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(54) Title: LONG-CHAIN BRANCHED ETHYLENE-BASED POLYMERS

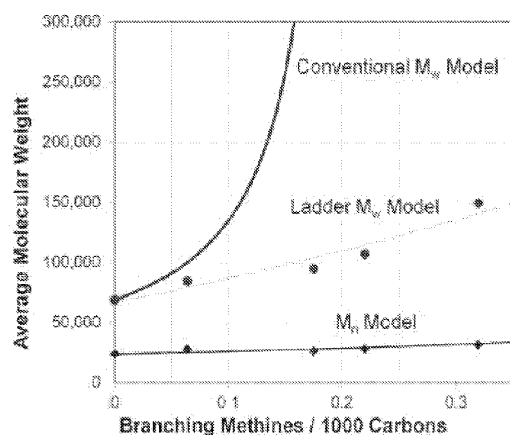


FIG. 1

(57) Abstract: The ethylene-based polymers include a low molecular weight polymer fraction and a high molecular weight polymer fraction, which are divided by $S_{\max}$ on a molecular weight distribution (MWD) curve determined via absolute gel permeation chromatography. The low molecular weight polymer fraction and the high molecular weight polymer fraction include a Ladder character, L , defined for a given absolute molecular weight (MW) as the fit of the log of the intrinsic viscosity $[\eta]$ versus the log of the absolute MW (M) curve using the expression, $\log[\eta] = \log(\beta) + \alpha \log(M) - L \cdot \alpha \log(2)$ according to a Mark-Houwink-Sakurada curve, in which $\log(\beta)$ is the intercept and α is the slope. The low molecular weight polymer fraction has an MW below $S_{\max}$ and all values of L between -0.35 to 0.35; and the high molecular weight polymer fraction has an MW above $S_{\max}$ and a maximum value of L between 0.8 and 1.5.

[Continued on next page]

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