Water hardness by photometric titration as per ASTM D8192

Determination of total calcium and magnesium hardness using the Metrohm Optrode

HIGHLIGHTS

- Accurate and reproducible results
- Automatic endpoint detection
- Maintenance-free sensor

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Automated photometric titration provides for higher accuracy and better reproducibility of results

Calcium and magnesium ions are the main contributors to water hardness. Their concentration in water can be determined by manual titration, as described in many national and international standards. However, the exact determination of the titration endpoint can be a challenge, especially in colored sample matrices. As color perception may vary slightly from user to user, accuracy and reproducibility of results may suffer, even more so when high numbers of samples must be analyzed by different users, e.g. due to shift work.

ASTM method D8192 describes automatic determination of the calcium and magnesium content using a photometric sensor. In combination with a digital titrator, photometric sensors such as the Metrohm Optrode register the color change of the titrant automatically safeguarding accurate and reproducible results even for colored samples.

BENEFITS OF PHOTOMETRIC DETERMINATION OF WATER HARDNESS WITH THE OPTRODE SENSOR

- Reliable: accurate and consistent endpoint detection even in colored samples
- Maintenance-free: simple rinsing of the sensor prior to the measurement is sufficient
- Space-saving design: The Optrode can be easily used with automated systems

FURTHER READING

- Metrohm Application Note AN-T-084: Total, calcium and magnesium hardness in water samples
- Metrohm Application Bulletin AB-125

Optrode

ORDERING INFORMATION

Instrument	
6.1115.000	Optrode