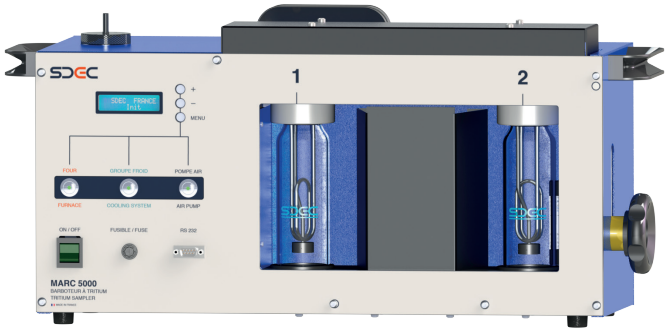
SOLUTIONS TECHNOLOGIQUES POUR L'ENVIRONNEMENT

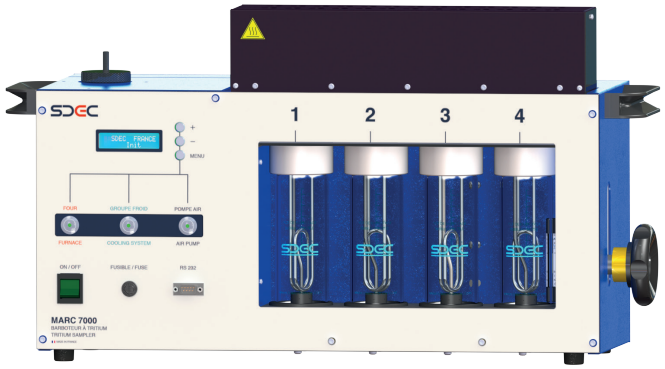
TRITIUM BUBBLERS MARC 5000/7000

Sampling of HTO and non-HTO tritiated gases in compliance with NF ISO 20045 & NF ISO 20041-1 standards

MARC 5000
HTO tritium bubbler



MARC 7000
HTO + non-HTO tritiated gases bubbler



DESCRIPTION

MARC 5000/7000 bubblers allow sampling of atmospheric tritium in its different forms by bubbling air at constant flow :

- **HTO only**
- **HTO + non-HTO tritiated gases**

Tritium in its HTO vapor form is trapped by bubbling air in water. Other forms of tritium are oxidized in a catalytic furnace before being trapped by bubbling. The tritium activity is measured in the collected samples on a daily, weekly or monthly basis using a liquid scintillation counter. Obtained results are used to determine volumetric activity of the air *(Bq/m3)*.

ADVANTAGES

- **Limited evaporation of trapping solution in compliance with NF ISO 20045 standard.**
- Enhanced trapping yield (test report CRI230011-A) :
  - HTO = 99 +/- 7%
  - HT>HTO conversion = 98 +/- 11%
- Air flow verification using a certified COFRAC standard
- Catalytic furnace for non-HTO tritiated gases to HTO conversion, calibrated at 450 °C
- Dynamic sealing device facilitating the replacement of bubbling vials

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TRITIUM BUBBLERS MARC 5000/7000

Sampling of HTO and non-HTO tritiated gases in compliance with NF M60-312 & NF M60-822-1 standards

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FEATURES

- Air flow regulation from 10 to 50 SLPH (Standard Liter Per Hour), calibrated and verified using a COFRAC certified flowmeter.
- Air flow standardization temperature reagulated in 0 à 25°C range.
- Automatic air flow regulation.
- Palladium/alumine catalytic furnace with temperature regulation from 200 to 500°C, calibrated at 450°C.
- Sound alarm in case of sampling faults.
- Cooling system to maintain the trapping solutions average temperature at 7°C (for an ambient temperature at 20°C) limiting the losses by evaporation.
- Realtime display of sampling parameters : Air flow, standardiation conditions, duration, sampled volume, furnace and cooling temperatures.
- Recording and reporting of the last 8 alarms via RS232 output.

TECHNICAL SPECIFICATIONS

	MARC 5000	MARC 7000
	Technical	
Tritium form	HTO only	HTO + non-HTO tritiated gases
Catalytic furnace T°	NA	200 to 500°C
Cooling T°	optional	7°C (for an ambiant T° of 20°C)
Air flow	10 to 50 SLPH	
	Environmental	
Operating T°	+2 à +45 °C	
Storage T°	-5 à +70 °C	
Air relative moisture	5 à 90%	
Protection index	IP30	
Display	Backlit LCD screen	
	Mechanical	
Dimensions L x H x D (mm)	700 x 356 x 270	
Footprint L x H x D (mm)	1000 x 600 x 530	
Weight (kg)	15*	29
	Electrical	
Power supply	230V 50Hz (available in 110V 60Hz)	
Electric protection	30mA differentila breaker & 6A delayed fuse	
Max power (Watts)	260	700

Consumables	
Set of 4 bubbling vials	**111920003**
Paper filters (x25)	**111920004**
Coolant (300ml)	**111920006**
SI450 lubricant en syringe	**111920001**
MARC5000 / 1 year consumable kit	**111920009**
MARC7000 / 1 year consumable kit	**111920007**

Accessories	
Condensation collector tray	**111910010**
Condensation collector tank (2l)	**111910011**
Stainless steel babbuling vials rack (8 vials capacity)	**0110111**
Stainless steel bubblers' table	**0103500**
Fixation kit for MARC5000/7000	**0103700**

**The weight of MARC 5000 with optional cooling system is 27 kg.*

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