

CLAIMS

1. A polyethylene composition comprising:
 - a first polyethylene fraction area defined by an area in the elution profile via improved comonomer composition distribution (iCCD) analysis method in a temperature range of 70°C to 97°C;
 - a first peak in the temperature range of 70°C to 97°C in the elution profile;
 - a second polyethylene fraction area defined by an area in the elution profile in a temperature range of 97°C to 110°C; and
 - a second peak in the temperature range of 97°C to 110°C in the elution profile; and
 - wherein the polyethylene composition has a density of 0.935 g/cm³ to 0.955 g/cm³, a melt index (I₂) of 1.0 g/10 minutes to 10.0 g/10 minutes, and wherein a ratio of the first polyethylene fraction area to the second polyethylene fraction area is less than 2.0.
2. The polyethylene composition of claim 1, wherein the polyethylene composition has a molecular weight distribution, expressed as the ratio of the weight average molecular weight to number average molecular weight ($Mw_{(GPC)}/Mn_{(GPC)}$) in the range of from 2.0 to 4.5.
3. The polyethylene composition of any preceding claim, wherein the second polyethylene fraction area may comprise from 30% to 80% of the total area of the elution profile
4. The polyethylene composition of any preceding claim, wherein the polyethylene composition has a CDBI50 of less than or equal to 50%.
5. The polyethylene composition of any preceding claim, wherein the polyethylene composition has an overall molecular weight determined by iCCD ($Mw_{(iCCD)}$), the first polyethylene fraction has a first fraction molecular weight determined by iCCD ($Mw_{(iCCD, 70^{\circ}C-97^{\circ}C)}$), and a ratio of the overall molecular weight ($Mw_{(iCCD)}$) to the first fraction molecular

weight ($Mw_{(iCCD, 70^{\circ}C-97^{\circ}C)}$) is less than 0.9.

6. The polyethylene composition of any preceding claim, wherein the polyethylene composition has a zero shear viscosity ratio of less than 2.0.

7. The polyethylene composition of any preceding claim, wherein the polyethylene composition has an ESCR F50 (10%, A) of greater than 300 hours when measured according to D1693.

8. A polyethylene composition comprising:

a first polyethylene fraction in a temperature range of $70^{\circ}C$ to $97^{\circ}C$ in an elution profile via improved comonomer composition distribution (iCCD) analysis method, the first polyethylene fraction comprising a first peak, and wherein the first polyethylene fraction has a first fraction molecular weight determined by iCCD ($Mw_{(iCCD, 70^{\circ}C-97^{\circ}C)}$); and

a second polyethylene fraction in a temperature range of $97^{\circ}C$ to $110^{\circ}C$ in the elution profile, the second polyethylene fraction comprising a second peak;

wherein the polyethylene composition has an overall molecular weight determined by iCCD ($Mw_{(iCCD)}$), a density of 0.935 g/cm^3 to 0.955 g/cm^3 , a melt index (I_2) of 1.0 g/10 minutes to 10.0 g/10 minutes; and

wherein and a ratio of the overall molecular weight ($Mw_{(iCCD)}$) to the first fraction molecular weight ($Mw_{(iCCD, 70^{\circ}C-97^{\circ}C)}$) is less than 0.9.

9. The polyethylene composition of claim 8, wherein the polyethylene composition has a molecular weight distribution, expressed as the ratio of the weight average molecular weight to number average molecular weight ($Mw_{(GPC)}/Mn_{(GPC)}$) in the range of from 2.0 to 4.5.

10. The polyethylene composition of any of claims 8–9, wherein the second polyethylene fraction area may comprise from 30% to 80% of the total area of the elution profile.

11. The polyethylene composition of any of claims 8–10, wherein the polyethylene

composition has a CDBI50 of less than or equal to 50%.

12. The polyethylene composition of any of claims 8–11, wherein a ratio of the first mass fraction to the second mass fraction is less than 2.0.

13. The polyethylene composition of any of claims 8–12, wherein the polyethylene composition has a zero shear viscosity ratio of less than 2.0.

14. The polyethylene composition of any of claims 8–13, wherein the polyethylene composition has an ESCR F50 (10%, A) of greater than 300 hours when measured according to D1693.

15. A method of producing a rotomolded article comprising the polyethylene composition of any preceding claim.