

Model Formula for a Pharmaceutical Closure EXXPRO™ Specialty Elastomer Grade 3433

Material	Units	Amount
EXXPRO Specialty Elastomer Grade 3433	PHR(1)	100.00
Calcined Kaolin Clay	PHR	80.00
Titanium dioxide	PHR	4.00
n-Butene Isobutylene Copolymer	PHR	5.00
Hexamethylenediamine Carbamate	PHR	0.75
Total (PHR)		189.75

Properties	Test Method based on	Units and Conditions (2)	Typical Values(3)
Mooney Viscosity ML 1 + 4	ASTM D1646	MU @ 100°C	77.0
Rheometer (MDR)	ASTM D5289	180°C, 30 minutes, 0.5 °arc	
MI (Minimum torque)		dNm	1.8
Mh (Maximum torque)		dNm	8.4
Mh-MI (delta torque)		dNm	6.6
Tc50 (time to 50% torque increase)		Minutes	2.4
Tc90 (time to 90% torque increase)		Minutes	7.9
		Cured 11 minutes at 180°C (2)	
Tensile Strength	ASTM D412	MPa	4.5
Elongation at Break		%	550
Modulus 100%		MPa	1.5
Modulus 200%		MPa	2.6
Modulus 300%		MPa	3.2
Hardness	ASTM D2240	Shore A	46.0

1. Parts per Hundred Rubber.
2. Samples cured 11 minutes at 180°C
3. Values given are typical and should not be interpreted as a specification.

©2006 Exxon Mobil Corporation. This model formula provides an illustration of the properties that can be achieved with ExxonMobil polymers. It may be useful as a starting point for a development program and is not intended for use in a product or material meant for commercial or industrial sale. To the extent the user is entitled to disclose and distribute this document, the user may forward, distribute, and/or photocopy this copyrighted document only if unaltered and complete, including all of its headers, footers, disclaimers, and other information. You may not copy this document to a Web site. ExxonMobil does not guarantee the typical (or other) values. Analysis may be performed on representative samples and not the actual product shipped. The information in this document relates only to the named product or materials when not in combination with any other product or materials. We based the information on data believed to be reliable on the date compiled, but we do not represent, warrant, or otherwise guarantee, expressly or impliedly, the merchantability, fitness for a particular purpose, suitability, accuracy, reliability, or completeness of this information or the products, materials, or processes described. The user is solely responsible for all determinations regarding any use of material or product and any process in its territories of interest. ExxonMobil makes no representations or warranties against patent infringement or non-infringement of the intellectual property rights of any third party. Likewise ExxonMobil does not grant any license, express or implied, under any patents or patent applications owned by

ExxonMobil to make, use, sell, offer for sale or import any product based upon this formulation. We expressly disclaim liability for any loss, damage, or injury directly or indirectly suffered or incurred as a result of or related to anyone using or relying on any of the information in this document. There is no endorsement of any product or process, and we expressly disclaim any contrary implication. The terms "we", "our", "Exxon" "ExxonMobil Chemical", or "ExxonMobil" are used for convenience, and may include any one or more of ExxonMobil Chemical Company, Exxon Mobil Corporation, or any affiliates they directly or indirectly steward. ExxonMobil, Exxon, the ExxonMobil emblem, the ExxonMobil Chemical emblem, the "Interlocking X" Device, Escorez, Exxpro and Vistalon are trademarks of Exxon Mobil Corporation.

E18