Wet Digester B-440

en

It's quick, it's precise, it's efficient

The Buchi Wet Digestion System allows an ecological preincineration of your samples. It automatically removes and neutralizes the acid fumes, preventing contamination of lab and outdoor air by these corrosive fumes. In addition, laboratory fume exhaust and ventilation systems are protected from corrosion.

Applications:
The wide temperature range (100–550 °C) allows for many uses:

- ash determination
- sulfate ash determination
- wet incineration
- evaporation of volatile acids and bases
- heating of samples (e. g. for reactions) etc.

In addition to neutralizing the emissions the Wet Digestion System improves efficiency and safety.
Sulfated ash determination is a standard test method with a broad range of applications in pharmaceutical production, food quality control, environmental testing and many other areas. The sample is ashed in the presence of acid (usually sulfuric). Conventional methods of wet digestion produce corrosive sulfuric acid fumes from open crucibles heated by a hot plate in the fume hood. The consequences of the conventional method are:

- Contamination of laboratory air due to use of a limited capacity fume hood.
- Corrosion as well as contamination of the fume hood by acid fumes, eventually resulting in the very costly replacement of the complete fume exhaust system including the exhaust motor and ducts.
- Pollution of the environment from acid fumes exhausted by the fume hood's exhaust system.

Pharmaceutical

Chemical

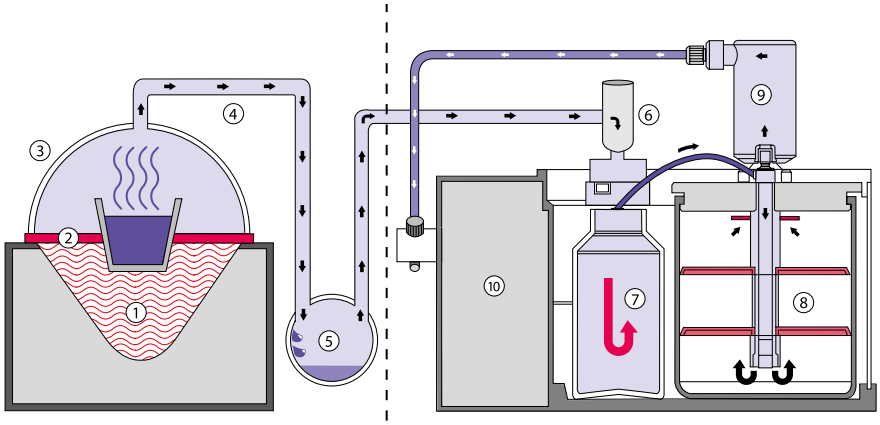
Food

The advance in sulfate ash determination – clean air and intact exhaust air systems

Buchi has eliminated these consequences. All acid fumes are removed and neutralized.

The Wet Digester System is made up of two main components, i.e. the Wet Digester B-440 and the Scrubber B-414: The samples are placed in the Wet Digester B-440 for preincineration. Since each set of samples can be different, the heat source (a halogen lamp) can be programmed to produce an optimum temperature versus time profile for each set of samples and stored for recall at a later time. Once the program starts, the acid fumes produced are removed and neutralized by the Scrubber B-414. Subsequently the neutralized fumes are emitted without polluting the environment. Therefore, the consequences of contamination, corrosion and pollution are eliminated with the B-440/414 System. By this means the emissions are reliably under control – **an investment which soon pays for itself, reliable and ecologically safe.**

Wet Digester B-440 **Scrubber B-414**



① *Fast reaction halogen lamp*
② *Glass ceramic plate and crucibles*
③ *Transparent glass hood*
④ *Acid fumes removed by vacuum pump in Scrubber B-414*
⑤ *Condensate trap*
⑥ *Cold trap*
⑦ *Receiving vessel*
⑧ *Acid fumes scrubbed and neutralized in a basic solution*
⑨ *Adsorption stage*
⑩ *Fume exhaust pump*

Sulphated ash determination with B-440 follows the method of the European Pharmacopoeia.
P. Petrin, H. Partenmeier, Pharmeuropa vol. 9 No 1., March 1997

Programmable
Nine storable temperature programs with five temperature/time levels each guarantees a reproducible heating-up profile. A process in progress remains stored for up to three minutes even in the case of power failure. The program data are preserved.

Fast reaction
The halogen lamp quickly achieves the maximum heating temperature of approx. 550 °C in each crucible with minimal heat loss.

Visibility
Glass hood permits visual inspection of the samples at all times.

High sample throughput
The B-440 permits wet ashing in 4 to 6 crucibles simultaneously.

Technical data

	Wet Digester B-440	Scrubber B-414
Mains voltage	220–240 V	230 V
Frequency	50/60 Hz	50 Hz
Power consumption	1100 W	140 W (230 V)
Currrent consumption (230 V)	5 A	1 A
Dimensions in mm (W x H x D)	470 x 290 x 370	260 x 450 x 480
Weight	12 kg	13 kg

Order information

	Order no.
A Basic System incl. B-440 and B-414	
230 V/50 Hz	37531

	Order no.
B Glass ceramic plates	
with 6 openings, Ø 39 mm	26661
with 4 openings, Ø 48 mm	36676
with 4 openings, Ø 56 mm	26663
no openings	26982

	Order no.
C Ceramic crucible (à 1 pcs.)	
Ø 40 mm, H = 32 mm deep, V = 20 ml capacity	26936
Ø 50 mm, H = 40 mm deep, V = 49 ml capacity	36675
Ø 60 mm, H = 48 mm deep, V = 90 ml capacity	26938

Wet Digester System
The complete system of the Wet Digester comprises 1 Digester B-440 and 1 Scrubber B-414 including the connection tubing, condensate trap and power cable. Standard accessories are 1 ceramic plate and corresponding ceramic crucibles. Please refer to the adjacent table for the appropriate order number.

Important: A fully operable system comprises one each of the order numbers for **A**, **B** and 6 respectively 4 of **C**.

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