Technical Data Sheet

CLEARFLEX®
CL 106 BA

LLDPE
Linear low-density polyethylene bio-attributed

SUSTAINABILITY

The "bio attributed" product Clearflex CL 106 BA is a highly sustainable LLDPE produced using bionafta from renewable raw materials together with traditional raw materials. In order to attribute the sustainable feedstock component to the final product, Versalis applies the Mass Balance approach, a recognized methodology that allows to trace the flow of materials along the value chain and to assign the sustainability characteristic of the raw material to the final product on a documentary basis. Clearflex CL 106 BA provides the same chemical composition and physical-mechanical performance of the traditional grade, in addition is accompanied by a sustainability declaration that certifies the share of bio attributed product. It is a linear low-density polyethylene, hexene comonomer (C6-LLDPE), added with antioxidants and suitable for cast film technology. The production of Clearflex CL 106 BA allows to contribute to the circular economy, since the bionafta used derives from renewable sources (e.g. vegetable oils). Clearflex CL 106 BA will be bio attributed for 85%. The exact amount of "bio attributed" product will be reported in the sustainability certificate issued upon the delivery of the product.

MAIN PROPERTIES

Resin Properties	Value	Unit	Test method
Melt Flow Rate (190 °C/2.16 kg)	3.2	g/10min	ISO 1133
Melt Flow Rate (190 °C/5 kg)	-	g/10min	ISO 1133
Melt Flow Rate (190 °C/21.6 kg)	-	g/10min	ISO 1133
Density	0.920	g/cm^3	ISO 1183
Melting Point	125	°C	Internal Method
Brittleness temperature	<-70	°C	ASTM D 746
Vicat softening point (1 kg)	97	°C	ISO 306/A

Film Properties *	Value	Unit	Test method
Tensile stress at yield MD	10	MPa	ISO 527-3
Tensile stress at yield TD	10	MPa	ISO 527-3
Tensile stress at break MD	38	MPa	ISO 527-3
Tensile stress at break TD	29	MPa	ISO 527-3
Elongation at break MD	500	%	ISO 527-3
Elongation at break TD	800	%	ISO 527-3
1% Secant modulus MD	180	MPa	ISO 527-3
1% Secant modulus TD	190	MPa	ISO 527-3
Elmendorf tear resistance MD	120	N/mm	ISO 6383-2
Elmendorf tear resistance TD	230	N/mm	ISO 6383-2
Impact resistance F50 (Dart Drop Test)	120	g	ISO 7765-1/A
Dynamic coefficient of friction (COF)	>0.5	-	ISO 8295
Haze	2.5	%	ISO 14782
Gloss, 45°	90	%	ASTM D 2457
Recommended film thickness	8 ÷ 50	micron	-

(*) Typical value for a cast film extruded between 220°-270°C, line speed between 150-300 m/min and thickness 23 µm. Actual properties are typical and may vary depending upon operating conditions and additive package.

Manufacturer website: https://www.versalis.eni.com/

Manufacturer website: https://www.versalis.eni.com/

CLEARFLEX ® LLDPE / Linear low-density polyethylene bio-attributed **CL 106 BA**

MAIN APPLICATIONS

Clearflex CL 106 BA is recommended for the production of low cling cast film with high optical properties and goodmechanical resistance. It is ideal for the production of power stretch film characterized by a medium prestretch. Films manufactured with Clearflex CL 106 BA are characterised by high clarity, optimum elongation at break,optimum impact and tear resistance.

PROCESSING NOTES

Clearflex CL 106 BA is easily processable using cast film technology. Melt temperature should be between 220°C and 270°C.Clearflex CL 106 BA can be extruded at thickness below 15 µm.

STORAGE AND HANDLING

Clearflex CL 106 BA is supplied in pellet form. This material may readily be conveyed and bulk fed through equipment designed for conventional pelletized polyethylene resin, provided the equipment is designed to prevent accumulation of the fines and dust particles that are contained in all polyethylene resins. These fines and dust particles can, under certain conditions, pose an explosion hazard. We recommend that the conveying system used be equipped with filters of adequate size, operated and maintained in such a manner to ensure that no leaks develop and earthed adequately. We further recommend that good housekeeping should be practiced throughout your facility. The product should be stored in dry conditions at temperatures below 50°C and protected from sunlight. Improper storage can initiate degradation which results in odor generation, color changes and can have negative effects on the physical properties of the product. Before using this product, it is recommended to read and understand the relevant Safety Data Sheet.

AVAILABILITY

Contact the Versalis sales office nearest to you regarding availability and your specific application requirements.

FOOD CONTACT STATUS

Clearflex CL 106 BA complies with the rules and regulations of the European Union, as well as other countries, regarding the use of plastic materials in food contact applications. Certificates of compliance are available upon request.

TECHNICAL MANAGEMENT POLYETHYLENE

Center and South Europe and Americas

Versalis S.p.A.

Head Office
Piazza Boldrini, 1
20097 San Donato Milanese (MI) - Italy
tel. +39 0252032998 + 39 0252042262
tel. +39 0252042005 + 39 0252032072
+39 0252042984

Mantova
Via Taliercio 14 - 46100 Mantova (MN) - Italy
tel. +39 0376305520 / +39 0376305620

North Europe and ROW

Versalis S.p.A.

4531 Route des Dunes - CS 20060 Mardyck 59279
Dunkerque - France
tel. +33 328235516 / +33 328235512

Duesseldorfer Str. 13
65760 Eschborn - Deutschland
tel +49 15140260561

IMPORTANT: please consult the relevant safety data sheet for more detailed information. The information and data presented herein are to the best of our knowledge true and accurate but no warranty or guarantee, expressed or implied, is made nor is any liability accepted with respect to the use of such information and data. Versalis is available to provide the guaranteed values for each product on demand

DISCLAIMER: it is the sole responsibility of the end-user to determine the safety, the regulatory compliance as well as the technical suitability of the product for the intended application. The product is not intended for use in medical devices and pharmaceutical applications; Versalis declines all responsibility and cannot be held liable in case of use in the above-mentioned applications.

January 2023

Manufacturer website: https://www.versalis.eni.com/