



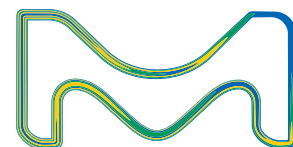
## Calibrate with Accuracy

Physical and Chemical property standards are used in every industry

Physical and chemical property standards are essential in the calibration of instruments used in a variety of analytical characterization methods. Instruments measuring melting point, density, turbidity, color, and spectral properties are crucial to labs identifying and purifying chemical substances. Laboratories require reliable measurements to ensure successful analyses. The first step to achieve a high level of accuracy of laboratory equipment is by using first-class analytical standards.

We offer wide array of high-quality standards and certified reference materials (CRMs) for precise calibration of your instrument. Choose from a wide selection of standards and certified reference materials (CRMs) for many test parameters like

- Water determination (Karl Fischer Standards)
- pH
- Conductivity
- Density
- Flash point
- Refractive index
- Freezing point
- Viscosity
- Volumetric analyses
- Color
- Biological oxygen demand (BOD)/chemical oxygen demand (COD)
- Acidity/total acid number (TAN)
- Total base number (TBN)
- Redox
- Total organic content (TOC)
- Total suspended solid (TSS)
- Total dissolved solid (TDS)
- Turbidity
- Melting point
- Particle size
- HPLC system qualification
- Ultraviolet/visible spectroscopy (UV/VIS)
- Hardness



Also, our portfolio has petrochemical standards which are widely used in calibration of laboratory instruments used in testing petroleum and derivative products. Those standards include

- Cloud Point Standards
- Aniline Point Standards
- Cetane Number Standard
- CFPP Standard
- Distillation Standards
- Freezing Point Standards
- Pour Point Standards
- Smoke Point Standard

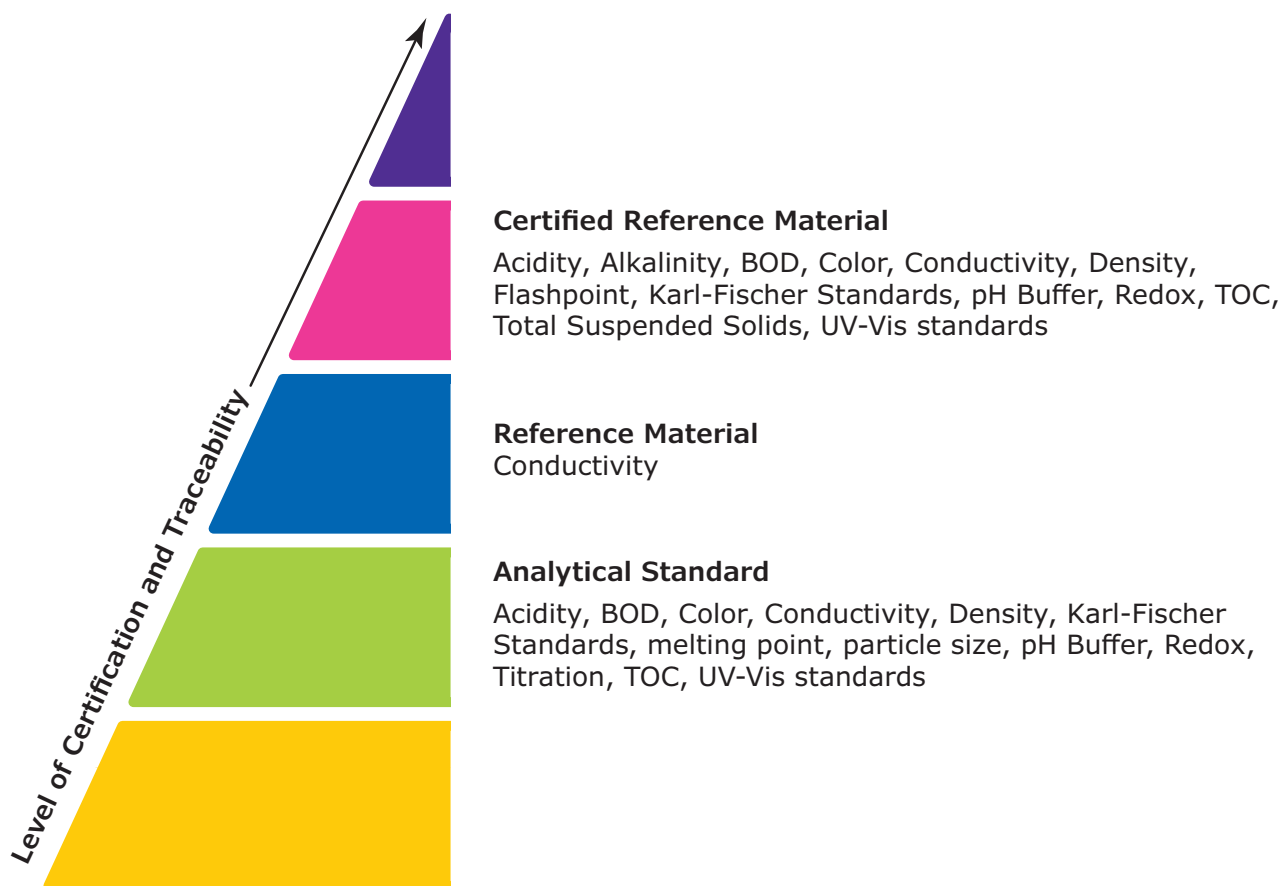
We offer a vast portfolio of Physical & chemical Property Standards with applications in almost every industry segment ranging from pharma, industrial testing, environmental, food & beverage & material sciences. The portfolio is comprised of more than 20 product groups having nearly 1300 products.

### Key Features:

- Secure: Accredited to ISO 17034 and ISO/IEC 17025
- Trusted: Traceable to the SI units via NIST (National Institute of Standards and Technology, USA) and PTB (Physical Technical Institute, National Metrological Institute of Germany)
- Ready for Audits: Detailed Certificate of Analysis (CoA) for every product
- Available in variety of formats to suit customers' needs
- Three Grades offered from QUALITY GRADE pyramid: Certified Reference Materials (CRM), Reference Materials (RM) & Analytical Standards (AS)



### Physical & Chemical Standards Portfolio: Quality Grades offered



Please find more information on Quality Grades: [SigmaAldrich.com/quality-grades-crm](https://www.sigmaaldrich.com/quality-grades-crm)

## Quality is all in the detail!

Our Certificates of Analysis for Certified Reference Materials meet all requirements as recommended by ISO Guide 31:

### ISO Guide 31 CoA Content

ISO 17034 Accreditation	Instructions for handling and use
Document title	Page number/total pages
Unique identifier of the RM	Document version
Name of the RM	Material description
Name & contact details of producer	Property value & associated uncertainty; property of Interest
Intended use	Metrological traceability
Period of validity	Name, function of the RM producer's approving officer
Storage information	

Please find below analytical application areas and the instruments used for each product group from **Physical & Chemical Standards Portfolio**:

Main Product Groups	Instrumentation	Applications in various Market Segments			
		Pharma	Environment	Food	Industrial/other
UV-Vis	UV-Vis spectrophotometers	Drug testing & biomolecule analysis, methods according to pharmacopoeia	Water testing	Food quality testing (QA & QC)	
Particle size	Particle size measuring with a laser	Drug discovery & production	Environmental testing	Food quality testing	Paints & coating, ceramics, battery manufacturing (QC)
Density standards	Densitometer	Pharma QA/QC testing & cosmetic testing		Food quality testing	Testing of fuels, oils, petrochemicals
Color standards	Colorimeter	New pharmaceutical and cosmetic formulations		Food quality testing	Paints & coating, color density of X-ray films
Viscosity standards	Viscometers	QA in drug formulation & manufacturing		Food quality Testing	Industrial QA/QC, raw material testing
Conductivity standards	Conductivity meters	Drug development and biomolecular research	Environmental testing, water testing		Fuel cell and battery testing
Karl Fisher standards	Titration	Raw material & active ingredient analysis	Water testing	Milk products / bakery products analysis	Polymers/ petrochemicals/ cosmetics/chemical industry

■ Main applications

■ Additional applications

Main Product Groups	Instrumentation	Applications in various Market Segments			
		Pharma	Environment	Food	Industrial/other
pH buffers	Ion Selective Electrode (ISE) meters, pH meters	Drug discovery in pharma/bio sector	Environmental testing, water testing	QA/QC of food, flavor analysis	Fuel cell and battery testing
DO/BOD/COD	Dissolved Oxygen (DO) meters		Waste water Analysis		
Volumetric standards	Titrators	Assay determination	Water testing	Fatty acids estimation in oils	Trace analysis or for batteries, fuel cells
Flash point/ distillation/ Cloud point/ Freezing point/ Pour point/ Aniline point/ Cetane number/ Cold filter plugging point/ Hardness/ Smoke point					Testing of petroleum and their derivatives
Redox standards	Redox meters		Water testing		
Turbidimetry	Turbidimeters		Water testing		
Total suspended solid	Sensors		Water testing		
Alkalinity standards			Environmental testing, water testing		
TOC standards	TOC analyzers	Water quality testing in pharma productions	Environmental testing, water testing		Process water testing in semiconductors manufacturing

- Main applications
- Additional applications

Please find more information on Physical & Chemical Property Standards:

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

#### To place an order or receive technical assistance

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