

# PRODUCT DATA SHEET

## POLYETHYLENE

### FM1810

#### DESCRIPTION

**FM1810** is LLDPE resin produced using the proprietary **Borstar®** bimodal technology. FM1810 is designed for Easy processing, Good Optical properties. Film produced with FM1810 offers good impact strength and Sealing performance.

**FM1810** contains Antioxidant and processing Aid (PPA).

#### APPLICATIONS

Lamination	Food Packaging
Liquid Packaging	Impact Modifier
Agriculture Film	Multilayer Packaging Film

#### KEY FEATURES

Easy process ability, High output rates.  
Very good Optical properties  
Excellent Organoleptic Properties  
Good Impact Strength  
Good Seal Performance (low SIT, and wide sealing Window)

#### PHYSICAL PROPERTIES

Property	Typical Value*	Test Method
Density	918 kg/m <sup>3</sup>	ISO1183
Melt Flow Rate (190°C/2.16kg)	1.1 g/10min	ISO1133
Melting Temperature	122 °C	ISO 11357/03

\* Typical properties and data should not be used for specification work

#### FILM PROPERTIES (ESTIMATED)

**FM1810 film properties are measured on 40 micron blown film produced at lab scale extruder with processing conditions:** BUR = 2.5:1, FLH = 3 DD, Die gap = 1.8mm

Property**	Typical Value*	Test Method
Tensile Strength at Break (MD/TD)	45/35 MPa	ISO 527-3
Elongation at Break (MD/TD)	650/700 %	ISO 527-3
Tensile Strength at Yield (TD)	15.0 MPa	ISO 527-3
Tensile Modulus (1 % Secant) (MD/TD)	210/240 MPa	ASTM D 882
Elmendorf tear strength (MD/TD)	100/650 g	ASTM D 1922
Dart Drop Impact	>200 g	ASTM D 1709/A
Haze	8.5%	ASTM1003
Gloss (60°)	100	ISO 2813
Puncture Resistance, force	30 N	ASTM D 5748
Puncture Resistance, energy	1.0 J	ASTM D 5748

\* Typical properties and data should not be used for specification work

\*\* All films were blended with 10% LDPE.

## PROCESSING CONDITIONS

**FM1810** can be processed in most types of blown film equipment such as LDPE, LLDPE or HDPE extruders.

Recommended extrusion temperature is 170 - 200°C. Die gap of 1.4 - 2.2 mm will give the best balance between extruder pressure and physical properties in the film. **FM1810** enables energy saving by processing at lower temperature and motor load with excellent bubble stability

To boost optical properties of film made with **FM1810**, it is recommended to blend with minimum 5% LDPE

## FOOD CONTACT REGULATIONS

**FM1810** fulfils the food contact regulations in most countries. If required, contact your Borouge representative for a certificate.

## STORAGE

This product should be stored in dry conditions at temperature bellow 50°C and protected from UV-light. Improper storage can initiate degradation, which results in odour generation and colour changes and can have negative effects on physical properties of this product.

More information on storage can be found in Safety Information Sheet (SIS) for this product.

## SAFETY

The product is not classified as a hazardous mixture.

Dust and fines from the product carry a risk of dust explosion. All equipment should be properly earthed. Inhalation of dust should be avoided as it may cause irritation of the respiratory system. Small amounts of fumes are generated during processing of the product. Proper ventilation is therefore required.

Please see our Safety Information Sheet (SIS) for details on various aspects of safety, recovery and disposal of the product, for more information contact your Borouge representative.

## RECYCLING

The product is suitable for recycling using modern methods of shredding and cleaning. In-house production waste should be kept clean to facilitate direct recycling.

## RELATED DOCUMENTS

The following related documents are available on request, and represent various aspects on the usability, safety, recovery and disposal of the product.

Safety Information Sheet  
Statement on chemicals, regulations and standards

## DISCLAIMER

To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication, however, we do not assume any liability whatsoever for the accuracy and completeness of such information.

**Borouge makes no warranties which extend beyond the description contained herein. Nothing herein shall constitute any warranty of merchantability or fitness for a particular purpose.**

**It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products.**

No liability can be accepted in respect of the use of Borouge's products in conjunction with other materials. The information contained herein relates exclusively to our products when not used in conjunction with any third party materials.

Borstar® is a trademark of the Borealis group.

Jan 2020