

**TOTAL**Refining & Chemicals  
Polymers**+135-3858-6433 (GuangDong)**  
**+188-1699-6168 (ShangHai)**  
**+852-6957-5415 (HongKong)****Lumicene® Supertough 22ST05**Technical data sheet  
**Polyethylene BLOWN FILM**  
Produced in Europe**Description**

Lumicene® Supertough 22ST05 is a polyethylene blown film grade that is especially designed to have an excellent processability on extrusion and conversion lines and to give a very high toughness – stability balance allowing new innovative multilayer film concepts. Thanks to this innovative design, Lumicene® Supertough 22ST05 brings a huge down-gauging potential in the film market.

**Characteristics**

Property	Method	Unit	Typical value
Density	ISO 1183	g/cm <sup>3</sup>	0.921
Melt Flow Rate (190°C/2.16 kg)	ISO 1133	g/10 min	0.5
Melting temperature	ISO 11357	°C	113
Vicat temperature	ISO 306	°C	106

*Values indicated are typical for this product. Density and MFR are properties routinely measured during "the standard quality control procedure". The other figures are generated by tests not included in the "standard quality control procedure", and are given for information only. Data are not intended for specification purposes.*

**Processing**

Lumicene® Supertough 22ST05 is typically extruded at a melt temperature around 190°C and can be blown easily at any of the following conditions:

- Possibility to blend Supertough with a wide variety of products
- Optimal result in pure or in blend with low amount of another product in the same layer
- Wide range of thicknesses achievable
- Versatile product for different extrusion technologies : Low & High neck configuration, cast & MDO
- Temperature: 180 to 230°C
- BUR: 1.5:1 to 5.0:1
- Die gap: 1.2 to 2.8 mm

**Additives**

Antioxidant: yes  
PPA: yes

Polyethylene

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Polyethylene BLOWN FILM  
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These values have been measured on a 40 µm blown film in low neck configuration.

Property	Method	Unit	Typical value (*)
Tensile Strength at Yield MD/TD (**)	ISO 527-3	MPa	9.8/10.1
Tensile Strength at Break MD/TD (**)	ISO 527-3	MPa	65/60
Elongation at Break MD/TD (**)	ISO 527-3	%	629/686
Elmendorf MD/TD (**)	ISO 6383-2	N/mm	75/150
Dart test	ISO 7765-1	g	>1000
Haze	ISO 14782	%	7
Gloss 45°	ASTM D2457		60

(\*) Figures stated hereabove are obtained using laboratory test specimens produced with the following extrusion conditions: 45 mm screw diameter, L/D = 30, die diameter = 120 mm, die gap = 1.4 mm, BUR = 2.5:1, temperature = 195°C.

These values have been measured on a 40 µm blown film in high neck configuration.

Property	Method	Unit	Typical value (***)
Tensile Strength at Yield MD/TD (**)	ISO 527-3	MPa	10.5/10.0
Tensile Strength at Break MD/TD (**)	ISO 527-3	MPa	66/65
Elongation at Break MD/TD (**)	ISO 527-3	%	580/620
Elmendorf MD/TD (**)	ISO 6383-2	N/mm	75/125
Dart test	ISO 7765-1	g	>1500
Haze	ISO 14782	%	11
Gloss 45°	ASTM D2457		47

(\*\*) MD : Machine Direction, TD : Transverse Direction

(\*\*\*) Figures stated hereabove are obtained using laboratory test specimens produced with the following extrusion conditions: 70 mm screw diameter, L/D = 25, die diameter = 120 mm, die gap = 1.2 mm, BUR = 4.0:1, temperature = 200°C