

TOC-V

Operating Procedures for Normal Sensitivity NPOC and IC Analysis
(Rev.E; 08Feb05)

Reagents

- *All glassware must be acid washed. See 'Glassware Washing Procedures' in SOP manual.
- *All reagents should be made with nanopure or equivalent water that has been purified through an 'organic-free' cartridge in #4 position.

2N HCL: 30 mL conc. HCL + 150 mL water

TOC/NPOC Standards

Stock TOC Standard (1000 ppm): 0.5313g Potassium Biphthalate dried 2 h @ 120°C / 250mL
Refrigerate in amber glass bottle- good for about two months

External TOC Standard (1000ppm): Purchased from VHG Labs (#TOC-100) and used for QC

Common Working Standards and QC: (prepare fresh weekly)

Range	Final Conc.	Vol. Stock (uL)	Vol. 2N HCl (mL)	Total Vol. (mL)
Low (2-20 mg C/L)	20.00 ppm	2000	1	100
	QC (10.00ppm)	1000 uL Ext Std	1	100
High (5- 200 mg C/L)	200.00 ppm	5000	0.25	25
	QC (50 ppm)	2500 uL Ext.Std	0.5	50

IC Standards

Use designated volumetric flasks found in the cold room

Stock TIC Standard (2000ppm): 1.75g Sodium Bicarbonate + 2.205g dried Sodium Carbonate
Q.S. to 250 mL total volume with Nanopure water

Use 2000 ppm IC Na Carbonate/Bicarbonate standard found in the cold room and nanopure water to prepare working standards below

Concentration (ppm)	Stock IC (2000ppm)	Total vol. w/ nanopure
100.00	1250 μ L	25 ml
50 ppm QC	2.5 mL ERA Custom Std	50 mL

General Instrument Conditions

- Carrier gas cylinder pressure: ≥ 300 psi
- Carrier gas tank regulator pressure: 80-100 psi
- Instrument carrier gas flow: 150 mL/min
- Instrument carrier gas pressure: 4-5 kg/cm²
- Furnace temp: 680°C
- Dehumidifier temp: 1°C

Analysis Procedures

1. Turn on carrier gas at tank and check pressures (see above).
2. Check liquid levels in moisturizer, dehumidifier trap, carboys, and 2N HCl if running IC. Adjust as necessary.

3. Turn on power to instrument.
4. Open "TOC-Control V" program from Windows desktop.
5. Open "Sample Table Editor".
6. Right-click on "TOCV-csn" icon in left window and select "connect".
7. Confirm "Furnace Temp (Deg C)" is set to 680. Click "Use Settings On PC". If set to temp other than 680:
 - A). Click "Edit Settings On PC"
 - B). Click "TOC" tab
 - C). Select 680 in lower right of window, then "OK"
 - D). Click "Use Settings On PC"
8. Open the template sample table you wish to use
9. IMMEDIATELY click "File→ Save As" then save with time-stamped file name.
10. On top menu under "Instrument" click "Connect" and then "Background Monitor". Furnace and dehumidifier should be at 680 and 1 deg C respectfully for at least 1 hour before analysis. Confirm baseline conditions are OK before proceeding.
11. Modify sample table according to your sample set. Cut rows as necessary but make sure samples remain bracketed by blank and QC. NOTE: If SALT samples are being analyzed, be sure to add a nanopure water sample using "cleaning" method to end of run.
12. Place samples, calibration standard(s), and QC('s) in rack positions according to sample table "Vial" column. To change positions, click "View→ ASI/8port sampler vials"
13. To start run click "Instrument→ Start". Select Standby option according to instrument use schedule then click "Standby"
14. Verify vial positions then click "OK".
15. De-Select "External Acid Addition" then click "Start"
16. To monitor progress, right-click sample name in left window then select "Sample Window". If hidden, click "Window→ Sample Window" from top menu.

Shutdown

1. Shut off carrier gas tank valve
2. Complete database log
3. Clean all glassware