

$$1/5$$

$$\% \text{ Crystallinity} = ((H_f)/(292 \text{ J/g})) \times 100$$

Equation 1

Fig. 1

$$g_i' = (IV_{\text{Sample},i} / IV_{\text{linear reference},j})$$

Equation 2

Fig. 2

$$\left[\frac{IV_{\text{Sample},i}}{IV_{\text{linear_reference},j}} \right]_{M_{i=j}}^{1.33} = \left[\left(1 + \frac{B_{n,i}}{7} \right)^{1/2} + \frac{4}{9} \frac{B_{n,i}}{\pi} \right]^{-1/2}$$

Equation 3

Fig. 3

$$LCBf = \frac{\sum_{M=3500}^i \left(\frac{B_{n,i}}{M_i / 14000} c_i \right)}{\sum c_i}$$

Equation 4

Fig. 4

2/5

$$M_{PE} = \left(\frac{K_{PS}}{K_{PE}} \right)^{\frac{1}{\alpha_{PE}+1}} \cdot M_{PS}^{\frac{\alpha_{PS}+1}{\alpha_{PE}+1}}$$

Equation 5

Fig. 5

$$[\eta]_{PE} = K_{PS} \cdot M_{PS}^{\alpha+1} / M_{PE}$$

Equation 6

Fig. 6

$$M_w = \sum_i w_i M_i = \sum_i \left(\frac{C_i}{\sum_i C_i} \right) M_i = \frac{\sum_i C_i M_i}{\sum_i C_i} = \frac{\sum_i LS_i}{\sum_i C_i} = \frac{LS \text{ Area}}{Conc. \text{ Area}}$$

Equation 7

Fig. 7

$$IV = [\eta] = \sum_i w_i IV_i = \sum_i \left(\frac{C_i}{\sum_i C_i} \right) IV_i = \frac{\sum_i C_i IV_i}{\sum_i C_i} = \frac{\sum_i DP_i}{\sum_i C_i} = \frac{DP \text{ Area}}{Conc. \text{ Area}}$$

Equation 8

Fig. 8

3/5

$$Mw_{CC} = \sum_i \left(\frac{C_i}{\sum_i C_i} \right) M_i = \sum_i w_i M_i$$

Equation 9

Fig. 9

$$[\eta]_{CC} = \sum_i \left(\frac{C_i}{\sum_i C_i} \right) IV_i = \sum_i w_i IV_i$$

Equation 10

Fig. 10

$$gpcBR = \left[\left(\frac{[\eta]_{CC}}{[\eta]} \right) \cdot \left(\frac{M_w}{M_{w,CC}} \right)^{\alpha_{PE}} - 1 \right]$$

Equation 11

Fig. 11

$$\text{Resolution} = \frac{\text{Peak temperature of NIST 1475a} - \text{Peak Temperature of Hexacontane}}{\text{Half - height Width of NIST 1475a} + \text{Half - height Width of Hexacontane}}$$

Equation 12

Fig. 12

4/5

$$CDC = \frac{\text{Comonomer Distrubution Index}}{\text{Comonomer Distribution Shape Factor}} = \frac{\text{Comonomer Distribution Index}}{\text{Half Width/Stdev}} * 100$$

Equation 13

Fig. 13

$$\int_{35}^{119.0} w_T(T) dT = 1$$

Equation 14

Fig. 14

$$\int_{35}^{T_{median}} w_T(T) dT = 0.5$$

Equation 15

Fig. 15

$$\ln(1 - \text{comonomercontent}) = -\frac{207.26}{273.12 + T} + 0.5533$$

$$R^2 = 0.997$$

Equation 16

Fig. 16

5/5

$$Stdev = \sqrt{\sum_{35.0}^{119.0} (T - T_p)^2 * w_T(T)}$$

Equation 17

Fig. 17

$$ZSVR = \frac{\eta_{0B}}{\eta_{0L}}$$

Equation 18

Fig. 18

$$\eta_{0L} = 2.29 \times 10^{-15} M_{w-gpc}^{3.65}$$

Equation 19

Fig. 19

$$M_{polyethylene} = A(M_{polystyrene})^B$$

Equation 20

Fig. 20