

Routes for Superior Synthesis of Cyclohexasilane (RFT-325)

Invention Summary

Tetradecachlorocyclohexasilane dianion ($\text{YSi}_6\text{Cl}_{14} : \text{Y} = \text{counter ion}$), is an important intermediate in the production of cyclohexasilane (Si_6H_{12} , CHS). CHS is a liquid precursor for electronics grade silicon materials and devices. CHS is also a more benign liquid phase alternative to gaseous SiH_4 and corrosive HSiCl_3 in the various procedures and technologies adopted in silicon based electronic processes. The existing method to produce $\text{YSi}_6\text{Cl}_{14}$ salt is low and yields up to 9-11%. This invention teaches a method to produce yields that are significantly improved to approximately 80-90% for the $\text{YSi}_6\text{Cl}_{14}$ salt.

Patents

US Patent No.8,975,429 "Method of Producing Cyclohexasilane Compounds"

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