

Sulfated Ash with prepASH[®] 340 Series

Sulfated Ash



105°C



Auto-Stop



3g



Moisture Content



Sulfated Ash

Ashing test procedures performed on pharmaceutical, polymer, and food samples frequently involve the use of H₂SO₄ resulting in sulfated ash.

As the “crude” ash sulphated ash may be used to indicate the level of known metal-containing additives or impurities in an organic material.

Hot sulfuric acid vapour released during these procedures is both hazardous to analysts and corrosive to equipment. In addition to these complications, sulfate ashing procedures are typically labour-intensive and time consuming, requiring manual fuming of acid from crucibles. Hot sulfuric acid vapour released during these procedures is both hazardous to analysts and corrosive to equipment. In addition to these complications, sulfate ashing procedures are typically labour-intensive and time consuming, requiring manual fuming of acid from crucibles.

The chemical background

The chemical background of doing sulfated ash instead of “crude” ash is to get the ash in a defined form:

When phosphorus is absent, barium, calcium, magnesium, sodium, and potassium are converted to their sulphates. Tin and zinc are converted to their oxides. Some minerals are essential to a healthy diet (e.g., calcium, phosphorous, potassium and sodium) whereas others can be toxic (e.g., lead, mercury, cadmium and aluminum).

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Pharmaceutical Industry:

Sulfated ash is the standard method of ashing in American and European pharmacopoeia.

The pharmaceutical industry and their suppliers therefore have to do sulfated ash.

- chemicals
- dry plants
- celluloses

Addition of sulfuric acid

Take the carousel of the prepASH.

Easy Pipetting of sulfuric acid in cold crucibles under the hood.



Pre-ashing and ashing

Safety: no manual fuming of toxic and irritating sulfuric acid.

Automatic fuming of sulfuric acid within closed prepASH condensing and washing of the gases in the attached scrubber.



| Working Steps of Moisture and Ash Determination | | |
|--|------------|--|
| Standard method with oven | vs. | prepASH® |
| Heating out crucibles for constant weight before | Dry Matter | Possibility for pre-define a "heating out program" |
| Measuring tare of crucible one by one | | AUTOMATIC PROCEDURE |
| Sampling | | Sampling |
| Weighing + documentation of each crucible | | AUTOMATIC + entering the sample name/ID |
| Samples in drying oven + START | | START PROGRAM |
| Removing samples from oven + cool down | | RESULTS (moisture) |
| Back weighing samples, calculation (moisture) | | |
| Pre-ashing with rapid incinerator or hot plate | Ash | RESULTS (ash) |
| Samples in muffle furnace | | |
| Removing samples + cooling down in exicator | | |
| Back weighing for stable results (repeat?) | | |
| Calculation and documentation (ash) | | |