

## Tool Box for Specialty Chemical Manufacturers

# Methyl Hydrogen Siloxanes

	Molecular Weight	% SiH	Viscosity, cSt
Methyl Hydrogen Terminal Siloxanes – M <sup>H</sup> D <sub>x</sub> M <sup>H</sup>			
Dow Corning® 1-8114 Fluid	562	0.30	5
Dow Corning® 2-5057 Polymer	1,266	0.16	11
Methyl Hydrogen Siloxanes – M D <sup>H</sup> <sub>x</sub> M			
Dow Corning® 5-0210 Polymer	642	1.25	6
Dow Corning® 1107 Fluid, 20 cSt		1.55	20
Dow Corning® 1107 Fluid, 30 cSt	4,062	1.60	30
Methyl Hydrogen, Dimethyl Copolymers – M D <sub>x</sub> D <sup>H</sup> <sub>y</sub> M			
Dow Corning® 6-3570 Polymer	747	0.78	5
Dow Corning® 1-3502 Polymer	1,028	0.36	7.2
Sy-Off® 7678 Crosslinker	3,701	1.05	29
Dow Corning® F1-3546 Polymer	8,754	0.11	135

- Possible applications include precursors to polyorganosiloxanes, cross-linking agents and chain extenders.
- Both silicone hydride homopolymers and dimethyl-copolymers are used to prepare polyorganosiloxanes; short chain SiH-terminated fluids find applications as chain extenders and in ABA co-polymer manufacture.
- Hydrosilylation, the addition of a silicone hydride moiety across an unsaturated linkage, catalyzed by transition metal
  complexes of Rhodium or Platinum, is commonly applied to the preparation of organofunctional siloxanes. Condensation
  cure chemistry is also widely used for preparation of crosslinked polymer matrices.
- Further derivatization of polyorganosiloxanes by organic chemistry is possible, mainly restricted by the need to avoid strong acids or bases that will cleave the SiOSi backbone.

### **Example:**

#### For further information, reference:

Fluorinated substituents – Hopken, J., Moller, M., and Boileau, S., Polym. Prepr. (Am. Chem. Soc. Div. Polym. Chem.), 31, 324 (1990).

Hydrophilic substituents – Fish, D., Wu, E., Khan, I. M., and Smid, J., Polym. Prepr. (Am. Chem. Soc. Div. Polym. Chem.), 30, 187 (1989).

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