VF NUCLEAR

NUCLEAR POWER PLANTS | WASTE MANAGEMENT | RESEARCH CENTRES | INDUSTRY & MANUFACTURING

DJ-500

DESORPTION UNIT

MAIN ADVANTAGES

- Desorption of various types of silica gel to allow subsequent lab assessment of tritium absorption using silica gel samples
- Also allows re-cycling of the silica gel used in the V3H14C series samplers
- The combination of an appropriate high temperature and negative pressure ensure a very high efficiency of desorption
- The user can set the temperature and duration of the desorption process

PURPOSE

The DJ-500 desorption unit is an ancillary equipment for the V3H14C series samplers used for H-3 and C-14 monitoring in primarily gaseous effluents from nuclear power plants or sites with research reactors. The sampler captures tritium in the form of water molecules in the sampling hygroscopic material, silica gel is used as standard.

The desorption unit is intended for the subsequent off-line desorption of the water captured in the Silica gel and production of condensate for laboratory evaluation of radionuclide content

The basic principle of DJ-500 is to heat the silica gel in the drying box, so the water is released in the form of water vapour.

DJ-500 allows user's setting of heating temperature and desorption time. When suitable values are set, some types of silica gel can be used repeatedly. During the desorption, the air is sucked from the drying box using the vacuum pump and this helps to remove the water vapour released from the silica gel by heating. The vapour is then driven to the cooling box where it is rapidly cooled down and condenses into water. As the cooling medium for the cooling box, dry ice or liquid nitrogen can be used.

The water captured from the cooling box can be then analysed, and the content of tritium captured by the sampler can be evaluated.

SPECIFICATION

Time of desorption	60 – 9 999 min
Temperature of heating	100 – 160 °C
Maximum. negative pressure for desorption	-99,9 kPa
Efficiency of desorption	>99 %
Volume of sorbent vessel	1 dm^3
Volume of cooling medium	1 dm^3
Quantity of captured water	max. 50 g
Dimensions (W × H × D)	445 × 700 × 300 mm
Weight	15 kg
Power supply	230 V AC, 50 Hz

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OPTIONAL ACCESORIES

1-0303-00012	Silica gel with an orange water saturation indicator
50-P-0012963	Spare condensation vessel for the cooling box

RELATED PRODUCTS

V3H14C	Tritium and Carbon-14 Sampler

Tritium and Carbon-14 Sampler

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