MTT - Carbon14-Tritium Furnaces

General Information

This apparatus uses catalyst assisted combustion techniques to give a clean and precise approach to extracting carbon-14 & organically bound tritium or ‘fixed tritium', eg tritium contained in concretes, steels and graphites, as well as ‘free water'.

A catalyst is used to ensure complete combustion of all thermal decomposition products. These are captured for liquid scintillation assay. This technique gives greater confidence of complete combustion than ‘wet oxidation' techniques and avoids coloured contamination of scintillation media by botanical samples.

Computer control enables remote operation of multiple or individual units even in hazardous areas.

Standard Features

- 2-zone tube furnace configured for capture by combustion of organically bound carbon-14 and tritium
- Large sample capacity up to 20 ml provides more accurate determinations
- Originally developed in partnership with AEA Technology
- 2 quartz glass work tube assemblies
- 6 combustion boats
- Three sets of glass gas bubblers (12 in total)
- All connectors including the molecular sieve waste aerosol trap
- Unique catalyst optimisation manifold
- 6 copper wire catalysts
- 3508P1 20 segment programmable temperature control for sample specific combustion protocols
- Over-temperature protection of both heated zones
- RS485 communications & control
- Eurotherm iTools allows software storage & recall of specific sample protocols
- Free from plastic or rubber components into which tritium can migrate
- A comprehensive process instruction manual

Options

- Additional sets of bubblers (sets of 4)
- Additional sets of combustion boats (sets of 6)
- Additional work tubes
- Additional copper catalyst (sets of 3)

Technical Specifications

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MTT 12/38/850	
Max temp (°C)	1200
Dimensions: Heated tube length (mm)	850
Dimensions: External H x W x D (mm)	430 x 900 x 375
Dimensions: Furnace body length (mm)	900
Max power (W)	3100
Thermocouple type	N
Weight (kg)	60
Power supply	220V - 240V, 50-60Hz, single phase

Please note:
- Maximum continuous operating temperature is 100°C below maximum temperature