



>>Entry Name: (Diazomethyl)trimethylsilane, 9CI

Synonym(s): Trimethylsilyldiazomethane. (TMS)diazomethane

CAS Registry Number: 18107-18-1

$\text{Me}_3\text{SiCHN}_2$

Molecular Formula: $\text{C}_4\text{H}_{10}\text{N}_2\text{Si}$

Molecular Weight: 114.222

Accurate Mass: 114.061325

Percentage Composition: C 42.06%; H 8.82%; N 24.53%; Si 24.59%

Source/Synthesis: Synth. from $\text{Me}_3\text{SiCH}_2\text{Cl}$ + Mg, then diphenylphosphorazidate

Use/Importance: Commercially available safe substitute for CH_2N_2 , eg. in Arndt-Eistert homologation. Precursor for lithium trimethylsilyldiazomethane; synthon for 1,2,3-triazoles; undergoes photochemical or metal-catalysed cyclopropanation; homologates ketones in presence of $\text{BF}_3\cdot\text{Et}_2\text{O}$; undergoes 1,3-dipolar cycloaddn. to acrylonitrile $\rightarrow$ a 2-pyrazoline; source of trimethylsilyl carbene; reagent for esterification of carboxylic acids, *O*-methylation of alcohols and ring expansion of bicyclic ketones; used in stereoselective synth. of *cis*-alkenes from diazo compds.

Physical Description: Greenish-yellow liq.

Boiling Point: Bp_{775}° 96°

Refractive Index: n_D^{25} 1.4362

Aldrich: 36283-2

Fluka: 92738

Sigma: T1160

References:

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Seyferth, D. *et al.*, *J. Organomet. Chem.*, 1972, **44**, 279, (*synth, ir, pmr*)
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