^3H	Nuclide Safet ata Sheet H d ogen-3 [T itium] www.nchp .org	^3H

I. PHY ICAL DATA

Radiation: eta (100 abundance)
Ene g : Max.: 18.6 keV; Ave age: 5.7 keV
Half-Life [T½] : Ph ical T½: 12.3 ea
iological T½: 10 - 12 da
Effective T½: 10 - 12 da *
* La ge liquid intake (3-4 lite /da) educe effective T½ b a facto of 2+; ^3H i ea il flu hed f om the bod
Specific Activit : 9650 Ci/g [357 T q/g] max.
eta Range: Ai : 6 mm [0.6 cm; 0.25 inche]
Wate : 0.006 mm [0.0006 cm; 3/10,000 inche]
Solid /Ti ue: in ignificant [No ^3H beta pa th ough the dead la e of kin]

II. RADIOLOGICAL DATA

Radiotoxicit [1]: Lea t adiotoxic of all nuclide ; CE E, inge tion o inhalation:
T itiated wate : 1.73E-11 Sv/ q (0.064 m em/uCi) of ^3H intake
O ganic Compound : 4.2E-11 Sv/ q (0.16 m em/uCi) of ^3H intake
C itical O gan: od wate o ti ue
Expo u e Route : inge tion, inhalation, punctu e, wound, kin contamination ab o ption
Radiological Haza d: Exte nal Expo u e - None f om weak ^3H beta
Inte nal Expo u e Contamination - P ima conce n

III. HIELDING

None equi ed - not an exte nal adiation haza d

IV. DO IMETRY MONITORING

U ine bioa a i the onl eadil available method to a e intake [fo t itium, no intake = no do e]
e u e to p ovide a u ine ample to Radiation Safet wheneve ou monthl ^3H u e exceed 100 mCi, o afte an accident/incident in which an intake i u pected

V. DETECTION & MEA UREMENT

Liquid Scintillation Counting i the onl eadil available method fo detecting ^3H
NOTE: PORTA LE SURVEY METERS WILL NOT ETECT LA ORATORY QUANTITIES OF ^3H

VI. PECIAL PRECAUTION

- Avoid kin contamination [ab o ption], inge tion, inhalation, injection [all oute of intake]
- Man t itium compound eadil penet ate glove and kin; handle uch compound emotel and wea double glove , changing the oute pai at lea t eve 20 minute .
- While t itiated NA p ecu o a e con ide ed mo e toxic that ^3H_2O, the a e gene all le volatile and hence do not no mall p e ent a g eate haza d
- The inabilit of di ect- eading in t ument to detect t itium and the light pe meabilit of mo t mate ial to [t itiated] wate h d ogen [t itium] facilitate undetected p ead of contamination. U e ext eme ca e in handling and to age [e.g. ealed double o multiple containment] to avoid contamination, e peciall with high pecific activit compound .

[1] Fede al Guidance Repo t No. 11 [Oak Lccccccccccc T c T c Wv e . P c Wv e . P W1 e L : 1 c T c W: e L ((R