

Dodecachloro-neopentasilane (DCNPS)



CAS number	50350-62-4
UN number	UN 3096
Molecular mass	565.80 g/Mol
Appearance	colorless crystals

Dodecachloro-neopentasilane, synthesis grade, 5N

Product Number	1400
Purity	99.999% (by ICP-MS)
Assay	>98% (by NMR)
Applications	chemical synthesis, silicon inks

Dodecachloro-neopentasilane, semiconductor grade, 7N

Product Number	1410
Purity	99.99999% (by ICP-MS)
Assay	>98% (by NMR)
Applications	chemical synthesis, silicon inks

Application Note

- base material for production of Si_5H_{12} and other derivatives (promising precursor materials for deposition of silicide and Si thin films with low temperature capability, i.e.: S. Weeks et al, Journal of Vacuum Science & Technology A Vacuum Surfaces and Films 34(1):01A140, January 2016)
- precursor for silicon nitride and Si (film, nanowire) deposition from sublimation sources
- precursor for solution-based growth methods for Si and silicide nanoparticles and nanowires

Further application examples from literature (Si_5H_{12})

- *Ultra-high growth rate of epitaxial silicon by chemical vapor deposition at low temperature with neopentasilane*
K. H. Chung, N. Yao, J. Benziger, J. C. Sturm, K. K. Singh, D. Carlson, S. Kuppuraio
APPL. PHYS. LETT. 92, 113506 (2008)
- *Low Temperature Colloidal Synthesis of Silicon Nanorods from Isotetrasilane, Neopentasilane, and Cyclohexasilane*
Xiaotang Lu, Kenneth J. Anderson, Philip Boudjouk, and Brian A. Korgel
Chem. Mater., 2015, 27 (17), pp 6053–6058
- *Solution-processed amorphous silicon surface passivation layers*
Mathias Mews, Christoph Mader, Stephan Traut, Tobias Sontheimer, Odo Wunnicke, Lars Korte, and Bernd Rech
Appl. Phys. Lett. 105, 122113 (2014)