PASSIVE TRAP PA[3]

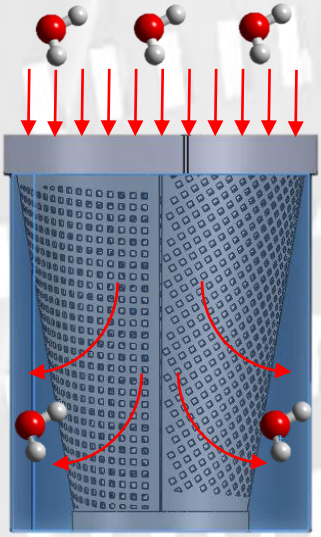
SMART SOLUTION OF PASSIVE SAMPLING OF TRITIUM

Based on a new method patented by the Institute of Radioprotection and Nuclear Safety (IRSN in France), SMART PA3 is the complete answer to the continuous and passive air radioactive tritium sampling. In close collaboration with the IRSN, E2S Innovation has developped a full solution, self-contained and easy to deploy, also well suited to routine surveillance only in emergency situations or to the radiation protection of workers. PA3 (PATRI) is a novel device to trap passively atmospheric tritium (HTO) representative of the monitored environment.

HOW IT WORKS

The PA3 passive trap consists of a tapered cartridge welcoming a molecular sieve (adsorbent material) which collected preferentially atmospheric tritium in proportion constant regardless of the relative humidity. Geometry has been designed to facilitate the transport of molecules from the air to the device of trapping through the property of molecular diffusivity of gas.
A negative pressure gradient is maintained between a normalized opening (establishing the sampling period) and the media of trapping realizing the role of SLPP and adsorbent tritiated water linearly and without saturation effect.

The principle of the PA3 technology allows samples of the weather of low activity without effect of dilution, as well as releases to strong activities.



TECHNICAL SPECIFICATIONS

- Pre-filled cartridge (molecular sieve) and regenerable after use
- Stainless steal 304L
- Molecular sieve Zéolite 13X
- Number of openings selectable : 1, 2, 10, 15 et 30 days de sampling
- Weight < 600 grams

FROM THE FIELD ... **TO THE LABORATORY**

SAMPLING FROM 1 DAY TO 1 MONTH → Trap transport → DESORPTION → Sample H2O → LIQUID SCINTILLATION → Data collected to the ground → **Activity HTO Bq.m^{-3}**

During the picking process realized using PA3 the **user is pro-player** : it can monitor anytime in real-time the tritium sampling quality indicators. Equipped with a contactless technology, PA3 is vector information carrying the data collected on the ground. PA3 trap, arriving at the lab, is identified and transmit useful data in the calculation of the activity concentration of atmospheric tritium.

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$_3$T RANGE

The new solution for monitoring radioactive tritium