

S. No	Equipment/s (Item with Specification) <i>(Radon-Thoron Monitor)</i>	Quantity
3	<p>SRM (With Radon mass exhalation Chamber) Radon-Thoron Monitor and Accessories 3.1 PORTABLE RADON-THORON MONITOR Specifications:</p> <ol style="list-style-type: none"> 1. Detector type : ZnS: Ag scintillation detector 2. Scintillation volume : ~ 0.15 L 3. Sensitivity : > 1 CPH/(Bq/m³) for Radon > 0.7 CPH/(Bq/m³) for Thoron 4. Sampling type : Both Diffusion and Flow with interchangeable sampler 5. Sampling pump : Inbuilt noiseless pump with Auto / manual control of power to pump 6. Sampling volume : 0.5 to 1 L/min 7. Measured quantity and its measurement interval : Radon mode : User selectable 15 / 60 min Thoron mode : User selectable 15 / 30 / 60 min Alpha mode : User settable 1 to 999 min 8. Response time for Radon and thoron measurement : 95% of radon value is to be attained within an hour 95% of Thoron value is to be attained within 5 minutes 9. Minimum detection limit : 15 Bq/m³ at 1 σ and 1 h cycle for radon / thoron 10. Upper detection limit : 10 MBq/m³ 11. Thoron interference in radon : < 5% with sniffing mode of sampling 12. Display : LCD touch screen display indicating the current measurement process and also capable of displaying the past measurements with a on-screen key press during on-going measurement. 13. Date storage memory : Memory with storage capacity of at least 30,000 readings 14. Data communication : 2-wire RS 485 data communication with USB data port at PC end. 15. Inbuilt sensor : Temperature and Relative humidity sensor inside monitor 16. Operating power : Internal DC Battery operated with backup up to 30 hr Continuous use with 110- 240 V AC 50 Hz main supply. 17. Dimension and weight : Portable equipment having dimensions within 35 cm x 20 cm x 14 cm and weight less than 4 Kg 18. Carrying case : Instrument carry case with sufficient cushioning for safe transport of equipment during field use. 19. Software : > PC end software with following functions & features: RS485 based data communication with radon monitor > Display of current readings and trend from multiple 	One Set

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	units ➤ Data downloading in online and offline mode Long distance data communication range Remote operation of Software	
radon monitor through		
3.2 Mass Exhalation Chamber:	To measure radon/thoron mass exhalation rate (per unit mass) and surface exhalation rate (per unit exposed surface area) from Powder samples	
Specifications:		
Internal dimensions:	100 mm Diameter × 50 mm height	
Volume:	0.4 Litre	
Sampling:	Both diffusion and flow mode	
Lid sealing to chamber:	Threaded	
Lid sealing to detector:	Threaded compatible to SRM detector and flow mode sampling lid.	
Material:	Aluminium	
Flow mode sampler:	Threaded disc with two 5 mm nozzles (or std. size)	
3.3 Water Bubbler (Sampling) Kit :	To measure radon/thoron dissolved in water/liquid sample (per unit liquid volume)	
Specifications:		
Kit contents:	Sampling bottles – 10 Nos. Bubbler – 2 Nos. 500 ml capacity syringe with 10 cm long nozzle – one No. packed in a hard carry case	
Sample capacity:	50 ml	
Head space volume:	50 ml	
Material:	Borosilicate glass	
3.4 Soil probe:	To measure in-situ radon/thoron in pore space of soil.	
Specifications:		
Probe length	1 meter	
Hammering tool:	500 gm hammer.	
Sampling connector:	5 mm size nozzle – one No.	
Probe handle:	Detachable handle for removing the probe from ground	
Material:	Hard S.S.	
3.5 Thoron accumulator	To measure in situ thoron flux (per unit area of surface)	
Specifications:		
Internal dimensions:	60 mm Diameter X 40 mm height	
Volume:	100 ml approx.	
Surface area:	28 cm ²	
Sampling:	Flow mode by two nozzles attached on the chamber walls at 2 cm and 4 cm from bottom and opposite to each other.	
Insertion depth mark:	Marking at one cm height along perimeter for indicating insertion depth of accumulator in soil.	
Material:	Aluminium	
Sealing on surface:	Soft gasket (removable) at edge for mounting on plane surface	


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