

**ISSUE: 18/01/2018**

**ISO 9001 CERTIFIED**

**Promyde® BF933 L** is a high viscosity polyamide lubricated specially formulated for the production of films with a high transparency and improved elongation, tear and puncture resistance. Promyde® BF933 L can be processed in cast and blown film extruders.

Promyde® BF933 L is specially recommended in asymmetric structures to minimize curling, specific recommendations are available on request.

Product Specifications	Values	Standard method
Melt Flow Rate (275°C/5Kg)	30-40	ISO1133
Extractable % max.	≤ 1	ISO 6427
Viscosity number	193-211	ISO 307
Moisture content % max.	≤ 0,1	NAPPA-032

General Properties	Unit	Value	Testing method
Melting point	°C	200	ISO 3146
Crystallization Temperature	°C	145	ISO 3146
Density	g/cm <sup>3</sup>	1,11	ISO 1148
Apparent density	g/cm <sup>3</sup>	0,67	NAPPA-059
Chip size (length-diameter)	mm	1,5 2,5	NAPPA-045

Film Properties <sup>1</sup>	Conditions	Unit	Value	Method
Stress at break	MD	MPa	65	ISO 527-3
Elongation at break	MD	%	400	ISO 527-3
Trouser tear force	MD	N	2.5	ISO 6383-1
Trouser tear resistance	MD	N/mm	45	ISO 6383-1
Puncture force	MD	N	5.5	ISO 14477
Puncture elongation	MD	%	4	ISO 14477
Puncture energy	MD	mJ	12	ISO 14477
Haze		%	<0.5	ASTM D1003
Dynamic coefficient of friction (Film/Steel)		-	<0.25	ISO 8295
O <sub>2</sub> transmission rate, 23°C	0% RH		25	ASTM D3985
	50% RH	cc/m <sup>2</sup> .d	15	
	85% RH		25	
Moisture vapor transmission rate, 23°C	85% RH	g/m <sup>2</sup> .d	20	ISO 15106-1
Moisture vapor transmission rate, 38°C	85% RH	g/m <sup>2</sup> .d	65	ISO 15106-1

(1) Values were measured on 50µm blown film (BUR: 2.2): the properties like those of all PA films are greatly dependent on manufacturing conditions.

Packaging

Big bag / Octabin / Silo truck

### CHARACTERISTICS

Promyde<sup>®</sup> BF933 L is a high viscosity polyamide lubricated specially formulated for the production of films with a high transparency and improved elongation, tear and puncture resistance.

Promyde<sup>®</sup> BF933 L can be processed in cast and blown film extruders.

### APPLICATIONS

Promyde<sup>®</sup> BF933 L is used for the production of mono and coextruded cast and blown films that are suitable for thermoforming. In a multilayer film Promyde<sup>®</sup> BF933 L assumes the function of a gas and aroma barrier, giving to the film outstanding mechanical properties and thermoformability. The main applications are casings, vacuum packs and thermoformed packs for food such as meat, fish and cheese

### FORMAT AND STORAGE

Promyde<sup>®</sup> BF933 L is supplied in moisture-proof packaging. Typical formats are Big Bags, Octabins, 25kg bags, and bulk silo trucks. All containers are perfectly sealed. The product should be stored in a dry place and opened just before processing.

### PROCESSING GUIDELINES

#### Drying

Material is supplied pre dried and ready to process. Bags and containers should be stored in a dry place at room temperature. Storage time should not exceed twelve months. Material from open or damaged containers should be dried in a dry-air dryer at 75 to 80°C, the drying time required will depend on the moisture content. Drying temperatures of above 80°C should be avoided because of possible oxidation.

#### Extrusion Processing

Promyde<sup>®</sup> BF933L may be processed on standard single-flighted, three-section screws. Better results can be obtained by using high-performance screws equipped with shearing and mixing sections. The screw length should be at least 24D, and preferably 28-33D to guarantee optimum plasticizing and conveying with the high through-put rates of film extrusion (D: screw diameter). A three-section screw should have a compression ratio (ratio of flight depth in the feed section to flight depth in the metering section) of 3:1 to 4:1.

It is recommended the length of screw sections as follows (L: overall length of screw):

Feed section: 0.25 to 0.30 x L

Compression section: 0.15 to 0.25 x L

Metering section: 0.4 to 0.55 x L

Excellent processing and film properties can be obtained by using following temperatures at the extruder:

Hopper: 40-50°C

Extruder: 210-250°C

Adapter&Die: 240-250°C

#### Conditioning

Films made of Promyde<sup>®</sup> BF933L will achieve their final dimensions and properties after equilibrium moisture absorption.

Note: All recommendations are based on knowledge and experience. The values have been established on standard tests. The figures should be regarded as guide values and not as binding minimum values. As many factors may affect processing or applications, we recommend that you make tests to determine the suitability of a product for your particular use.