

catalyst systems should generate metal carbenes having bulky phenyl group(s) but were also inhomogeneous. Further studies on the characteristics of the present catalyst systems are under way.

Table 2 Polymerization of norbornene by $M(\text{CO})_6\text{-RCl}_n\text{-}h\nu^a$

M	RCl _n	Conversion (%)	Polymer ^b		
			Yield (%)	$M_n/10^3$ ^c	M_w/M_n ^c
W	PhCCl ₃	47	47	180	2.06
W	Ph ₂ CCl ₂	7	7	130	2.71
Mo	PhCCl ₃	80	66	170	2.35
Mo	Ph ₂ CCl ₂	61	39	400	1.83

^a Catalyst preparation: $M(\text{CO})_6\text{-RCl}_n$ solution UV-irradiated at 30 °C for 1 h. Polymerization: in toluene, 30 °C, 24 h (dark); $[M]_0 = 0.50 \text{ mol dm}^{-3}$, $[M(\text{CO})_6] = 10 \text{ mmol dm}^{-3}$, $[\text{PhCCl}_3] = 100 \text{ mmol dm}^{-3}$, $[\text{Ph}_2\text{CCl}_2] = 20 \text{ mmol dm}^{-3}$. ^b Methanol-insoluble product. ^c By GPC (polystyrene gel columns; eluent CHCl_3 ; RI detector; polystyrene calibration).

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