LOTADER® 4503

TERPOLYMER Ethylene – Acrylic Ester– Maleic Anhydride

Description

LOTADER 4503 is a random terpolymer of Ethylene, Acrylic Ester and Maleic Anhydride, polymerized by high-pressure autoclave process.

Main applications

LOTADER 4503 is a versatile adhesive for extrusion lamination, designed as a ready for use resin to be used pure. **LOTADER 4503** gives excellent adhesion to plain, primerless OPET films as well as to other plastic films like OPP, CPP and OPA. It also bonds to easier substrates like PE films, alu foil, metallized plastics, paper and board. Typical uses are:

- Adhesive for extrusion lamination of polar and non polar films and foils, particularly for laminates involving OPET and aluminium.
- Adhesive for coextrusion coating of LDPE / Tie / EVOH or PA / tie onto OPET or other films.

Typical characteristics

Characteristics	Value	Unit	Test Method
Melt index (190°C / 2,16 kg)	8	g/10mn	ASTM D 1238
Methyl Acrylate content	20	% wt	IRTF (internal)
Maleic Anhydride content	0.3	% wt	IRTF (internal)

Main properties

- As ethylene copolymer, **LOTADER 4503** 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.
- Maleïc Anhydride gives reactivity, leading to very versatile adhesive properties to polar and non polar substrates in coating / lamination, and to molten polymers in coextrusion.
- Optimized performance for plain primerless OPET, provided corona treatment can be used.
- As a result of high pressure polymerization in autoclave reactor, **LOTADER 4503** 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 4503**, 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, except for coextrusion with EVOH where it should stay below 230°C – 240°C.
- Purging **LOTADER 4503** 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^3	ISO 1183
Melting point	80	°C	DSC
Vicat softening point (1 kg)	45	°C	ASTM D 1525 / ISO 306
Elongation at break (1)	750	%	ASTM D 638 / ISO R 527
Tensile strength at break (1)	9	MPa	ASTM D 638 / ISO R 527
Flexural modulus (1)	20	MPa	ASTM D 790 / ISO 178
Hardness Shore D (1)	25	-	ASTM D 2240

(1) On compression molded samples.

Packaging

LOTADER 4503 is commonly packed in 25 kg bags or 500 kg rigid containers. **LOTADER 4503** pellets are not moisture sensitive.

Security / Precautions of use

Safety data sheet as well as information on handling and storage of **LOTADER 4503** are available close to your correspondent ARKEMA or at www.arkemagroup.com under heading FDS.

july 2005

Technical Polymers Division
4/8, cours Michelet – La Défense 10
92800 Puteaux - France
www.arkemagroup.com