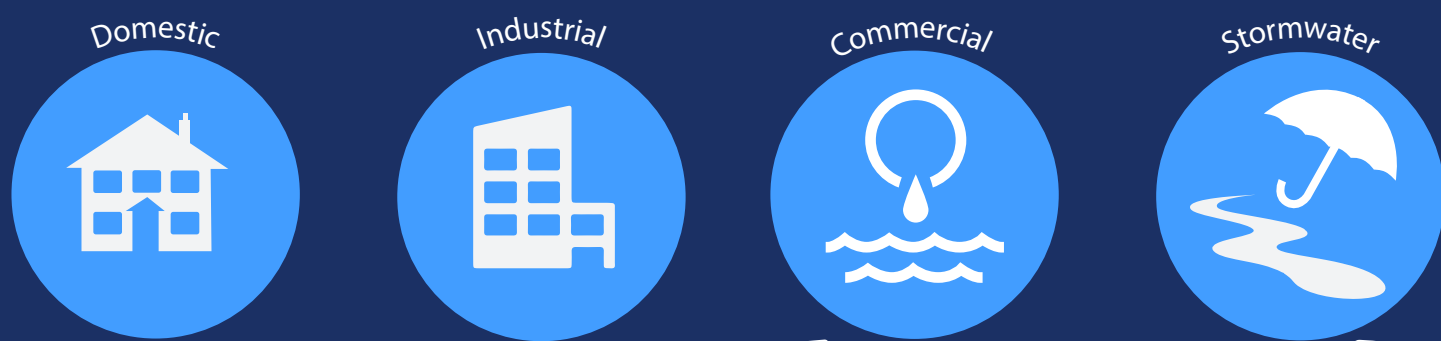


Meeting the standards for wastewater testing

Safeguarding public health and protecting the environment

Stormwater and wastewater from domestic, industrial, and commercial activities has the potential to contaminate the water table. Regular filtration-based tests help water quality engineers assess and treat wastewater appropriately to meet international standards.

What are the sources of wastewater?



International standards for wastewater testing

Engineers worldwide use filtration to analyze solid-phase material in wastewater, following standard methods for measurement of **total suspended solids (TSS)**. In the US and Canada region, filtration is also used to measure **volatile suspended solids (VSS)**. These tests help engineers optimize water treatment to prevent sediment build-up in surface waters and minimize environmental damage when wastewater is released.

US and Canada

VSS: Standard Method 2540E

The residue from method 2540D is ignited to constant weight at 550°C. The mass lost after heating represents volatile solids – giving an indication of the amount of organic matter in the sample.

TSS: Standard Method 2540D

Designed to align with EPA 160.2, a sample of wastewater is mixed by magnetic stirrer and a 0.1 L aliquot is withdrawn and passed under vacuum through a suitable glass fiber filter with diameter 22 to 125 mm. The filter may be a Whatman grade 934-AH or another product that gives demonstrably equivalent results. The filter and residue are then dried at around 105°C and weighed. The weight is then compared to that of the filter alone to give a measure of TSS.

EU, UK and derivatives in ROW

TSS: European Standard EN 872

Vacuum filtration is used to pass a wastewater sample through a borosilicate glass fiber filter that

- shall not contain any binders
- shall be circular and of appropriate diameter
- shall comprise a mass per unit area of 50-100 g/m
- shows a mass loss less than or equal to 0.017 mg/cm² in a blank test

After drying at around 105°C, filters and residue are weighed and TSS is assessed by comparing the weight to the filter alone.

China

TSS: Chinese Standard GB 11901-89

A 100 mL sample of wastewater is passed under vacuum through a cellulose nitrate-cellulose acetate (mixed cellulose ester) membrane filter with a pore size of 0.45 µm. The filter and residue are then oven dried at 103 - 105°C, and the weight compared to that of filter alone to assess TSS.

Standard methods 2540D and 2540E

Whatman™ 934-AH™ filters

Approved by the US Environmental Protection Agency

Meet 2540D regulations on mass loss after washing and drying

Show minimal mass change after heating at 500°C

European standard EN 872

Whatman™ GF/C™ Glass Fiber filters

Certified mass loss of 0.017 mg/cm² after washing

Binder-free, in line with EN 872 regulations

Chinese standard GB 11901-89

Whatman™ Non-sterile MCE membranes

0.45 µm pore size

Heat stability up to 130°C

How Whatman™ supports wastewater testing

RTU (Ready-To-Use) filters

Available for both Whatman™ 934-AH™ and GF/C™ filters

Simplify filter preparation by reducing steps required

934-AH™ filters save up to 168 minutes per test for 2540D and 2540E methods

Minimize batch-to-batch and test-to-test variation

Find out more about water quality testing

[LEARN MORE](#)

cytiva.com

Cytiva and the Drop logo are trademarks of Global Life Sciences IP Holdco LLC or an affiliate doing business as Cytiva.

934-AH, GF/C, and Whatman are trademarks of Global Life Sciences Solutions USA LLC or an affiliate doing business as Cytiva.

© 2021 Cytiva

For local office contact information, visit cytiva.com/contact

CY21136-GL-GCR-APM-Water-testing