

## TERPOLYMER Ethylene – Acrylic Ester– Maleic Anhydride

### Description

**LOTADER<sup>®</sup> 3210** is a random terpolymer of Ethylene, Acrylic Ester and Maleic Anhydride, polymerized by high-pressure autoclave process.

### Main applications

**LOTADER<sup>®</sup> 3210** is a versatile adhesive for extrusion coating or lamination, designed as:

- Concentrate to be used in dry blend with LDPE. **LOTADER<sup>®</sup> 3210** improves adhesion of LDPE on aluminium foils, metallized or primerized films.
- Ready for use resin to be used pure. **LOTADER<sup>®</sup> 3210** gives excellent adhesion on substrates like aluminium foil, metallized plastics, paper, board, PE and some plastic films like BOPP.
- Coextrusion tie layer for PE/PA in extrusion coating process.

**LOTADER<sup>®</sup> 3210** is also used as coupling agent in mineral filled compounds, as a modifier for polyamides and as a compatibilizer for polyamides / polyolefins blends.

### Typical characteristics

Characteristics	Value	Unit	Test Method
Melt index (190°C / 2,16 kg)	5	g/10mn	ASTM D 1238
Butyl Acrylate content	6	% wt	IRTF (internal)
Maleic Anhydride content	3.1	% wt	IRTF (internal)

### Main properties

- As ethylene copolymer, **LOTADER<sup>®</sup> 3210** is compatible with LDPE in all proportions, and with almost all other ethylene copolymers.
- Acrylic Ester brings softness and polarity, while keeping high thermal stability during processing.
- Maleic Anhydride gives reactivity, leading to very versatile adhesive properties to polar and non-polar substrates in coating / lamination, and to molten polymers in coextrusion.
- As a result of high-pressure polymerization in autoclave reactor, **LOTADER<sup>®</sup> 3210** molecular structure and rheology are remarkably suitable for extrusion coating / lamination: low neck-in, excellent melt stability and drawability.

## Processing

- Standard polyolefin extrusion equipment can be used for **LOTADER® 3210**, which has the same processability as LDPE and is not corrosive.
- Heat stability of acrylate comonomers allows processing temperatures as high as for LDPE. Recommended temperature ranges from 270°C up to 320 – 330°C.
- Purging **LOTADER® 3210** is readily achieved using LDPE, and it is recommended to do it before shutdown.

## Physical properties

Characteristics	Value	Unit	Test Method
Density (23°C)	0.94	g/cm <sup>3</sup>	ISO 1183
Melting point	107	°C	DSC
Vicat softening point (1 kg)	76	°C	ASTM D 1525 / ISO 306
Elongation at break (1)	600	%	ASTM D 638 / ISO R 527
Tensile strength at break (1)	12	MPa	ASTM D 638 / ISO R 527
Flexural modulus (1)	120	MPa	ASTM D 790 / ISO 178
Hardness Shore D (1)	46	-	ASTM D 2240
Brittle point	< -50	°C	ASTM D 726

(1) On compression molded samples.

## Packaging

**LOTADER® 3210** is commonly packed in 25 kg waterproof bags or 500 kg rigid containers with waterproof liner. It is recommended to reseal the bag or the liner after partial use to protect **LOTADER® 3210** against moisture. During storage, the material must be kept out of moisture in an aerated building at a temperature lower than 50°C (122°F).

## Security / Precautions of use

A safety data sheet as well as information on handling and storage of the **LOTADER® 3210** are available close to your correspondent ARKEMA or on the site [www.arkema.com](http://www.arkema.com) under heading FDS.

June 2009

The information contained in this document is based on trials carried out by our Research Centers and data selected from the literature, but shall in no event be held to constitute or imply any warranty, undertaking, express or implied commitment from our part. Our formal specifications define the limit of our commitment. No liability whatsoever can be accepted by Arkema with regard to the handling, processing or use of the products concerned which must in all cases be employed in accordance with all relevant laws and/or regulations in force in the country or countries concerned.



### Technical Polymers Division

420, rue d'Estienne d'Orves  
92705 COLOMBES Cedex

[www.arkema.com](http://www.arkema.com)

[www.lotader.com](http://www.lotader.com)