

BEJU 10 BERGMAN-JUNK TEST APPARATUS

Product Datasheet

The instrument for determination of thermal stability according to the Bergman-Junk procedure at 120 and 132 °C is designed for evaluation of thermal stability of nitrocellulose, smokeless powders or propellants. This test is based on the quantitative determination amount of gaseous products evolved during the thermal decomposition sample in glass adapter filled by water. The amount of gaseous products is estimated by volumetric analysis of acidity of water extract.

APPLICATIONS

Bergman-Junk test is one of the several methods for quantitative determination of thermal stability of propellants. These tests are based on the quantitative determination of the amount of gaseous products evolved during the thermal decomposition of the sample of propellant.

INSTRUMENT DESCRIPTION

The Bergman-Junk test instrument consists of a heating block made of aluminium with 8 or 18 internal holes for glass tubes. The glass tubes with the tested samples are enclosed by a special glass adapter filled by distilled water. The glass tubes are then inserted into holes in a heating block. The temperature of the block is controlled by a digital temperature controller. The controller unit contains an independent alarm circuit off the heating if the temperature accidentally increases above a specified safety limit (controlled by and the limit controller). Temperature in the heating blocks is controlled and corrected using calibrated mercury thermometers or calibrated digital thermometer.

This instrument enables measurement of up to 8 or 18 samples with individual time of exposure for each one, but further models of heating block with different number of the holes are available on request.



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TECHNICAL PARAMETERS

Main Unit

| | |
|-------------------------------|-------------------|
| Material: | ABS plastic box |
| Dimension: | 160 × 90 × 250 mm |
| Weight: | 1.3 kg |
| Temperature control accuracy: | ± 0.1 °C |
| Maximum power consumption: | 600 VA |

Heating Block

| | |
|----------------------|----------------------------------------------|
| Material: | Aluminum block, Stainless steel case |
| Temperature range: | 50 - 150 °C |
| Weight: | approx. 35 kg |
| Dimensions: | cylinder with 370 mm diameter, 320 mm height |
| Number of holes: | 10 |
| Dimensions of holes: | diameter 22 mm, depth 200 mm |

Test Tubes

| | |
|---------------------------------------------------------|-------------------------|
| Length/diameter/conical part: | 360 mm/19 mm / NZ 19/26 |
| Globe extender conical part I /length /conical part II: | 19/26 / 360 mm / 14/23 |
| Ground joint stopper: | NZ 14/23 |

STANDARD INSTRUMENT PARTS

| | |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BEJU-10HB-8 | Aluminium heating block - 8 holes (diameter 22 mm, depth 200 mm) - stainless steel head plate - maximal temperature 160 °C - 2 inbuilt independent temperature sensors |
| TC-IC-02HTH | Temperature controller unit - temperature controller (accuracy ± 0.1 °C) - including limit controller |

CONSUMABLES

| | |
|------------|-------------------------------------------------------|
| BEJU-10GTT | Glass test tube (20 pcs) - diam. 18 mm, length 350 mm |
| BEJU-10EL | Globe extender and ground joint stopper (20 pcs) |

OPTIONAL ACCESSORIES

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|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DIG-T200 | Calibrated digital thermometer - 0 - 200 °C / 0.1 °C - sensor Pt 100 (length 230 mm) |
| BEJU-10HB-18 | Aluminium heating block - 18 holes (diameter 22 mm , depth 200 mm) - stainless steel head plate - maximal temperature 160 °C - 2 inbuilt independent temperature sensors |

SHIPPING DATA

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|---------------------------------|-----------------|
| Package dimensions (W x L x H): | 60 x 60 x 60 cm |
| Package gross weight: | 60 kg |
| Custom code: | 9027 80 97 |

INSTALLATION REQUIREMENTS

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|----------------------------------------------------------------------------------------------------|
| Space requirements (Heating block unit): D x H: 350 x 350 mm; Weight: 40 kg |
| Space requirements (Temperature controller unit): W x L x H: 210 x 300 x 140 mm; Weight: 4.5 kg |
| Electric power source: 230 V / 50 Hz, 500W |
| Flameproof working desk for heating block unit |
| Fume hood or local exhaust for heating block unit |