

Technical Data Sheet

Type: ESTANE® EV 90AT2 NAT 02 is a non-halogen, flame retardant, aromatic polyether-based thermoplastic polyurethane.

Main application: Extrusion

Physical Properties	Value (Metric)	Unit	Test Method
Hardness	A/1: 90	Shore A	ISO 868
Tensile strength	29	MPa	VDE282 part 10
50% modulus	7	MPa	VDE282 part 10
100% modulus	8	MPa	VDE282 part 10
300% modulus	12	MPa	VDE282 part 10
Elongation	500	%	VDE282 part 10
Density	1.19	g/cm ³	ISO 1183
Vertical burn test	V2 (2mm)	/	UL-94
L.O.I.	23	%	ASTM D-2863
Vertical cable flame	PASS	/	IEC60332-1-2
Gas conductivity	<40	µS/mm	EN 50525-1
UV	No cracks	/	ISO 4892 (outdoor)

- * Prior to testing samples were conditioned at 23°C for 48 hours
- * Mechanical properties measured on 1 mm thick extruded strips.
- * LOI and UL94 measured on 2 mm thick extruded strips.
- * IEC 60332-1-2 tested on cable type H07BZ5-F.
- * UV tested on sample containing black color MB.
- * Listed values are “typical (average) values” and should/cannot be applied for specification purposes.

The Lubrizol Corporation (“Lubrizol”) hopes that you have found the information provided helpful, but you are cautioned that this material, including any prototype formulas, is for informational purposes only and you are solely responsible for making your own assessment of appropriate use of the information. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAWS, LUBRIZOL MAKES NO REPRESENTATIONS, GUARANTEES, OR WARRANTIES (WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHERWISE), INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR REGARDING THE COMPLETENESS, ACCURACY, OR TIMELINESS OF ANY INFORMATION. Lubrizol does not guarantee how the materials referenced herein will perform in combination with other substances, in any methods, conditions, or processes, with any equipment, or in non-laboratory environments. BEFORE COMMERCIALIZATION OF ANY PRODUCT CONTAINING THESE MATERIALS, YOU SHOULD THOROUGHLY TEST SUCH PRODUCT, INCLUDING HOW THE PRODUCT IS PACKAGED, TO DETERMINE ITS PERFORMANCE, EFFICACY, AND SAFETY. You are solely responsible for the performance, efficacy, and safety of any products you manufacture. Lubrizol shall not be liable, and you shall assume all risk and responsibility for, any use or handling of any material. Any claims may not be approved in all jurisdictions. Any entity making claims related to these products is responsible for complying with local laws and regulations. Nothing contained herein is to be considered as permission, recommendation, or inducement to practice any patented invention without permission of the patent owner, and it is your sole responsibility to determine if any issues related to patent infringement of any component or combination of components relating to the information provided exist. You acknowledge and agree that you are using the information provided herein at your own risk. If you are dissatisfied with the information provided by Lubrizol, your exclusive remedy shall be to not use the information.

Aging: Hydrolytic 80°C/7days – Heat 110°C/7days – Oil stability 100°C/7days

Test speed: 250 mm/min	Units	spec	EV 90AT2 NAT 02
Tensile initial	MPa	min. 20	29
Tensile after 1w heat aging 110 °C	MPa	± 30%	25.5 (-12%)
Tensile after 1w hydrolysis 80 °C	MPa	± 30%	24.4 (-16%)
Tensile after 1w oil immersion 100 °C	MPa	± 40%	25.8 (-11%)
Elongation initial	%	min. 300	500
Elongation after 1w heat aging 110 °C	%	± 30%	560 (+12%)
Elongation after 1w hydrolysis 80 °C	%	± 30%	540 (+8%)
Elongation after 1w oil immersion 100 °C	%	± 30%	515 (+3%)

Material Preparation

Prior to processing, **ESTANE[®] EV 90AT2 NAT 02** be dried at **100°C** for 3-4 hours.

It is recommended to dry the material in a dehumidifying type dryer.

Target dew point should be **-40°C**.

Depending on the applied processing technique, the maximum moisture level should be 0.02%

Recommended Starting EXTRUSION Temperature Profile:

	°C
Zone 1	190-200
Zone 2	190-200
Zone 3	190-200
Zone 4	185-195
Adapter (5)	185-190
Die Zone 1 (6)	185-190
Die Zone 2	185-190
Target Melt Temperature	175-185
Target RPM	20-40

In case of need, please contact our Technical Service Department

The Lubrizol Corporation ("Lubrizol") hopes that you have found the information provided helpful, but you are cautioned that this material, including any prototype formulas, is for informational purposes only and you are solely responsible for making your own assessment of appropriate use of the information. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAWS, LUBRIZOL MAKES NO REPRESENTATIONS, GUARANTEES, OR WARRANTIES (WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHERWISE), INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR REGARDING THE COMPLETENESS, ACCURACY, OR TIMELINESS OF ANY INFORMATION. Lubrizol does not guarantee how the materials referenced herein will perform in combination with other substances, in any methods, conditions, or processes, with any equipment, or in non-laboratory environments. BEFORE COMMERCIALIZATION OF ANY PRODUCT CONTAINING THESE MATERIALS, YOU SHOULD THOROUGHLY TEST SUCH PRODUCT, INCLUDING HOW THE PRODUCT IS PACKAGED, TO DETERMINE ITS PERFORMANCE, EFFICACY, AND SAFETY. You are solely responsible for the performance, efficacy, and safety of any products you manufacture. Lubrizol shall not be liable, and you shall assume all risk and responsibility for, any use or handling of any material. Any claims may not be approved in all jurisdictions. Any entity making claims related to these products is responsible for complying with local laws and regulations. Nothing contained herein is to be considered as permission, recommendation, or inducement to practice any patented invention without permission of the patent owner, and it is your sole responsibility to determine if any issues related to patent infringement of any component or combination of components relating to the information provided exists. You acknowledge and agree that you are using the information provided herein at your own risk. If you are dissatisfied with the information provided by Lubrizol, your exclusive remedy shall be to not use the information.

© 2021 The Lubrizol Corporation.

All rights reserved. All marks are the property of The Lubrizol Corporation.

go.lubrizol.com/EP

Storage

ESTANE® EV 90AT2 NAT 02 must be stored in a cool (15-25°C) and dry place. Standard Practice of consuming resin first-in first-out basis should be employed. Contact your account manager for specific information related to shelf life.

For further information refer to Lubrizol Advanced Materials processing guides.

The Lubrizol Corporation ("Lubrizol") hopes that you have found the information provided helpful, but you are cautioned that this material, including any prototype formulas, is for informational purposes only and you are solely responsible for making your own assessment of appropriate use of the information. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAWS, LUBRIZOL MAKES NO REPRESENTATIONS, GUARANTEES, OR WARRANTIES (WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHERWISE), INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR REGARDING THE COMPLETENESS, ACCURACY, OR TIMELINESS OF ANY INFORMATION. Lubrizol does not guarantee how the materials referenced herein will perform in combination with other substances, in any methods, conditions, or processes, with any equipment, or in non-laboratory environments. BEFORE COMMERCIALIZATION OF ANY PRODUCT CONTAINING THESE MATERIALS, YOU SHOULD THOROUGHLY TEST SUCH PRODUCT, INCLUDING HOW THE PRODUCT IS PACKAGED, TO DETERMINE ITS PERFORMANCE, EFFICACY, AND SAFETY. You are solely responsible for the performance, efficacy, and safety of any products you manufacture. Lubrizol shall not be liable, and you shall assume all risk and responsibility for, any use or handling of any material. Any claims may not be approved in all jurisdictions. Any entity making claims related to these products is responsible for complying with local laws and regulations. Nothing contained herein is to be considered as permission, recommendation, or inducement to practice any patented invention without permission of the patent owner, and it is your sole responsibility to determine if any issues related to patent infringement of any component or combination of components relating to the information provided exists. You acknowledge and agree that you are using the information provided herein at your own risk. If you are dissatisfied with the information provided by Lubrizol, your exclusive remedy shall be to not use the information.

© 2021 The Lubrizol Corporation.

All rights reserved. All marks are the property of The Lubrizol Corporation.

go.lubrizol.com/EP