sample preparation portfolio has been developed to generate representative, reproducible, and homogeneous samples for accurate gas chromatography analysis.

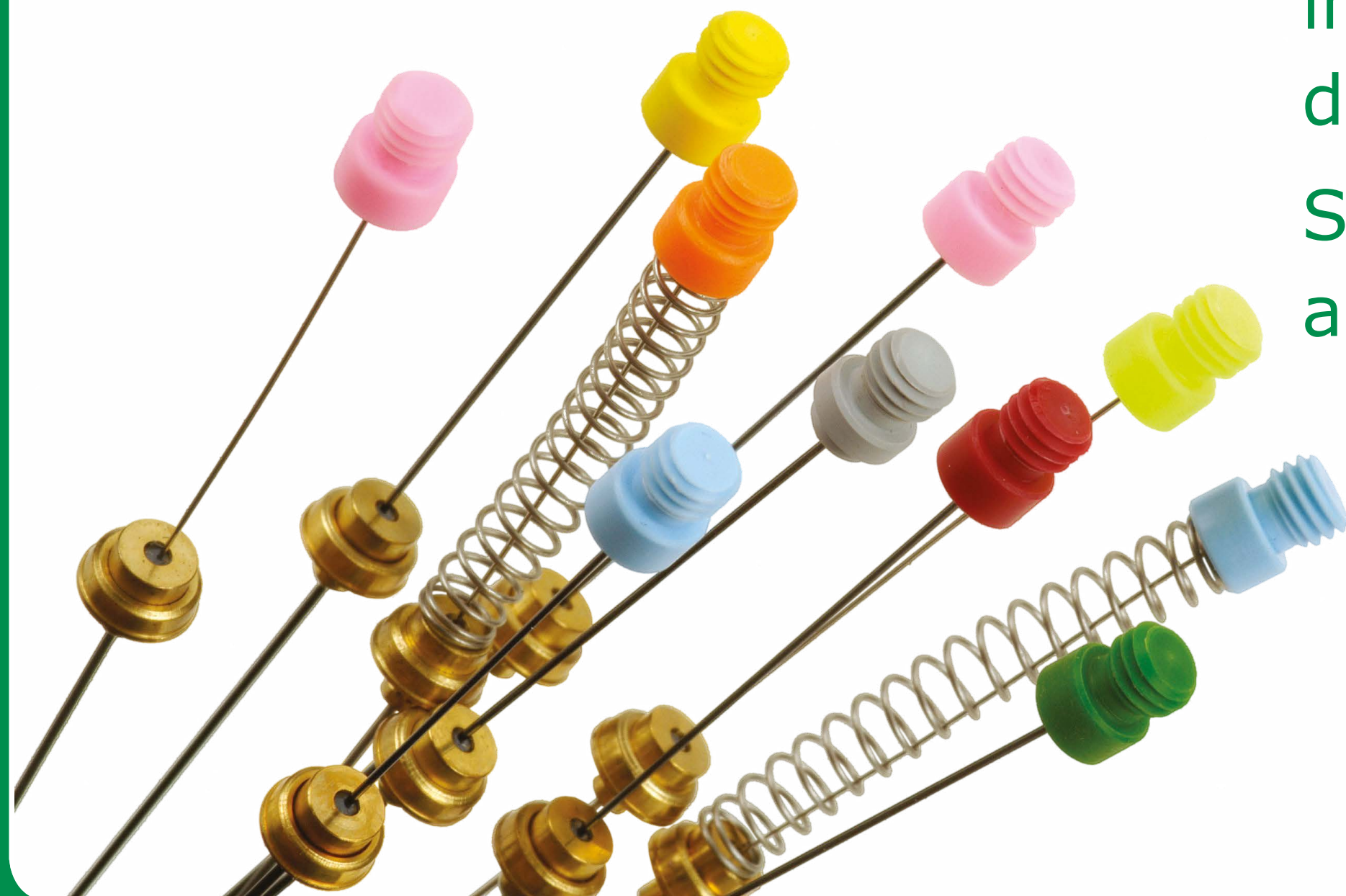
SPME

SPE

SPME

Solid phase microextraction (SPME) is an innovative, solvent-free sample prep technology that is fast, economical, and versatile. SPME uses coated fibers to extract analytes of interest; the fibers are then directly inserted into a GC for desorption and analysis.

SPME plays a vital role in the analysis of flavors & fragrances as well as environmental matrices.



[Discover SPME](#)

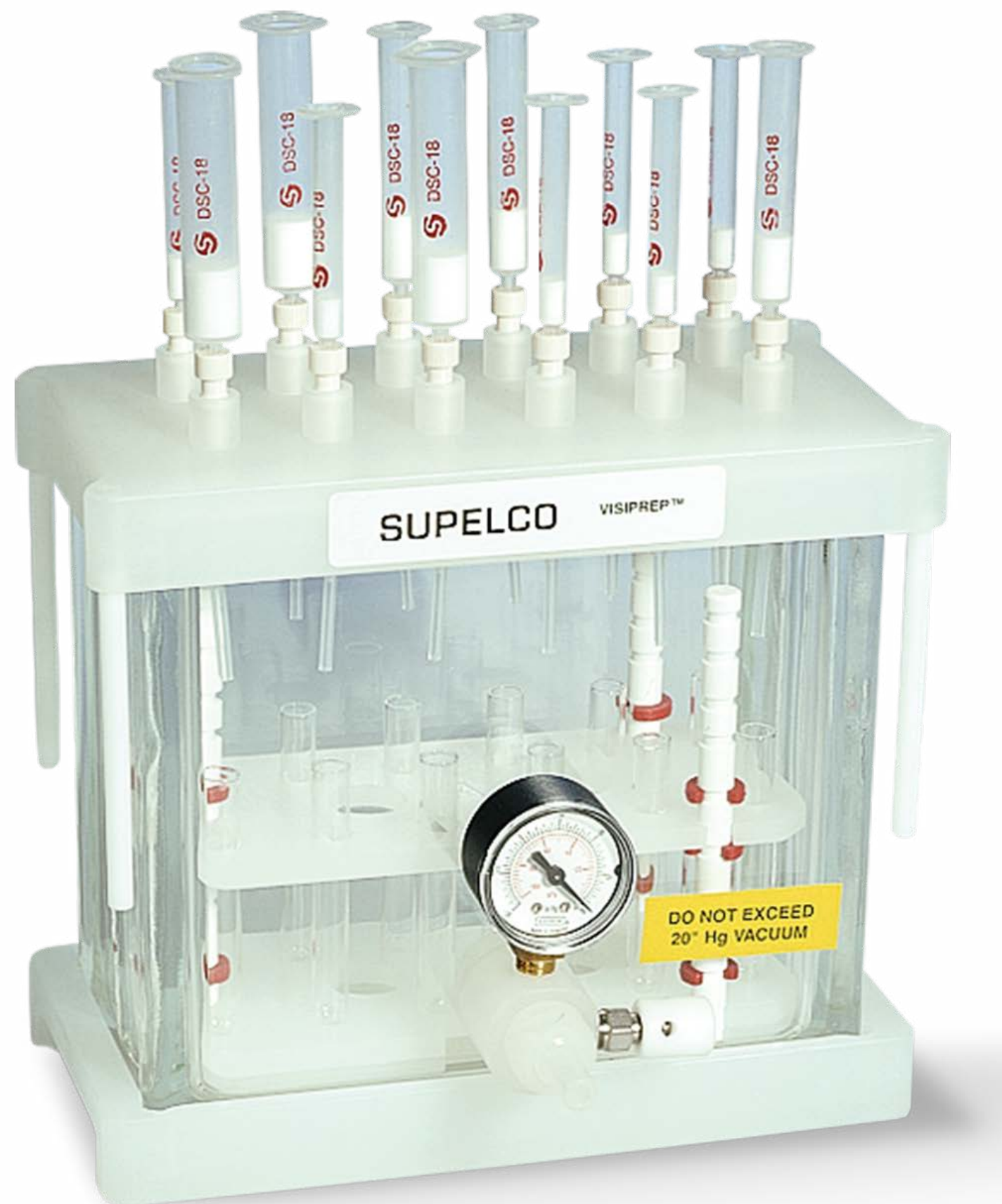
Sample Preparation



Our sample preparation portfolio has been developed to generate representative, reproducible, and homogeneous samples for accurate gas chromatography analysis.

SPME

SPE



SPE

Solid phase extraction (SPE) is a reliable and cost-effective technique for the selective isolation and concentration of a wide range of analytes and sample matrices prior to GC analysis. SPE has gained widespread acceptance as the sample preparation technique of preference for many applications, including persistent organic pollutant and pesticide analysis.

Discover SPE

Sample Preparation



Our sample preparation portfolio has been developed to generate representative, reproducible, and homogeneous samples for accurate gas chromatography analysis.

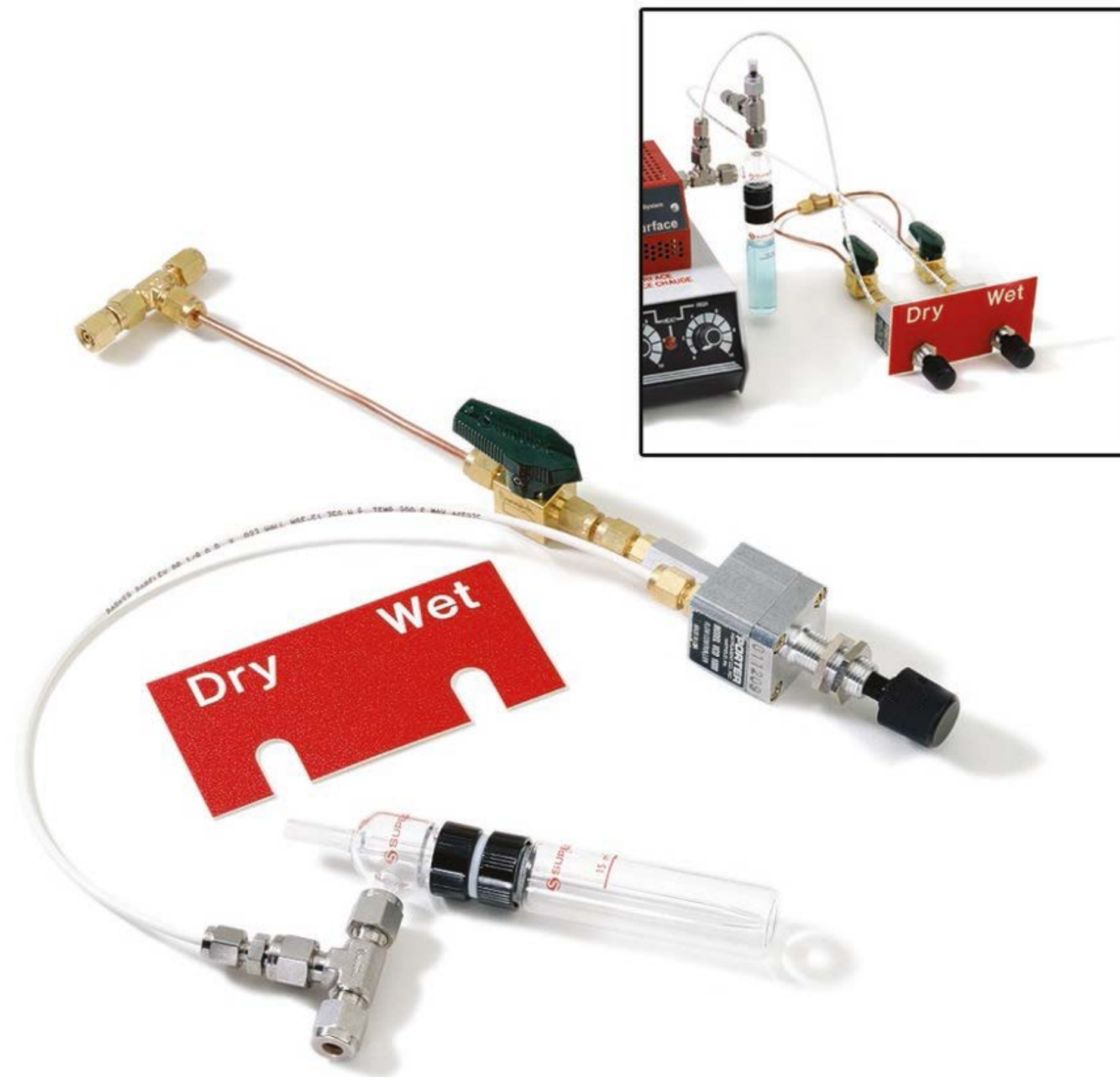
Purge & Traps

Solvents

Water Purification Systems

Derivatization Reagents

Air Sampling



Purge & Traps

The Purge and Trap technique is ideal for extracting and concentrating volatile organic compounds (VOCs) from water or soil. Purge & Trap instruments are specifically designed to deal with water vapor because both GC instruments and columns do not like water. The adsorbent filled traps (purge traps) allow the VOCs from the sample to be concentrated while managing the water vapor during the purge step or during desorb step (instrument dependent) to achieve low ppb detection limits.

[Discover Purge & Traps](#)

Sample Preparation



Our sample preparation portfolio has been developed to generate representative, reproducible, and homogeneous samples for accurate gas chromatography analysis.

Purge & Traps

Solvents

Water Purification Systems

Derivatization Reagents

Air Sampling

Solvents

SupraSolv[®] solvents are developed specially for sample preparation in gas chromatography. Ideally suited for all GC applications including sensitive detection tasks in residue and environmental analysis, SupraSolv[®] solvents offer you the security and reliability needed for today's gas chromatography applications.



Solvents for GC Sample Prep

Sample Preparation



Our sample preparation portfolio has been developed to generate representative, reproducible, and homogeneous samples for accurate gas chromatography analysis.

Purge & Traps

Solvents

Water Purification Systems

Derivatization Reagents

Air Sampling



Milli-Q® Lab Water Solutions

When preparing your samples, standards and blanks for GC analyses by Purge-and-Trap, using freshly purified ultrapure water from a **Milli-Q® IQ 7003/05/10/15** water purification system will help you obtain excellent accuracy and low background signal.

Simply attach the **VOC-Pak® Polisher** to the system's point of dispense for water ideally suited for the most demanding GC-MS analyses of volatile organic compounds.

[Discover Milli-Q® Lab Water Solutions](#)

Milli-Q®
Lab Water Solutions

Sample Preparation



Our sample preparation portfolio has been developed to generate representative, reproducible, and homogeneous samples for accurate gas chromatography analysis.

Purge & Traps

Solvents

Water Purification
Systems

Derivatization
Reagents

Air Sampling

Derivatization Reagents

We offer a comprehensive range of derivatization reagents for GC applications. The GC derivatization portfolio includes reagents for silylation, acylation, alkylation and esterification. By derivatizing functional groups on target analyte molecules, they are rendered more volatile, greatly improving overall performance in GC analysis.



[Discover our reagents](#)

Sample Preparation



Our sample preparation portfolio has been developed to generate representative, reproducible, and homogeneous samples for accurate gas chromatography analysis.

Purge & Traps

Solvents

Water Purification
Systems

Derivatization
Reagents

Air Sampling

Air Sampling

The Supelco® portfolio includes sensitive and reliable air sampling devices for a wide range of applications for solvent desorption, thermal desorption, passive and whole air sampling.

Our offering includes a wide range of solutions for sampling carbonyls, isocyanates and other VOCs.



[Air Monitoring Solutions](#)

precision.

GC Analysis

X

GC Solvents

**Headspace
GC Solvents**

GC Columns

GC Accessories

GC Gas Purification

**Standards
for GC**



GC Analysis

X

Whether you use ECD, FID, TCD, MS or another detector – our comprehensive portfolio of GC columns, solvents, standards & accessories offers a dedicated quality for your specific application and detection method.

GC Solvents

Headspace GC Solvents

GC Columns

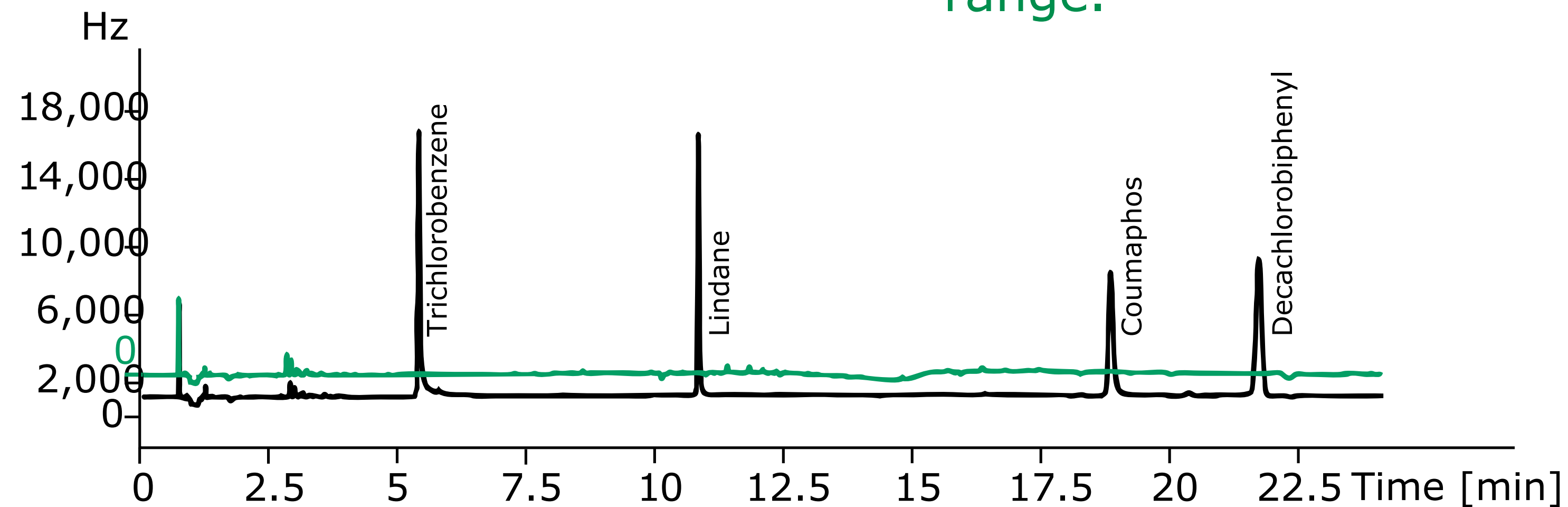
GC Accessories

GC Gas Purification

Standards for GC

GC Solvents

Our GC solvent qualities are ideal for all gas chromatography applications. These solvents are specially developed and tested for ECD, FID and MS detection to ensure a maximum signal-to-noise ratio in the largest specified retention time range.



[Find your GC Solvent](#)

GC Analysis

X

Whether you use ECD, FID, TCD, MS or another detector – our comprehensive portfolio of GC columns, solvents, standards & accessories offers a dedicated quality for your specific application and detection method.

GC Solvents

Headspace GC Solvents

GC Columns

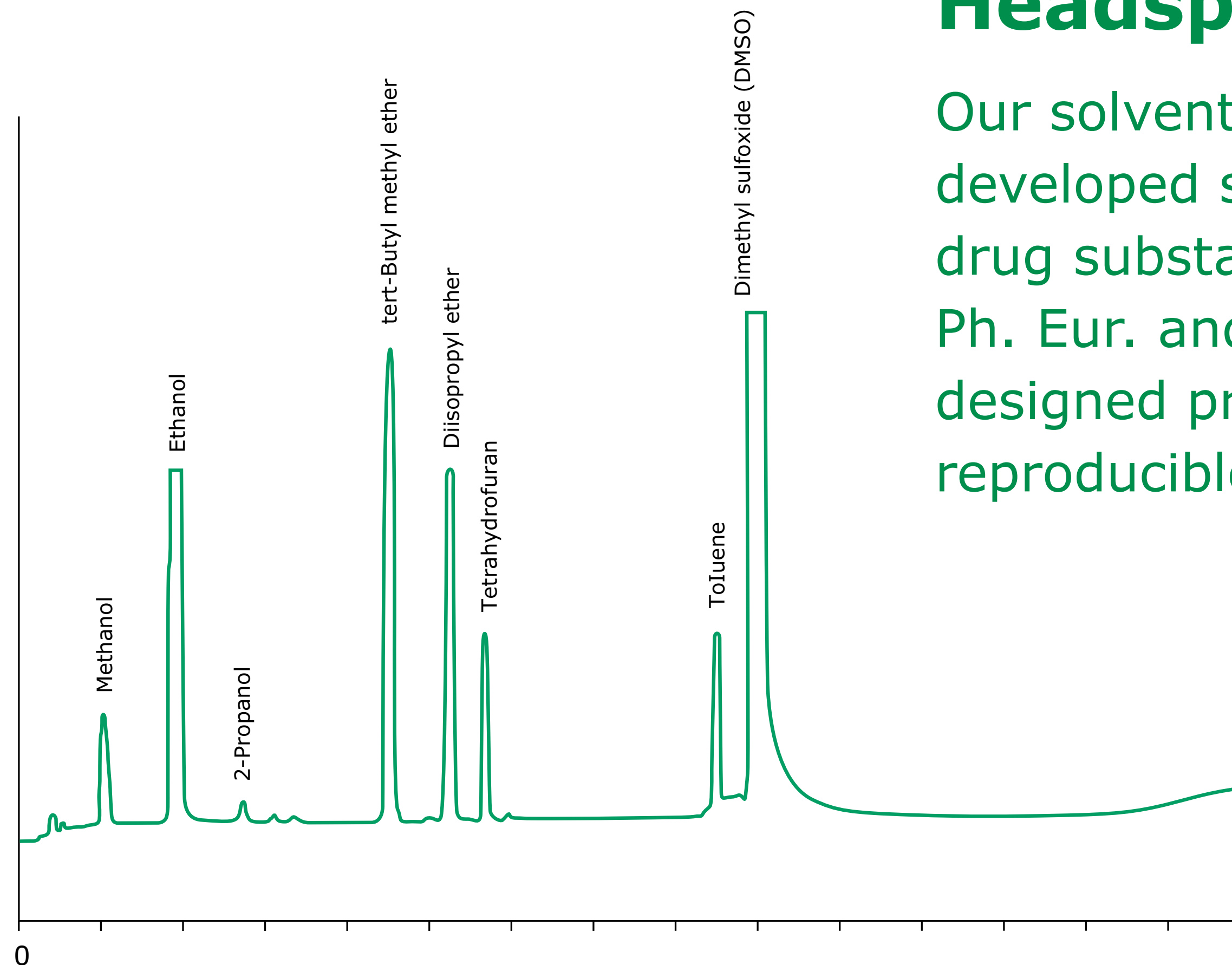
GC Accessories

GC Gas Purification

Standards for GC

Headspace GC

Our solvents for headspace gas chromatography are developed specifically for the analysis of residual solvents in drug substances, excipients, and drug products according to Ph. Eur. and USP. Their high purity is provided by specially designed production processes - for accurate, reliable and reproducible analytical results.



Headspace GC

GC Analysis

X

Whether you use ECD, FID, TCD, MS or another detector – our comprehensive portfolio of GC columns, solvents, standards & accessories offers a dedicated quality for your specific application and detection method.

GC Solvents

Headspace GC Solvents

GC Columns

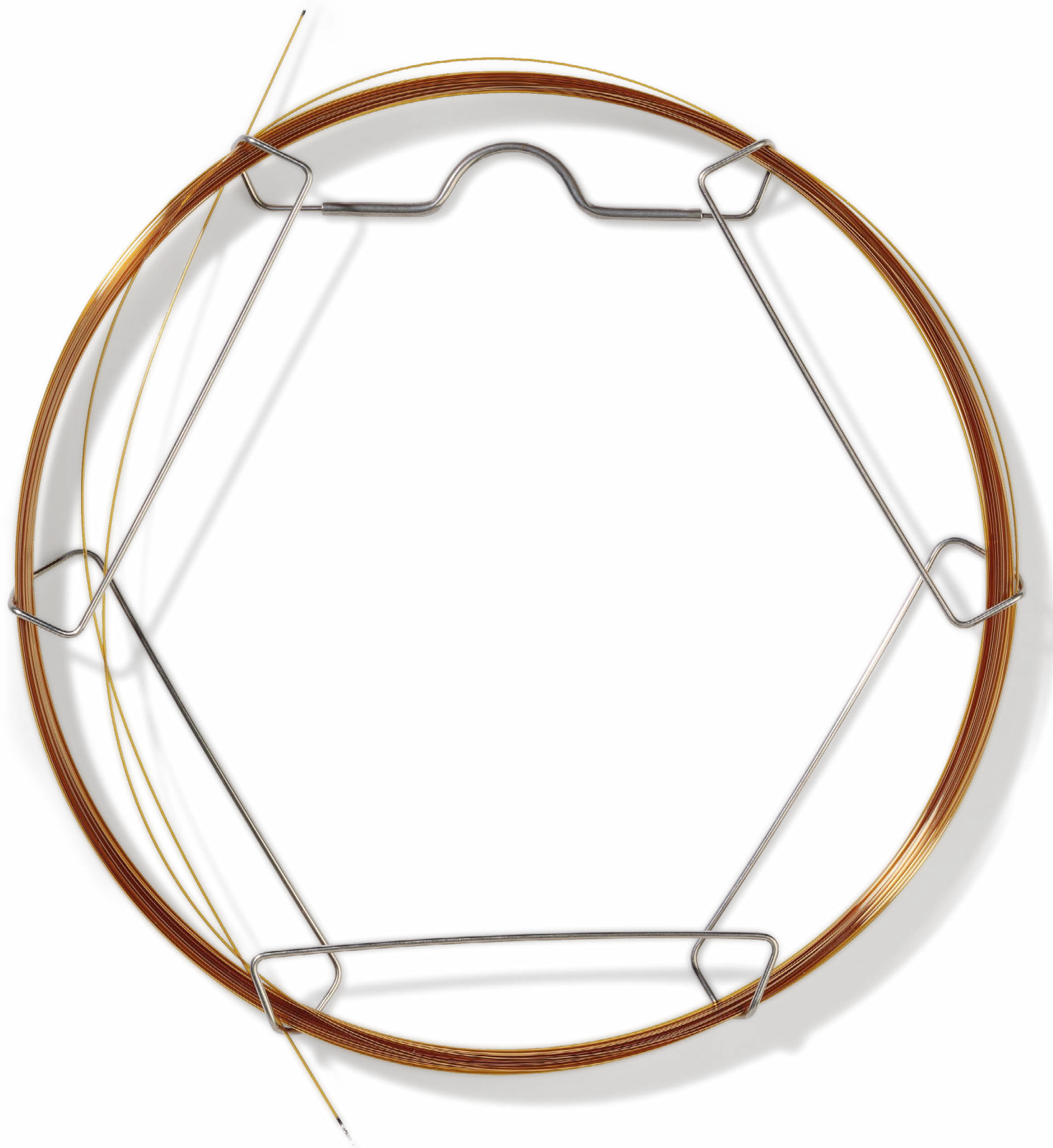
GC Accessories

GC Gas Purification

Standards for GC

GC Columns

We are dedicated to the development of cutting edge GC column technology to meet your ever changing needs. Our full line of GC columns, including our columns for the Agilent Intuvo, innovative ionic liquid, MS-grade, Fast GC, GCxGC, Chiral, SCOT, PLOT and packed columns, provide you the accuracy and consistency you need for your application.



[Discover GC Columns](#)

GC Analysis

X

Whether you use ECD, FID, TCD, MS or another detector – our comprehensive portfolio of GC columns, solvents, standards & accessories offers a dedicated quality for your specific application and detection method.

GC Solvents

Headspace GC Solvents

GC Columns

GC Accessories

GC Gas Purification

Standards for GC

GC Accessories

We provide all the accessories you need for high-quality GC and GC/MS analysis. Check out our reliable GC septa, inlet liners, inlet seals, ferrules, nuts, guard columns, connectors, flowmeters, hand tools, syringes, vials, and PID lamps for all common GC instruments.



[Discover GC Accessories](#)

GC Analysis

X

Whether you use ECD, FID, TCD, MS or another detector – our comprehensive portfolio of GC columns, solvents, standards & accessories offers a dedicated quality for your specific application and detection method.

GC Solvents

Headspace GC Solvents

GC Columns

GC Accessories

GC Gas Purification

Standards for GC

GC Gas Purification and Management

We know you need a gas delivery system that provides gas reliably at the proper purity level, and at the correct pressure. That's why we offer a full line of high-quality gas purification and generation products including gas generators, air compressors, purifiers, and plumbing and regulation products.



Gas Generation and Purification Portfolio

GC Analysis



Whether you use ECD, FID, TCD, MS or another detector – our comprehensive portfolio of GC columns, solvents, standards & accessories offers a dedicated quality for your specific application and detection method.

GC Solvents

Headspace GC Solvents

GC Columns

GC Accessories

GC Gas Purification

Standards for GC

Standards for GC

We offer the most comprehensive portfolio of standards and Certified Reference Materials for gas chromatography methods. Our products ensure accurate and reliable results while supporting laboratory regulatory requirements for the following analytical testing applications:

- Pharmaceutical
- Food & Beverage
- Environmental
- Clinical Diagnostic
- Toxicology & Forensic
- Veterinary
- Petrochemical
- Cosmetics



[GC Reference Materials](#)

consistency.

X

Detection & Calibration

Reference Standards & CRMs

Matrix Standards

Neats & Solutions

Pharmacopoeia & Metrological Institute Standards



Detection and Calibration



Ensure accurate and reliable results while supporting laboratory regulatory requirements with our comprehensive portfolio of certified reference materials and standards and for gas chromatography.

Reference Standards & CRMs

Neats & Solutions

Matrix Standards

Pharmacopoeia & Metrological Institute Standards

Reference Standards & CRMs

We offer a comprehensive portfolio of over 20,000 reference materials, including environmental, petrochemical, pharmaceutical, clinical diagnostic and toxicology, forensic, food and beverage, GMO, cosmetic and veterinary standards, as well as OEM and custom products and services. All manufacturing sites of our standards are at a minimum double accredited to ISO/IEC 17025, and ISO 17034, which is the highest achievable quality level for reference material producers.



Reference Standards

Detection (Calibration)



Ensure accurate and reliable results while supporting laboratory regulatory requirements with our comprehensive portfolio of certified reference materials and standards and for gas chromatography.

Reference Standards & CRMs

Neats & Solutions

Matrix Standards

Pharmacopoeia & Metrological Institute Standards

Neats & Solutions

Reference materials can be used in different formats in the testing laboratory, depending on product availability and method requirements. We offer three different formats to work with your specific application:

- Neat analyte (lyophilized, vials)
- In solution (ampoules, vials, bottles)
- In matrix (ampoules, vials, bottles)



Neats & Solutions

Detection (Calibration)



Ensure accurate and reliable results while supporting laboratory regulatory requirements with our comprehensive portfolio of certified reference materials and standards and for gas chromatography.

Reference
Standards & CRMs

Neats & Solutions

Matrix Standards

Pharmacopoeia &
Metrological Institute
Standards

Matrix Standards

Organic or inorganic compound matrix CRMs are most valuable in the validation of analytical methods.

We offer a variety of diverse matrices for:

- Air Monitoring and Occupational Hygiene
- Clinical Chemistry
- Environmental
- Food & Agriculture
- Physical Properties



[Matrix Reference Materials](#)

Detection (Calibration)



Ensure accurate and reliable results while supporting laboratory regulatory requirements with our comprehensive portfolio of certified reference materials and standards and for gas chromatography.

Reference Standards & CRMs

Neats & Solutions

Matrix Standards

Pharmacopoeia & Metrological Institute Standards

Pharmacopoeia & Metrological Institute Standards

We distribute International Chemical Reference Substances and reference standards from the world's three leading pharmacopoeias:

- The United States Pharmacopoeia (USP)
- The European Pharmacopoeia (EP)
- The British Pharmacopoeia (BP)

Also available are the internationally recognized National Metrology Institute standards or other National Scientific Research Institutes CRMs:

- National Institute of Standards and Technology, USA (USA)
- National Measurement Institute, Australia (NMIA)
- Joint Reserch Centre, Europe (JRC)
- Federal Institute for Materials Research and Testing, Germany (BAM)



Standards for Pharmacopoeia

Gas chromatography workflow solutions

To place an order or receive technical assistance: **[SigmaAldrich.com/customer-support](https://www.sigmaaldrich.com/customer-support)**
For Technical Service visit: **[SigmaAldrich.com/techservice](https://www.sigmaaldrich.com/techservice)**

[SigmaAldrich.com/gc](https://www.sigmaaldrich.com/gc)

Merck KGaA
Frankfurter Strasse 250
64293 Darmstadt, Germany

[SigmaAldrich.com](https://www.sigmaaldrich.com)

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