



>>Entry Name: Tributylfluorostannane, 9Cl, 8Cl

Synonym(s): Tributyltin fluoride

CAS Registry Number: 1983-10-4

$(\text{H}_3\text{CCH}_2\text{CH}_2\text{CH}_2)_3\text{SnF}$

Molecular Formula:  $\text{C}_{12}\text{H}_{27}\text{FSn}$

Molecular Weight: 309.054

Accurate Mass: 308.111878

Percentage Composition: C 46.64%; H 8.81%; F 6.15%; Sn 38.41%

Source/Synthesis: Synth. from  $\text{NH}_4\text{F}$  and Hexabutyl-distannoxane [GGH50-Z](#)

Use/Importance: Used as a marine antifoulant. Converts silyl enol ethers to tin(IV) enolates which may substitute ArBr in the presence of Pd complex catalysts. With  $\text{Sn}(\text{OTf})_2$ , involved in chiral aldol reactions between aldehydes and enol ethers in the presence of chiral amines

Physical Description: Needles

Melting Point: Mp 250° (252-279°). Mp 269-271°

Other Data: Subl. >200°

Hazard & Toxicity: LD<sub>50</sub>(rat) 200 mg/kg

Fluka: 90912

Rare Chemicals Library: S62756-9

#### References:

- Brown, D.H. *et al.*, *Spectrochim. Acta*, 1965, **21**, 1013, (*ir*)  
Gielen, M. *et al.*, *J. Organomet. Chem.*, 1968, **12**, 363, (*ms*)  
Lorberth, J., *J. Organomet. Chem.*, 1969, **17**, 151, (*synth, pmr*)  
Dunn, P. *et al.*, *J. Organomet. Chem.*, 1970, **23**, 459, (*synth*)  
Hackmeyer, M. *et al.*, *J. Chem. Phys.*, 1971, **54**, 3739, (*Sn-119 Mössbauer*)  
Kuwajima, I. *et al.*, *J.A.C.S.*, 1982, **104**, 6831, (*use, desilylation of silyl enol ethers*)  
Urabe, H. *et al.*, *J.A.C.S.*, 1983, **105**, 5703, (*use, desilylation of silyl enol ethers*)  
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Harris, R.K. *et al.*, *Chem. Phys. Lett.*, 1985, **115**, 16, (*Sn-119 solid state nmr*)  
Kobayashi, S. *et al.*, *Chem. Lett.*, 1989, 297, (*use, aldol reaction*)