

2029 Hardness Process Analyzer

From Metrohm Process Analytics

Hardness, which is determined by the calcium (Ca^{2+}) and magnesium (Mg^{2+}) content in water, is a major impurity concerns in many industries. Hardness levels have to be constantly measured on feed and wastewater streams to avoid scaling of pipes and corrosion of water heaters for power generation. In chlor-alkali plants, hardness levels have to be reduced to a minimum since they can shorten the performance and lifetime of the membranes and electrodes. Therefore, accurate determination of hardness degree helps overcome costly remediation procedures.

Because of its influence in different production processes, it is of vital importance to monitor the hardness concentration. The **2029 Hardness process analyzer** from Metrohm Process Analytics is the most straightforward and easy-to-use tool to do so online.

About the hardness application

Hardness is determined photometrically. Ca^{2+} and Mg^{2+} form a red complex with addition of Calver B. By adding EDTA, this complex is destroyed and the complex turns to a blue colour. The difference in colour intensity indicates the hardness level in the sample, and can be measured at a wavelength of 620 nm, ranging from $\mu\text{g/L}$ to mg/L .

Benefits for online analysis

- Protect expensive company assets by monitoring your processes
- Process data available at your fingertips 24/7 means no waiting for slow, manual laboratory methods
- Increased safety for employees – no manual sampling necessary, no exposure to dangerous environments
- Save money by reducing downtime: analyzer sends alarms for out-of-specification values which inform the operator sooner



Applications for $\text{Ca}^{2+}/\text{Mg}^{2+}$

- ... in caustic soda plant / (chemical)
- ... in ore processing plant / (steel/metal)
- ... in chlor-alkali production / (chemical)
- ... in power plants / (petrochemical)
- ... in drinking water treatment / (potable water)
- ... in sodium carbonate production / (chemical)
- ... in PVC production / (chemical)

$\text{Ca}^{2+}/\text{Mg}^{2+}$ analysis performed safely online

- Hardness can be measured in 1 or 2 sample streams
- Compact footprint for tight industrial spaces: 326 x 273 mm
- Safe, rugged enclosure designed to IP66 specifications is ideal for process environments
- A 7" full color touchscreen shows trend graphs and allows action modifications
- Remote access and control via Ethernet and Modbus TCP/IP, with USB for data export
- Easy maintenance due to simplicity of the layout
- Automatic data and/or alarm transfer to a DCS system



 **Metrohm**
Process Analytics

For more information, visit our website: www.metrohm.com