KPM

WE CRAFT ASSURANCE



APPLICATION BRIEF

Ensuring Safe Drinking Water

The World Health Organization (WHO) provides an authoritative document for setting national regulations and standards for water safety in support of public health. A total of 45 microbiological and chemical parameters must be monitored and tested regularly according to the WHO's guidelines for drinking water. Drinking water comes from a variety of sources, including public water systems, private wells, or bottled water. Testing drinking water is essential to ensure it is safe to drink.

TYPES OF TESTING

Drinking water requires three different types of testing:

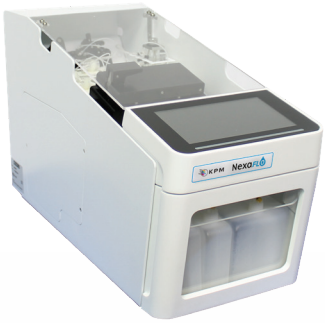
- Microbiological testing
- Organic Chemistry Testing
- Inorganic Chemistry Testing

In this application brief, we will focus on Inorganic Chemistry Testing. Inorganic Chemistry Testing is performed by different techniques including: titration, Ion Selective Electrode, atomic absorption, ICP-OES, UV-Vis spectrophotometry, Ion Chromatography, etc. The inorganic analytes that are typically tested for drinking water are:



SmartChem®
Series

Ammonium	Fluoride	Chlorine (Free)	Sodium
Antimony	Mercury	Chorine (Total)	Sulphate
Arsenic	Nickel	Color	Chlorides
Boron	Nitrate	Conductivity	Flavor
Bromate	Nitrite	Iron	Copper
Cadmium	Lead	Manganese	Chromium (VI)
Cyanide	Selenium	Oxidability	pH
Aluminum			



NexaFlo®

ANALYTES DETECTED

Using proven wet chemistry analysis methods, lab technicians can perform fast and accurate testing of critical parameters and ensure safe consumption. Analytical processes are often automated. Examples of automated wet chemistry analyzers include the NexaFlo®, a segmented flow analysis platform, and the SmartChem®, a discrete wet chemistry analyzer.

SmartChem® and NexaFlo® can test the analytes listed below. Given the flexibility of SmartChem® to accommodate multiple colorimetric methods and ranges, many inorganic laboratories are using SmartChem® analyzers for drinking water testing. SmartChem® analyzers are used with a range of dedicated ready to use reagents for the methods listed below. The NexaFlo® Series is perfect for labs requiring low detection limits in Segmented Flow Analysis.

Parameter (matching permissible limit)	SmartChem®	NexaFlo®	SmartChem® Ready to Use Reagents
Aluminum	●	●	
Cyanides (as CN-)	●	●	
Free Residual Chlorine	●	●	
Chlorides (as Cl-)	●	●	●
Copper	●	●	
Chromium (VI)	●	●	●
Total Hardness (as $CaCO_3$)	●	●	●
Phenols or Phenolic Compounds	●	●	
Iron (as Fe^{2+})	●	●	●
Phosphates	●	●	●
Fluorides (as F-)	●	●	●
Manganese	●	●	
Nitrates (as N)	●	●	●
Nitrites (as N)	●	●	●
Ammonia	●	●	●
pH / Conductivity / ORP	●		
Oxidability		●	
Sodium	●	●	●
Silicates	●	●	●
Total Alkalinity (as $CaCO_3$)	●		
Sulfates	●	●	●
Methylene Blue Active Substances (MBAS)		●	
Zinc	●	●	

KPM Analytics offers SmartChem® and NexaFlo® automated analytical equipment and reagents to verify water physicochemical quality and provide documentation that testing has been carried out using the required guidelines and methods.



The SmartChem® Series Discrete Analyzer is a wet chemistry platform for automated photometric and electrochemical analysis.



The NexaFlo® is an automatic Segmented Flow Analyzer that automates the sample preparation process and revolutionizes laboratory workflows.

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