CLAIMS:

1. A method for manufacturing a polymer article comprising injecting a molten polyester based polymer for converting it into a semi-final or final shape, wherein the polyester based polymer melt is converted at a given local pressure and a given processing temperature, wherein said processing temperature is higher than the crystallization temperature of the polymer resin at ambient pressure as determined from the corresponding PVT graph of the resin, and wherein said local pressure applied on the polyester based polymer melt is selected to increase the crystallization temperature to at least the given melt processing temperature.

2. A method according to claim 1, wherein said given processing temperature Is within a range of 5 to 40°C higher than the crystallization temperature of the polymer resin at ambient pressure as determined from the corresponding PVT graph of the resin.

3. A method according to claim 1 or claim 2, wherein the applied local pressure is selected within a range of 0 to 500 MPa to increase the crystallization temperature of the polyester based polymer melt to at least the given melt processing temperature.

4. A method for manufacturing a polymer article according to any one of claims 1 to 3, further comprising biaxially stretching the preform by blowing thereby forming a container.

5. A method according to claim 1 comprising injecting a molten polyester based polymer for converting it into a semi-final or final shape, said polymer having an applied Weissenberg number at least 0.375 for injecting and a Deborah number of at least 0.75 for injecting, wherein the polyester based polymer has a MW between 35000 and 143000 g/mol.

6. A method according to claim 1 comprising selectively modifying the flow path of the molten semi-crystallizable polymer within the hot runner system.

7. A method according to claim 6, wherein the flow path of the polyester based polymer melt is modified as a function of local pressure profile over at least part of the flow path, said local pressure profile being determined as a function of optimized response of the polyester based polymer melt to the applied local shear and/or extensional deformation over at least said part of the flow path.

8. A method according to claim 6 or claim 7, wherein the flow path of the polyester based polymer melt is modified as a function of local pressure profile over at least part of the flow

path, said local pressure profile being determined as a function of required critical shear over at least said part of the flow path.

9. A method according to any one of claims 6, 7 or 8 wherein the polymer material results from blending or compounding a plurality of polymer materials with different MW in order to obtain a lower w1 being the cross-over point between storage modulus G'(w) and loss modulus G" (w) without substantially increasing the Mw of the obtained blend or compound.

10. A method for according to claim 1 comprising injecting polyester based polymer in a preform mold for converting it in a preform while applying a shear and/or extensional deformation on the polyester based polymer melt, wherein applying shear and/or extension deformation on the polyester based polymer melt comprises selectively modifying the flow path of the molten semi-crystallizable polymer as a function of local pressure profile over at least part of the flow path, said local pressure profile being determined as a function of optimized response of the polyester based polymer melt to the applied local shear and/or extensional deformation over at least said part of the flow path.

11. A method according to claim 10, wherein the flow path of the polyester based polymer melt is modified as a function of local pressure profile over at least part of the flow path, said local pressure profile being determined as a function of required critical shear over at least said part of the flow path.

12. A method according to claim 11, wherein the flow path of the polyester based polymer melt is modified as a function of local pressure profile over at least part of the flow path, and wherein the polyester based polymer melt is converted at a given processing temperature, wherein said processing temperature is higher than the crystallization temperature of the polymer resin at ambient pressure as determined from the corresponding PVT graph of the resin, and wherein said local pressure profile applied on the polyester based polymer melt is selected to increase the crystallization temperature to at least the given melt processing temperature.

13. Use of a method according to any one of the above mentioned claims in manufacturing of:

- Containers for divers food and non-food applications
- any forms of injected polymer articles for use in packaging, building & construction, automotive, electric & electronic applications.