

H-3 TRITIATED COMPOUNDS

BETA, EMax 19 keV T1/2 12.35y

HSE NOTIFICATION LEVELS* : for work with tritium 1 GBq
for accidental release, spillage, loss or theft of tritium 1 TBq

CONTROLLED AREA may be required if activity exceeds 33 GBq for tritiated water and 14 GBq for organically bound tritium (depending upon volatility of material).

SUPERVISED AREA will be required if activity exceeds 10 GBq, but may be used at much lower levels to avoid the possibility of cross-contamination.

ANNUAL LIMIT OF INTAKE (ALI) for tritiated water 1.1 GBq
(equivalent to dose of 20 mSv) for organically bound tritium 470 MBq

(*Notification levels - notification is to the H.S.E. if these are exceeded.)

Special Considerations and Monitoring

Some compounds may penetrate gloves and skin. Take note of the user precautions provided by the supplier.

The only areas likely to require designation as supervised or controlled areas are those where quantities of tritiated water in excess of 10 GBq are used for the labelling of tritiated compounds. All other work with lesser amounts can take place in non-designated areas which have been registered for radioactive work with Safety Services. However, work with trace amounts should always be segregated from work with large quantities of material. Whatever the level of work, there is the responsibility to keep doses as low as reasonably practicable. In order to meet this requirement, strict adherence to the laboratory rules is essential and wipe tests should be made on a regular basis to ensure that contamination is being kept to a minimum. It would be reasonably practicable to keep contamination below 37 Bq/cm² as this represents approximately 22,000 dpm on a scintillation counter for a wipe of 100cm², and assuming 10% efficiency of removal of contamination. The frequency of monitoring will be dependent upon the usage of the isotope. For amounts up to 37 MBq/month - once per month would be satisfactory. For amounts greater than this, the wipe tests should be made after each batch of isotope has been used. Urine samples should be submitted for analysis whenever quantities in excess of 1 GBq have been used.