

Stress relaxation of UHMWPE gels

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reptation 30
(G(t))
entanglement molecular weight(M_e) (MWD)

가 MWD

UHMWPE $G(t)$ M_e
85.3 wt.%($\phi_p=0.147$) 가 UHMWPE 88.9 wt.%($\phi_p=0.111$)
($\phi_p=0.111$) MWD M_e 가 가

Double reptation(DR) ($=2.0$)
0.147 ϕ_p 1.0 ; ($2M_e$) (가
(W_L) 0 .) 0.001 W_L 0.10
(0.02 ϕ_p 0.111) $G(t)$ DR ($=2.0$) 가

23 DR . DR ($=2.0$ for
0.147 ϕ_p 1.0 and $=2.3$ for 0.02 ϕ_p 0.111) monomeric friction factor(f_{eff}) free
volume . $\phi_p=0.033, 0.02$ (W_L 0.037, 0.1)

self-consistent(SC) DR ($=2.0$ or $=2.3$) .