>>**Entry Name: Triphenylstibine,** 9CI
Synonym(s): Triphenylantimony

CAS Registry Number: 603-36-1

$SbPh_3$

Molecular Formula: $C_{18}H_{15}Sb$
Molecular Weight: 353.066
Accurate Mass: 352.021196
Percentage Composition: C 61.23%; H 4.28%; Sb 34.48%

Source/Synthesis: Synth. from $SbCl_3$ and PhLi or PhMgBr
Use/Importance: Antioxidant; antifoggant; catalyst for alkylation, dimerisation and polym. reactions; co-catalyst with $TaCl_5$ for alkyne polym. and with $MoCl_5$ for polym. of PhC≡CCl; activator for $PdCl_2/CuI/I_2$ catalysed homocoupling of $(PhC{\equiv}C)_2Mg$ to diphenylbutadiyne; with $TiCl_4$ and Na, catalyst for polym. of 1-alkenes; converts Br_2 $C(COOMe)_2 \rightarrow BrCH(COOMe)_2$; promotes Reformatsky reaction of α-halo esters with aldehydes; affects cyclopropanation of enones and unsatd. esters by $Br_2C(COOR)_2$ but in low yield; ligand for many heavy metals
Physical Description: Prisms (EtOH, petrol, or Me_2CO aq.)
Melting Point: Mp 53-57° (52-54°, 50°)
Boiling Point: Bp 377° (extrap.). Bp_{10} 220°. $Bp_{0.3}$ 185°
Other Data: With $Pd(OAc)_2/Et_3N$ yields biphenyl. V. reactive to halogens: $Cl_2 \rightarrow$ Dichlorotriphenylantimony GGN65-L, $F_2 \rightarrow$ Difluorotriphenylantimony FLF12-D, $Br_2 \rightarrow$ Dibromotriphenylantimony FKS68-E. Forms loose complex with I_2. With Ph_5Bi, yields Ph_5Sb. C-Sb bond cleaved by H_2/Raney Ni. In EtOH or C_6H_6, $SeO_2 \rightarrow Ph_3SbSe.SeO_2$. Forms $(Ph_3Sb)_3Pt$ complex
Hazard & Toxicity: Toxic

Aldrich: T8180-9
Fluka: 92940
Sigma: T3532

>>**Derivative:** Oxide

>>**Derivative:** Sulfide

>>**Derivative:** Selenide: SeO_2 complex (1:1)

Molecular Formula: $C_{18}H_{15}O_2SbSe_2$
Molecular Weight: 542.985
Accurate Mass: 543.844066
Percentage Composition: C 39.82%; H 2.78%; O 5.89%; Sb 22.42%; Se 29.08%
Physical Description: Cryst. (C_6H_6/petrol)
Melting Point: Mp 235-237°

References: