

## Efficient synthesis of valuable monosilanes from Direct Process Residue

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The well-established Müller–Rochow-Direct Process for the production of chloromethylsilanes produces a disilane residue (DPR) consisting of compounds  $\text{Me}_n\text{Si}_2\text{Cl}_{6-n}$  ( $n=1-6$ ) in thousands of tons annually. Technologically, much effort is made to retransfer the DPR into monosilanes suitable for reintroduction into the siloxane production chain; especially hydrogen-substituted bifunctional chlorosilanes are a synthetic target to increase the economic value of the overall process. Thus, disilane disproportionation reactions are performed with catalytic amounts of Lewis-bases such as phosphines<sup>[1]</sup>, amines<sup>[2]</sup>, phosphonium and/or ammonium halides<sup>[3]</sup> or mixtures thereof<sup>[4]</sup> to yield monosilanes besides oligosilanes formed by *in situ* silylene insertion into Si-Cl bonds of disilanes<sup>[5]</sup>.

Herein, we report on disilane cleavage reactions using different types of “catalysts” such as phosphonium chlorides, 2-methylimidazole or inorganic metal salts for the synthesis of most valuable chlorohydridomethylsilanes. Our approach represents an efficient route to convert the DPR into bifunctional monosilanes.

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