



>>Entry Name: Azidotrimethylsilane, 9CI

Synonym(s): Trimethylsilyl azide

CAS Registry Number: 4648-54-8

Me₃SiN₃

Molecular Formula: C₃H₉N₃Si

Molecular Weight: 115.21

Accurate Mass: 115.056574

Percentage Composition: C 31.28%; H 7.87%; N 36.47%; Si 24.38%

Source/Synthesis: Synth. from Me₃SiCl + NaN₃ in DMF

Use/Importance: Commercially available alternative reagent to HN₃. In presence of *N*-bromosuccinimide causes azidobromination of alkenes. With acetylenes → 1,2,3-triazoles. Used in synth. of 3-subst. uracils. Cleaves epoxides → *trans*-siloxy azides; substitutes benzyl, acyl, allyl, aliphatic halides → azides; reacts with acyl halides, catalysed by KN₃, 18-crown-6 → isocyanate which reacts with HCl → amine; adds to aldehydes, ketones in presence of ZnCl₂ or SnCl₂ → *gem*-diazides and with NaN₃ or 15-crown-5 → α-siloxy azides; with Et₂AlF, cleaves 2,3-epoxyalcohols regio- and stereoselectively → *anti*-3-azido-1,2-diols; with PhI(OAc)₂, reacts with simple acyclic and cyclic alkenes → α-azido ketones

Physical Description: Liq.

Melting Point: Mp -95°

Boiling Point: Bp₇₂₀ 95°. Bp₁₇₅ 52-53°

Density: d₄²⁰ 0.87

Refractive Index: n_D²⁰ 1.4140

Hazard & Toxicity: Flammable. Toxic by inhalation, liberating hydrazoic acid which is a potent vasodilator. Explosion possible during prep.

Aldrich: 15507-1

Fluka: 92753

Sigma: T7385

References:

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