

Die Kristallstrukturen von Ph_3AsCl_2 und $\beta\text{-Ph}_3\text{AsBr}_2$

Crystal Structures of Ph_3AsCl_2 and
 $\beta\text{-Ph}_3\text{AsBr}_2$

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Arsenic, Triphenylarsenic Dichloride,
Triphenylarsenic Dibromide, Crystal Structure

Colourless single crystals of Ph_3AsCl_2 as well as of $\beta\text{-Ph}_3\text{AsBr}_2$ were obtained from acetonitrile solutions and were suitable for X-ray structure determinations.

Ph_3AsCl_2 : Space group $\text{P}2_12_12_1$, $Z = 4$, lattice dimensions at -90°C : $a = 1247.9(2)$, $b = 1267.5(1)$, $c = 1033.4(1)$ pm, $R_1 = 0.0484$.

$\beta\text{-Ph}_3\text{AsBr}_2$: Space group $\text{P}\bar{1}$, $Z = 4$, lattice dimensions at -80°C : $a = 949.1(1)$, $b = 1189.7(1)$, $c = 1693.7(2)$ pm, $\alpha = 98.32(1)^\circ$, $\beta = 103.64(1)^\circ$, $\gamma = 109.44(1)^\circ$, $R_1 = 0.0628$. The structures consist of Ph_3AsX_2 molecules ($X = \text{Cl}, \text{Br}$) with trigonal-bipyramidal coordination of the arsenic atom with the halogen atoms in the axial positions.