

Total organic carbon, TOC

LAST CHANGED: 08 SEPTEMBER 2022

The most common method (and which we use) is directing the sample across a hot catalyst, where the carbon is combusted into CO₂, which is quantified. First, inorganic carbon is removed by acidification of the sample and expulsion of the resulting carbonic acid with CO₂-free gas. The final step may also expel some volatile organic forms of carbon, but these usually constitute a negligible proportion of the TOC in surface waters.

Known issues with the parameter and/or important method changes

No problems reported.

Current method of measurement

Valid since May 2022

Method: SS-EN ISO 20236:2021

Water samples not conserved. Preparation treatment with HCL and CO₂ expulsion. The sample is subsequently combusted and produced CO₂ is measured using an NDIR detector.

Instrument: Shimadzu TOC-VCPH with TNM-1 module and automatic sample changer ASI-V.

Instrument: Shimadzu TOC-LCPN with TNM-L module with automatic sample changer ASI-L.

This website uses cookies which are stored in your browser. Some cookies are necessary for the website to work properly and others are selectable. You choose which ones you want to allow.

Note 1: The two instrument models are used in parallel.

Note 2: Sample changer with built-in stirring apparatus is used.

Cookie settings

Previous methods

2007-01-01 to 2022-04-01

Method: Swedish Standard SS-EN 1484 1st ed.

Water samples not conserved. Preparation treatment with HCL and CO₂ expulsion. The sample is subsequently combusted and produced CO₂ is measured using an NDIR detector.

Instrument (since January 2007): Shimadzu TOC-VCPH with TNM-1 module and automatic sample changer ASI-V.

Instrument (since August 2021): Shimadzu TOC-LCPN with TNM-L module with automatic sample changer ASI-L.

Note 1: The two instrument models were used in parallel.

Note 2: Since 2010-03, sample changer with built-in stirring apparatus was used.

2004-01 – 2006-12

Method: Swedish Standard SS-EN 1484 1st ed.

Instrument: Shimadzu TOC 5050 with sample injector ASI-502.

Water samples not conserved. Preparation treatment with HCl and measured using an NDIR detector.

1999-01 – 2003-12

Method: Swedish Standard SS 02 81 99.

Instrument: Shimadzu TOC 5050 with sample injector ASI-502.

Water samples not conserved. Preparation treatment with HCl.


1987-01 – 1998-12

Method: Swedish Standard SS 02 81 99.

Instrument: Shimadzu TOC 500 with sample injector ASI-502.

NB: Water samples conserved with HgCl₂ until 1996, with H₂SO₄ during the period 1997-1998.

This website uses cookies which are stored in your browser. Some cookies are necessary for the website to work properly and others are selectable. You choose which ones you want to allow.

 **Contact**
Ingrid Nygren, Chemist

Department of Aquatic Sciences and Assessment, Section for
Geochemistry and Hydrology, laboratory

ingrid.nygren@slu.se, +4618673141

Links

Read more about [TOC on Wikipedia](#).

PAGE EDITOR: VATTENMILJO-WEBB@SLU.SE

SLU, the Swedish University of Agricultural Sciences, has its main locations in Alnarp, Uppsala and Umeå. SLU is certified to the ISO 14001 environmental standard. Telephone: 018-67 10 00 · Org nr: 202100-2817 · [Contact SLU](#) · [About SLU's websites](#) · [Manage cookies](#)

This website uses cookies which are stored in your browser. Some cookies are necessary for the website to work properly and others are selectable. You choose which ones you want to allow.

Cookie settings

Allow only necessary cookies

Allow all cookies