



>>Entry Name: Iodotrimethylsilane, 9CI

Synonym(s): Trimethylsilyl iodide

CAS Registry Number: 16029-98-4

Me<sub>3</sub>SiI

**Molecular Formula:** C<sub>3</sub>H<sub>9</sub>ISi

**Molecular Weight:** 200.094

**Accurate Mass:** 199.951825

**Percentage Composition:** C 18.01%; H 4.53%; I 63.42%; Si 14.04%

**Source/Synthesis:** Synth. from (Me<sub>3</sub>Si)<sub>2</sub>O + I<sub>2</sub> + (Me<sub>2</sub>HSi)<sub>2</sub>O

**Use/Importance:** Commercially available. Isomerises  $\alpha,\beta$ -difluoro- and  $\alpha,\beta$ -unsatd. ketones; efficiently deoxygenates arene endoxides; reduces sulfonyl halides  $\rightarrow$  disulfides and sulfoxides  $\rightarrow$  vinyl sulfides; reagent for reductive deoxygenation of alcohols  $\rightarrow$  alkyl iodides with inversion of stereochem.; catalyst for acetal formn. with alkoxysilanes; catalyses *syn*-selective aldol-type condensations of silyl enol ethers with acetals; with primary, secondary nitroalkanes  $\rightarrow$  oximes, with tertiary nitroalkanes  $\rightarrow$  tertiary iodides; catalyst for allylation of acetals by allyl silanes with allylic transposition; cleaves cyclopropyl ketones  $\rightarrow$   $\gamma$ -iodoketones; cleaves cyclobutanones to  $\beta$ -iodoketones in presence of ZnI<sub>2</sub>; converts dimethyl and diethyl ketals to ketones; effects ester hydrol. with some selectivity for benzyl and *tert*-butyl esters; cleaves dialkyl ethers to alkyltrimethylsilyl ethers which may then be hydrolysed to alcohols; cleaves *N*-benzyloxy and *N-tert*-butoxycarbonyl protected peptide derivs.; undergoes selective *O*-demethylation of *O*-methylaryl ethers; with (Me<sub>3</sub>Si)<sub>2</sub>NH, converts ketones, aldehydes  $\rightarrow$  silyl enol ethers; converts alkyl esters  $\rightarrow$  trimethylsilyl esters catalysed by I<sub>2</sub>; reduces  $\alpha$ -ketols  $\rightarrow$  ketones; reacts with enones  $\rightarrow$   $\beta$ -iodoketones after aq. work-up; reduces azides to amines

**Physical Description:** Liq.

**Boiling Point:** Bp 106°

**Density:** d<sub>4</sub><sup>20</sup> 1.41. d<sub>4</sub><sup>25</sup> 1.467

**Aldrich:** 19552-9

**Fluka:** 58118

**Sigma:** T8389

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