

Title: Glassware Cleaning



Filename: 2800v5.lwp

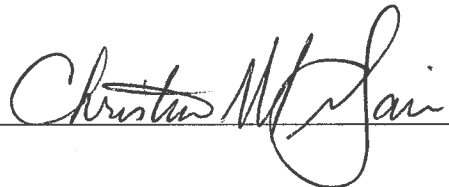
This document contains proprietary information. It is provided to Exova employees only. Do not share this information verbally or otherwise with anyone without the express written consent of the General Manager or Technical Director.

Reference: None

<u>Rev. No.</u>	<u>Effective Date</u>	<u>Revision Summary</u>
1.	01-25-91	General
2.	10-07-93	Required annual review
3.	09-07-95	1.0, A: DI water optional
4.	05-04-99	Converted to LWP format. Addition of Appendix A, Firing instructions.
5.	MAR 15 2010	Revised to comply with the current version of SOP 101. Sec. 3.0, 4.0: added.

Uncontrolled When Printed

<u>Prepared by</u>	<u>Date</u>	<u>Technical Review</u>	<u>Date</u>
	03-02-10		3-2-10

QA Approval/Date:  03/15/2010

1.0 SCOPE AND APPLICATION

This method is used to clean glassware properly for organic and general chemistry use. Refer to SOP 7820 for glassware cleaning for the inorganics lab.

2.0 PROCEDURE FOR CLEANING GLASSWARE FOR ORGANIC ANALYSES

- 2.1 Glassware used to extract and/or concentrate samples shall be first washed with soap and water. This may be done either manually or in a dishwasher, using detergents such as Alconox or Alcojet, respectively. DO NOT use Alconox in the dishwasher, as it will foam excessively. Rinse with tap water, then with deionized water (optional, but required if the glassware is to be heated in the kiln). Allow to air dry.
- 2.2 Any visible residues which persist after soap and water should be subjected to a solvent wash, such as with acetone. At this point there should be no traces of organic chemical residues left on the glassware. If necessary, a detergent such as MICRO All Purpose may be used to remove stubborn organic residue.
- 2.3 Prior to reuse for organic analysis, the glassware must be solvent rinsed (Section 2.4) or heated to 400°C for 1 hour (Section 2.5).
 - 2.3.1 Class A calibrated glassware (i.e. volumetric flasks) should never be heated in the kiln.
 - 2.3.2 Plastic plugs and stopcocks should never be heated.
- 2.4 Solvent Rinse: The solvent rinse should consist of (a) small amounts of methanol followed by (b) two rinses with high purity methylene chloride. The solvents mentioned above may be substituted with the solvent appropriate for your specific analysis.
- 2.5 Heated Cleaning
 - 2.5.1 The kiln should be filled with the heaviest glassware at the bottom to lighter glassware at the top (i.e. round bottom flasks at the bottom, then KDs, funnels and beakers).
 - 2.5.2 Extractors and Snyder columns should be placed upside down. Micro Snyders and receivers should be fired in the small basket, which is hung inside the large basket.
 - 2.5.3 Turn the main power to the kiln "on".
 - 2.5.4 Check the temperature program by pressing "Preview". The program should be as follows:

USER
1
SEGS
1
rA 1
800
°C 1
400
HLd1
45
DELA
0
ALAr
420
IdLE

If the commands are different, contact your supervisor.

2.5.5 Press “Start”.

2.5.6 The lid of the kiln may be carefully opened when the temperature is below 100°C.

Note: **DO NOT TOUCH THE GLASSWARE, IT IS STILL HOT.**

2.5.7 The glassware is ready for use once the temperature is < 30°C.

2.6 Clean glassware which will not be used that day must be capped or sealed with aluminum foil to keep dust or other contamination from entering the glassware.

2.7 Dirty glassware should be rinsed with tap water as soon as possible after use and left in or near the sink.

3.0 PROCEDURE FOR CLEANING WET CHEMISTRY GLASSWARE

- 3.1 Glassware used for wet chemistry analysis is rinsed with tap water after use then placed in a dishwasher for proper cleaning. Use Alcojet low-foam powdered detergent and start dishwasher at normal settings. Let glassware dry in dishwasher then store in appropriate drawers face down. Volumetric flasks may need to be left out on a counter on a rack to completely dry overnight.
- 3.2 Visually inspect any glassware to be used for visible residues or contaminants. Rinse any glassware with visible residues with acetone and dry with nitrogen. Discard any chipped or cracked glassware.
- 3.3 Glassware used for trace limit tests such as chlorides, sulfates, arsenic & lead should be rinsed with dilute nitric acid then Nanopure water before use. Specific compendial methods or monographs will indicate if other special treatment is necessary.
- 3.4 Volumetric pipettes are cleaned using a pipette washer-rinser with basket and Pipettes are inserted into washer with tip facing up. When full, connect washer-rinser to DI water faucet using tygon tubing. Also connect outlet hose. Turn on DI water and let run for 1 hour. Remove basket and place individual pipettes on drying rack with tip facing upwards. Let stand for at least 1 day to fully dry. Replace basket in washer-rinser and fill to near full with DI water while adding 100ml of liqui-nox detergent.
- 3.5 Class A glassware (i.e. Volumetric flasks or pipettes) or plastic plugs should never be heated.
- 3.6 Loss on Drying bottles should only be washed by hand. Remove any powder with a Kimwipe then thoroughly rinse with DI water and let dry on a countertop. If residue is visible rinse with acetone and let dry.
- 3.7 Mortars, pestles and water bath crystalizing dishes should also be washed by hand using only DI water and drying with paper towels. Leave face-up to completely dry.

4.0 CLEANING VALIDATION

- 4.1 Because the extensive number of test materials and reagents encountered in the laboratory, validation of cleaning procedures can not be feasibly performed for all matrices. Glassware is qualified at time of use through the preparation and analysis of method blanks, using glassware cleaned and stored in the same manner as that used for the analysis of test articles.

- 4.2 Evidence of laboratory contamination or inadequacy of cleaning procedures, as evidenced in method banks or OOS results, is investigated under the Non-Conformance and CAPA program (SOP 270).

Uncontrolled When Printed