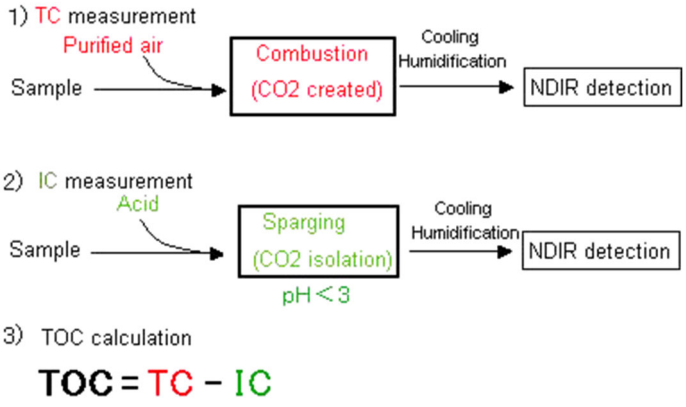
## Total Organic Carbon Analyzer (Solid/Liquid)

Total Organic Carbon (TOC) Analyzer is an analytical instrument adopting catalytic oxidation at combustion temperature of 680 °C and non-dispersive Infrared method to determine the soluble total organic carbon content in all kinds of samples.




The analyzer measures total carbon (TC) and inorganic carbon (IC) in the samples. The sample is delivered to the combustion furnace, which is supplied with purified air. There, it undergoes combustion through heating to 680°C with a platinum catalyst. It decomposes and is converted to carbon dioxide. The carbon dioxide generated is cooled and dehumidified, and then detected by the NDIR. The concentration of TC (total carbon) in the sample is obtained through comparison with a calibration curve formula. Furthermore, by subjecting the oxidized sample to the sparging process, the IC (inorganic carbon) in the sample is converted to carbon dioxide, and the IC concentration is obtained by detecting this with the NDIR. The TOC concentration is then calculated by subtracting the IC concentration from the obtained TC concentration.

Analysis of solid samples is also achievable with the separate solids module. Solid samples can be oxidized catalyst-free in an oxygen stream at up to 1,300 °C. With a large sample weight of up to 3 g, reliable results can be achieved with a single measurement. TOC analysis of solid samples provides useful information for environmental applications including waste management, biomass conversion, and carbon cycle research.

In addition, two highly sensitive detectors namely, the chemiluminscence detector (CLD) and the solid state chemodetector (ChD) are available for the total bound nitrogen ($TN_b$) determination. $TN_b$ analysis can be performed simultaneously with the TOC determination from the same injection, which saves time and operating costs.

*For charging and staff in-charge information, please refer to the charges for the use of instrument.*