

ISSUED DATE: 07/02/2017

ISO 9001 CERTIFIED

**CHARACTERISTICS**

**INZEA F13** is a thermoplastic material registered by Vinçotte as compostable, within a maximum thickness according to EN 13432. The renewable content is 45% and the biobased content is 38%. **INZEA F13** is registered by Vinçotte as home compostable.

**INZEA F13** is suitable for blown and cast film extrusion. It can be processed in conventional equipment for PE. Corona treatment is not required.

**APPLICATIONS**

**INZEA F13** can replace PE in several applications as: carrier and refuse bags, shopping bags, organic waste bags, fast food packaging, diaper and hygienic article packaging.

**FOOD PACKAGING**

**INZEA F13** can be used for contact with food depending on type of food, duration and conditions according to European directive N°10/2011. For further information please contact NUREL.

**PROPERTIES**

GENERAL PROPERTIES	Method	Units	Values
Renewable content		%	45
Biobased content	ASTM-D6866-12	%	38
Compostability	EN13432		YES
Solid density	ISO 1183-1	g/cc	1,31-1,34
MVR (190°C/2,16Kg)	ISO1133	cc/10min	<3
Moisture content	NAPPA-032	%	<1
Melting temperature	ISO11357-1/3	°C	120/155

Blown film properties (blow up ratio: 2,1)				
	Method	Units	Values	
<b>Thickness</b>	Internal Method	microns	20	15
<b>Modulus</b>	ISO527-3	MPa	300-400	300-400
<b>Stress at yield MD</b>	ISO527-3	MPa	7-10	7-10
<b>Strain at yield MD</b>	ISO527-3	%	5	5
<b>Stress at Break MD</b>	ISO527-3	MPa	20-25	20-25
<b>Strain at break MD</b>	ISO527-3	%	150-200	120-150
<b>Tear Force TD</b>	ISO 6383-1	N	0,8	0,6
<b>Tear Strength TD</b>	ISO 6383-1	N/mm	40	35
<b>Puncture Force</b>	ISO 14477	N	0,5	0,42
<b>Puncture Elongation</b>	ISO 14477	mm	2,4	2,1
<b>Puncture Strength</b>	ISO 14477	mJ	0,9	0,6

## FORMAT AND STORAGE

**INZEA F13** is supplied in moisture-proof packaging. Typical formats are aluminum thermosealed Big Bags, Octabins and 25kg bags. All containers are perfectly sealed. The product should be stored in a dry place and opened just before processing. Storage time should not exceed six months.

## PROCESSING GUIDELINES

### Extrusion Processing

**INZEA F13** may be processed on PE extrusion lines.

The following processing temperatures are recommended:

Feed section: <25°C

Barrel zones: 130/140/150/150°C

Adapter: 150°C

Die: 150°C

Melt temperature: 150°C

**We recommend use the lowest possible temperatures to minimize vapours and starch smell, however if needed it is possible to reach up to 160°C in polymer melt with good film properties.**

In blown extrusion it is recommended a blow up ratio (BUR) of 1.8-3.0 and a cooling air temperature lower than 20°C. Single cooling air or Internal bubble cooling (IBC) systems can be used.

In cast film extrusion it is recommended to use a casting temperature of 30°C or lower.

Masterbatches used have to be compostable and used according to EN13432. For further information regarding to the use of masterbatches and suitable masterbatches in the market, please contact NUREL.

Films superficial tension is 34-36 mN/m, corone treatment is not needed before printing.

**INZEA F13** has good sealing properties at 115-135°C

Extrusion equipment is recommended to be purged with PE (MFI<5g/10min) before and after production with **INZEA F13**, as it is important that extruded should not be stopped with **INZEA F13** inside the barrels for long time.

Scraps of **INZEA F13** can be added to the same grade of **INZEA F13** raw material at a percentage below 10% without a significant loss of film properties. Scraps have to be stored in aluminum thermosealed packaging.

### Conditioning

Films made of **INZEA F13** will achieve their final properties (mechanical, permeability and coefficient of friction) after 7 days of production.

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.