



STANDARD OPERATING PROCEDURE

Department: Quality Control	SOP No.:
Title: Cleaning of glassware used for chemical & instrumentation analysis	Effective Date:
Supersedes: Nil	Review Date:
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1.0 OBJECTIVE:

To lay down a procedure for cleaning of glassware used for chemical & instrumentation analysis.

2.0 SCOPE:

This SOP is applicable to cleaning of glassware, which is used for chemical & instrumentation analysis in the quality control laboratory.

3.0 RESPONSIBILITY:

Laboratory Assistant

Officer, Sr. Officer, Executive - Quality control

Head - Quality control

4.0 PROCEDURE:

4.1 All the unclean glassware's shall be collected in a tray and transferred in the washing area.

4.2 Drain the content of glassware & wash with running water.

4.3 Clean the glasswares with 0.1 % v/v solution of neutral detergent Extran (Merck) or Teepol B300. After use of detergent, glasswares shall be washed several times with running water.

4.4 During cleaning, the glasswares shall be thoroughly scrubbed with soft nylon brush selected for the shape and size of the glassware.

4.5 Glassware's shall be washed as quickly as possible after use. If delay is unavoidable the same shall be allowed to soak in water.

4.6 All the glassware's except Volumetric flask, Pipette, Burette and Measuring Cylinder after washing shall be finally rinsed with purified water & shall be dried in hot air oven at 60°C. After washing any glassware's are found broken (i.e burette and pipette tip broken) discard immediately.

4.7 All the cleaned glassware's shall be kept separately at designated place. The analogous volumetric flask such as 20mL & 25mL, 200mL & 250mL shall be store well separated in the laboratory.

4.8 New glassware shall be soaked for 2 to 3 hours in 1% v/v Hydrochloric acid before washing.



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- 4.9 Grease shall be removed by weak sodium carbonate solution or acetone.
- 4.10 While cleaning of hazardous and acid solution glasswares, Laboratory assistant must wear the appropriate protective wares.
- 4.11 Cleaning specific types of glassware's:**
- 4.11.1 Pipettes:**
- 4.11.1.1 Place pipette tips down, in a cylinder or tall jar containing 0.1 % v/v neutral detergent solution of Extran (Merck) or Teepol B300. Immediately after use Make sure that detergent level is enough to immerse the pipette.
- 4.11.1.2 Clean the pipettes under running water and finally rinse with purified water and place it in stand for draining & Drying.
- 4.11.2 Burettes:**
- 4.11.2.1 Remove the Stopcock and wash the burette with 0.1% v/v neutral detergent solution of Extran (Merck), or Teepol B300.
- 4.11.2.2 Clean the burettes under running water thoroughly and finally rinse with purified water.
- 4.11.2.3 Wash the stopcock separately before the stopcock is replaced in the burettes.
- 4.11.2.4 Invert the burette & place it in stand for draining and drying.
- 4.11.3 Thin Layer Chromatography chamber (Tank):**
- 4.11.3.1 Drain the content of chromatography chamber, after drain hung the tank on rack to dry.
- 4.11.3.2 Before analysis clean the tank with 0.1 % v/v solution of neutral detergent Extran (Merck) or Teepol B300. After use of detergent, tank shall be washed several times with running water. Followed by rinsing with purified water and finally rinsed with acetone. After rinsing hung the tank on rack to dry.
- 4.11.3.3 If this washing does not adequately clean the tank, then it should be dipped in the base bath (1 M Potassium Hydroxide or 1 M Sodium Hydroxide solution) (about 6-8 hour should be sufficient or left over night).
- 4.11.3.4 Remove the tank from base bath and rinsing with water and then wash with dilute nitric acid or dilute hydrochloric. Followed by rinsing with purified water and finally rinsed with acetone. After rinsing hung the tank on rack to dry.
- 4.11.3.5 Also if this washing does not adequately clean the tank, then it should be dipped in the acid bath



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(10% v/v solution of Hydrochloric acid in purified water, about 6-8 hour should be sufficient or left over night).

4.11.3.6 Remove the tank from acid bath (10% v/v solution of Hydrochloric acid in purified water) and rinsing with Running water. Followed by rinsing with purified water and finally rinsed with acetone. After rinsing hung the tank on rack to dry.

4.11.3.7 Still the solvent traces are not removing from the chromatographic chamber discard the chamber and use new chamber.

4.11.4 HPLC Vial and Plugs:

4.11.4.1 Remove the plug and content from HPLC vial and collect the vial and plug in glass beaker.

4.11.4.2 Wash vial and plug first with running water then dip in neutral detergent solution of Extran (Merck) or Teepol B300 to remove the contamination solution. Remove the Extra contamination by using sufficient quantity of running water.

4.11.4.3 Finally rinse the vials and plugs with purified water.

4.11.4.4 Keep the vial in oven for drying purpose.

4.11.4.5 After complete drying of vial, remove it from the oven and keep it in plastic bag or vial box in clean place.

Note: If required, sonicate the vials and plugs in a beaker filled with methanol or water as required

4.11.5 GC Vial:

4.11.5.1 Remove the cap, septa and content from GC vial and collect the vial in glass beaker.

4.11.5.2 Deep the entire vial in dilute hot nitric acid and sonicate for 10 minutes.

4.11.5.3 Wash the vials with running water then dip in neutral detergent solution of Extran (Merck) or Teepol B300 to remove the contamination solution. Remove the Extran contamination by using sufficient quantity of running water.

4.11.5.4 Finally rinse the vials with purified water.

4.11.5.5 Keep the vial in oven at 105° C for drying purpose.

5.0 ANNEXURE (S):

Nil



PHARMA DEVILS
QUALITY CONTROL DEPARTMENT

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6.0 REFERENCE (S):

SOP: Preparation, approval, distribution, control, revision and destruction of Standard Operating Procedure (SOP).

7.0 ABBREVIATION (S)/DEFINITION (S):

HPLC : High Performance Liquid Chromatography

v/v : Volume per volume

° C : Degree Centigrade

MI : Millimeter

GC : Gas Chromatography

REVISION CARD

S.No.	REVISION No.	REVISION DATE	DETAILS OF REVISION	REASON (S) FOR REVISION	REFERENCE CHANGE CONTROL No.
1	00	----	----	New SOP	-----