

# ADVANCE ANALYTIK

REVOLUTIONIZING ONLINE MONITORING SOLUTIONS



## OPTICS 1000 - SILICA

**SILICA Low Range (SiO<sub>2</sub>)**

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# Optics 1000 Series

## SILICA LR (SiO<sub>2</sub>)

### Method - Colorimetric

After adding the sample into the measurement cell, some reagents are added in order to adjust the solution to the desired conditions (pH, valence's elements, etc.). Then, a blank is done to correct any temperature or turbidity disturbance. Subsequently, a last reagent is added, and it reacts with solution developing a color, which is measured using a correct wavelength. Thanks to the photometer used, the result achieves a great accuracy



### Principle of measurement

The initial reaction of the silica with the diammonium molybdate in such acidic conditions ensures that only the B-molybdisilicic acid is formed. Then the solution is treated with tartaric acid to destroy the phosphomolybdc acid, which is formed under the same conditions. Finally, the molybdomolybdc acid is reduced to the molybdenum blue complex, which absorbs at 810 nm. If some of the B-silicomolybdc acid is formed the molybdenum blue reduction product of this form absorbs at a lower wavelength, near to 730 nm. Hence, it is important to ensure that only the B-isomer be formed in the initial stage.

## Advantages of the method

Because only the B-form of the silico-molybdic acid is formed the method has a fairly good sensitivity at the lower end as required by power plants and the electronics industry to ensure that the water is pure. The new formulation of Reagent #1 also speeds up the time required for the complete reaction. In addition, although the first reagent is relatively expensive very small volumes of reagent are required.

## Specifications

|                          |   |
|--------------------------|---|
| RANGE                    | From 0 to 100 ppb / 500 ppb. Adjustable higher concentrations with internal dilution. |
| ACCURACY                 | ±2%   |
| FULL SCALE REPEATABILITY | ±2%   |
| ANALYSIS TIME            | around 15 minutes   |
| CALIBRATION              | two point   |
| LED WAVELENGTH           | 810 nm  |

## Reagents consumption

- Reagent 1: 0.37 ml / analysis - 0.3L / month
- Reagent 2: 0.37 ml / analysis - 0.3L / month
- Reagent 3: 0.37 ml / analysis - 0.3L / month

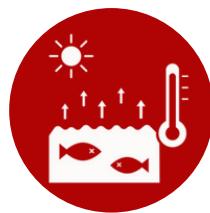
Monthly consumption calculated assuming 1 analysis per hour



# Applications



Pure Water



Aquaculture



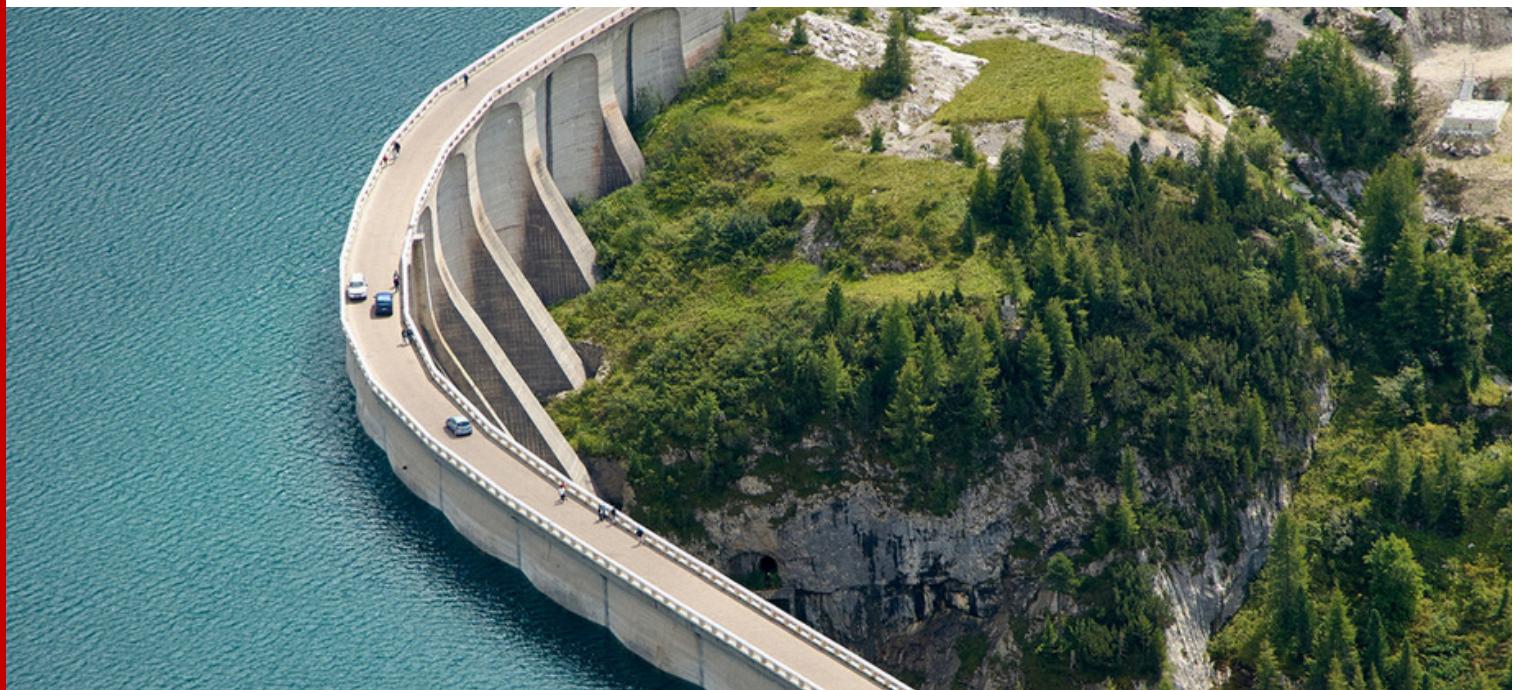
Pulp and Paper



Chemical Processing Plants



CETP - Common Effluent Treating Plant



## Note -

*This data sheet serves as general information about the Optics 1000 - Silica (LR). For specific technical details, installation guidelines, and troubleshooting assistance, please refer to the official user manual provided with the product.*

*For inquiries and detailed technical information, please contact [sales@advanceanalytik.com](mailto:sales@advanceanalytik.com).*



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