

Standard Operating Procedure

Specifications and Guidance for Contaminate-Free Sample Containers Wash and Preparing VOA Sample Vials using EPA-B Method

Introduction

The Shimadzu TOC- $V_{CPH/CPN}$ (TOC) instrument measures the total amount of carbon (TC), inorganic carbon (IC), the total amount of organic carbon (TOC) and the total amount of non-purgeable organic carbon (NPOC). To analyze samples of this nature vials must be available and specially cleaned to reduce instrument background and assure top quality system performance for low level monitoring.

Purpose

The purpose of this document is to introduce the user to the routine operation of cleaning 40 mL VOA vials for use with the TRACES TOC-L instrument. No other vial type or cleaning procedure is recommended with the TRACES TOC-L instrument.

Scope

This procedure applies to the cleaning of Type B VOA 40 mL containers. The vials should have been originally purchased as 'Pre-Cleaned' VOA Vials.

Referenced Documents

- EPA Publication 9240.0-05A EPA540/R-93/051 PB93-963316, December 1992
- Shimadzu TOC- $L_{CPH/CPN}$ User's Manual Lab Solutions (p/n 638-94834)
- Shimadzu TOC- $L_{CPH/CPN}$ TOC System User's Guide (p/n 638-94829)
- Shimadzu TOC- $L_{CSH/CSN}$ User's Manual (p/n 638-94599J)

Responsibilities

1. TRACES Users

- 1.1. All Users are responsible for the cleanliness of the VOA vials in use.
- 1.2. It is recommended that all users follow this SOP to ensure the VOA vials are clean for use.
- 1.3. If cleaning is not possible, it is recommended that new Pre-Cleaned VOA vials are purchased.
 - 1.3.1. Restek p/n: RSK-21796
 - 1.3.2. Fisher Scientific p/n: 12-100-250
 - 1.3.3. Mandel p/n: SZ-220-95278-01

2. TRACES Staff

- 2.1. TRACES Staff are to direct TOC users to this document if they wish to re-use the VOA vials. No training is provided.

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Vial Specifications

1. **Vial Type**
 - 1.1. **EPA Vial Type: B**
2. **Specifications**
 - 2.1. Container: 40 mL borosilicate glass vial, 24 mm neck finish
 - 2.2. Closure: Polypropylene or phenolic open-top, screw cap, 150mm opening 24-400 size
 - 2.3. Septum: 24 mm disc of 0.005" Teflon bonded to 0.12" silicon with $T_v=0.125$ "
 - 2.4. Total Weight: 20.5g

Cleaning Procedure for Container Type B

1. Sample Type: Purgeable (Volatile) Organics in Soils and Water
 - 1.1. Wash glass vials, Teflon-backed septa, Teflon liners, and caps in hot water using laboratory grade non phosphate detergent.
 - 1.2. Rinse three times with copious amount of water to remove the detergent
 - 1.3. Rinse three times with ASTM Type 1 (18.2 MOhm) organic free water
 - 1.4. Oven dry vials, caps, septa, and liners at 105-125°C for one hour
 - 1.5. Allow vials, caps, septa, and liners to cool to room temperature in an enclosed contaminant free environment.
 - 1.6. Seal 40 mL vials with septa (Teflon side down and cap
 - 1.7. Label exterior with the date of cleaning (i.e., 20220914)
 - 1.8. Stores in a contaminant-free area and if possible, reseal the vials in the original box enclose with polyethylene wrap

*Contact the TRACES Manager for further information.