



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
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Technical Specifications of Planetary Micro Mill Unit
RFx No. 6100001030 (Reference No. 1000022298)

1. Maximum feed particle size – up to 5 mm
2. Final fineness $\leq 0.1 \mu\text{m}$
3. Minimum Sample Quantity: 0.5 ml
4. Maximum Sample Quantity: 30 ml
5. Rotational Speed of Main disk should be 100 - 1100 rpm.
6. Maximum speed of grinding bowls should be 2200 rpm.
7. High energy milling up to 95 g.
8. Short milling times
9. Dry and wet grinding should be possible.
10. Grinding bowls, lid, seal rings, balls specifications:
 - (a) 2 Zirconium oxide bowls with lid and casing of 45 ml volume.
 - (b) 2 hardened stainless steel bowls with lid and casing of 45 ml volume.
 - (c) 20 replacement seal rings.
 - (d) 5 mm (500 pieces) and 3 mm (2 sets of 100g) diameter grinding balls made of each of the zirconium oxide and hardened stainless steel should be offered.
 - (e) Elemental analysis of Zirconium Oxide should be as follows. Zirconium oxide 94.2 – 95.2 %, Hafnium Oxide 1 – 2%, Magnesium oxide – 3.5%, Silicon dioxide – 0.1%, Aluminium oxide – 0.1%.
 - (f) Elemental analysis of Hardened Stainless Steel should be as follows. Iron (Fe) 81.4%, Chromium (Cr) 17%, Carbon (C) – 1.1%, Molybdenum (Mo)– 0.5%
 - (g) 2 gassing lids with valves for Zirconium oxide bowl
 - (h) 2 gassing lids with valves for hardened stainless steel bowl.
 - (i) 1 special emptying device for the 45 ml jars.
 - (j) 1 counterweight for grinding bowls of 45 ml volume for weight compensation.
11. Vendor should attach list of at least 3 satisfactory installations of quoted instrument in India.
12. Vendor should provide complete installation and demonstration of the equipment.
13. Bench top model with high grinding performance
14. No Loss grinding, even in suspension.
15. The mill should have facility of continually monitoring and recording the data of gas pressure and temperature during the grinding process.
16. The mill should have easier logging facility.
17. Compensation of unbalance of all grinding bowls using a compensation mechanism which is easy to operate.
18. Grinding chamber cooled by built-in to permit longer grinding times.
19. Programmable interval and break times and rotation direction (clockwise & anti clockwise)
20. Absolutely reproducible grinding parameters with use synchronous belts for transmission.
21. Simple cleaning of grinding elements.

22. Effective diameter of main disk should be 140 mm.
23. Transmission ratio should be 1: -2
24. The offered instrument should have CE certificate.
25. Warranty: 3 years