



Series 340: prepASH®

Automatic Analysis of Moisture and Sulfated Ash (Pharmacopoeia)

prepASH® Series 340 represents the highest level of thermogravimetric analysis and offers revolutionary improvement of sample preparation, analysis and documentation.



Sulfated Ash as per Pharmacopoeia

Ashing test procedures performed on pharmaceutical, polymer, and food samples frequently involve the use of sulfuric acid (H_2SO_4). Hot sulfuric acid vapour released during these procedures is both hazardous to analysts and corrosive to equipment. In addition to these complications, sulfated ashing procedures are typically labor-intensive and time consuming, requiring manual fuming of acid from crucibles.

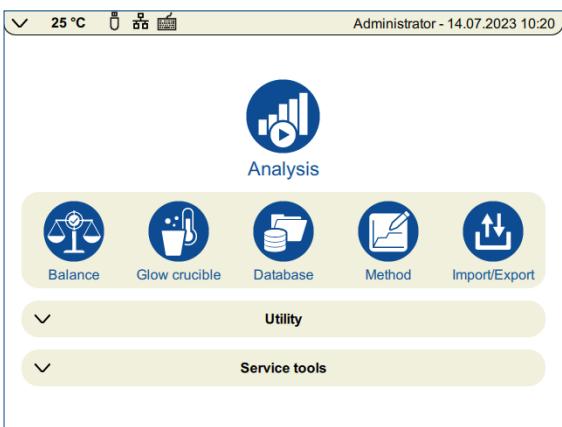
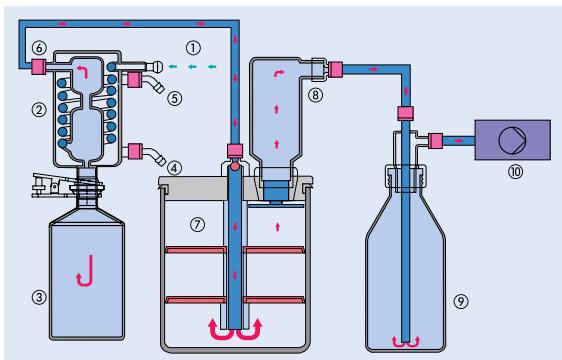
In prepASH® sulfated ashing system, sulfuric acid fumes released from crucibles inside the muffle furnace are continuously removed, through a quartz tube connected in to a water cooled condenser with receiving vessel and to the acid scrubber module.

prepASH® – Optimal Solution to Determine Sulfated Ash

Improved safety and efficiency. No more dangerous analysis with open flame. Automatic fuming of sulfuric acid under controlled conditions within closed prepASH. Condensing and washing of the gases in the connected scrubber. With prepASH®, analysis can be done in time slots unused or hardly ever used so far, e.g. at night.

Quality Management Protocol

- Fully automatic thermogravimetric analysis with end-point recognition replaces drying oven, muffle furnace and analytical balance
- 3 models in the prepASH® series 340, suitable for 12, 19 and 29 samples, are the optimum solution for each application
- Built-in high performance analytical balance 0.0001g
- Selectable atmosphere (N_2 , O_2 , Air)
- Evaporation of sulfuric acid directly in the prepASH®
- Connection of scrubber to remove acid vapours
- Easy operation of the instrument from colour touch screen built-in computer (Windows)
- Real-time evaluation of weight loss during the drying and ashing process is shown directly on the prepASH® display and via network on an external computer
- Various communication ports: Ethernet, 2 USB ports (for PC, Printer, Barcode reader, Keyboard)
- Printout: complete report with Graphics, Tables, Method and Statistics
- Error free protocols and reports



Sulfated Ash as e.g. Pharmacopoeia

Equipment

The toxic and corrosive vapour is removed and cleaned by the attached scrubber, B-415, consisting of a condenser with receiving vessel, a neutralization stage and an adsorption stage.

Method

Moisture and sulfated ash are run with one single weighing in. In the method temperatures of drying and ashing are defined and the time of addition of sulfuric acid and ammonium carbonate is set.

The sulfuric acid is evaporated at controlled temperature and the vapours are aspirated and cleaned by the connected scrubber. After drying and ashing to stable weight with automatic endpoint detection, you automatically get the protocol with moisture and ash results in chosen units.

Procedure

- Enter the crucibles into the carousel and tare all automatically
- Enter the samples and weigh in
- Drying step to stable weight
- Automatic opening of the cover to add sulfuric acid or ammonium carbonate
- Automatic evaporation of the acid and cleaning of the vapours
- Ashing to stable weight
- Automatic printout of the protocol

Standard Method with Oven	vs.	prepASH
Heating out crucibles for constant weight before		Possibility to pre-define a "heating out"
Measuring tare of crucible one by one		AUTOMATICAL PROCEDURE
Sampling		Sampling
Weighing + documentation of each crucible		AUTOMATICAL + entering the sample
Samples in drying oven + START	Dry Matter	START PROGRAM
Removing samples from oven + cool down		RESULTS (moisture)
Back weighing samples, calculation (moisture) and documentation		
Adding sulfuric acid		Adding Sulfuric acid
Slowly pre-ashing, fuming the acid manually		
Samples in muffle furnace	Sulfuric Ash	
Removing samples + cooling down in desiccator		
Calculation and documentation (ash)		RESULTS (ash)

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