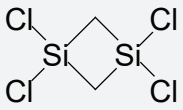
PSM polysilylenemethylene

PARAMETER	UNIT	VALUE	REFERENCES
GENERAL			
Common name	-	polysilylenemethylene	
Acronym	-	PSM	
HISTORY			
Person to discover	-	Sommer L H; Mitch, F A; Goldberg, G M; Goodwin, J T	Interrante, L V; Liu, Q; Rushkin, I; Shen, Q, J. Organomettalic Chem., 521, 1-10, 1996.
Date	-	1949	
Details	-	Sommer *et al.* first reported; Goodwin patented	
SYNTHESIS			
Monomer(s) structure	-		
Monomer(s) CAS number(s)	-	2146-97-6	
Monomer(s) molecular weight(s)	dalton, g/mol, amu	226.04	
Number average molecular weight, M_n	dalton, g/mol, amu	24,000	
Mass average molecular weight, M_w	dalton, g/mol, amu	11,000-460,000	
Polydispersity, M_w/M_n	-	2.8	
STRUCTURE			
Crystallinity	%	70	
Cell type (lattice)	-	monoclinic	Shen, Q; Interrante, L V, Macromolecules 29, 5788, 1996.
Cell dimensions	nm	a:b:c=0.57:0.875:0.325	Shen, Q; Interrante, L V, Macromolecules 29, 5788, 1996.
Unit cell angles	degree	γ=97.5	Shen, Q; Interrante, L V, Macromolecules 29, 5788, 1996.
PHYSICAL PROPERTIES			
Glass transition temperature	°C	-135 to -140	
PROCESSING			
Additives used in final products	-	Fillers: nanoparticles of Au, Pd, Cu, Ag	
Applications	-	optical material, semiconductor	
ANALYSIS			
NMR (chemical shifts)	ppm	Si NMR: *trans* – 14.4, *cis* – 14.7; H NMR – methylene carbon – 124.8	Kienard, M; Wiegand, C; Apple, T; Interrante, L V, J. Organometallic Chem., 686, 272-80, 2003.