

Bare Yarn



Covered Yarn

Benefits of X4zol™ -J in Fabrics



Thinner, stronger and more durable

Comfortable stretch

Breathable, faster drying and cooling sensation

Balanced 360° stretch for enhanced fit

Sustainable benefits – solvent free, lower process temperatures and recyclable* fiber



Chlorine and UV resistance

*Recyclability is based on access to a readily available standard recycling program that supports such materials. Products may not be available in all areas.

Innovation Alliance
Fabrics:
Ruey Tay Fibre Inc.
Stretchline Pvt. Ltd.
Tefron Ltd.
Olah Inc.
Felix SAS
Noyon Lanka Pvt. Ltd.
Sapona Manufacturing Co., Inc.

Fiber:
Premiere Fibers LLC
ChangYuan Elasten Mfg. Co. Ltd.

OEKO-TEX®
CONFIDENCE IN TEXTILES

STANDARD 100
12.HUS.06103 HOHENSTEIN HTTI

Tested for harmful substances.
www.oeko-tex.com/standard100



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.

Lubrizol Advanced Materials, Inc. / 9911 Brecksville Road, Cleveland, Ohio 44141-3247
©2022 The Lubrizol Corporation. All rights reserved. All marks are the property of The Lubrizol Corporation.

Lubrizol

x4fiber.com
x4j@lubrizol.com

22-0001932



fiber technology

X4zol™-J Fiber

A Revolution in Comfort

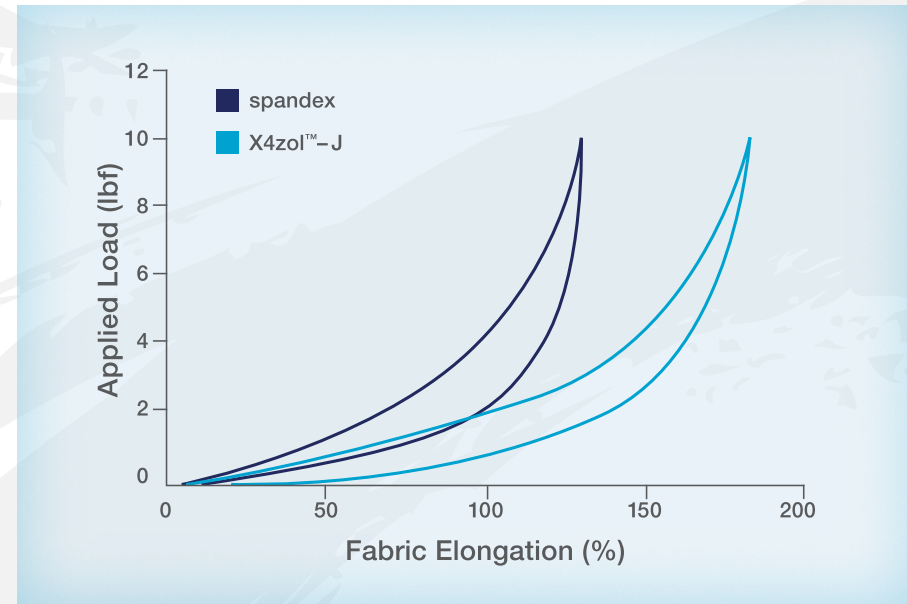
Lubrizol's innovative new fiber takes apparel fit to the next generation as it provides balanced 360° comfortable stretch and support, cooling sensation, breathability and sustainable benefits.

The Technology

Lubrizol X4zol™-J, a thermoplastic polyurethane (TPU) fiber, is an elastomeric monofilament that is manufactured differently from spandex, resulting in unique qualities that provide comfort above and beyond traditional stretch fibers. X4zol™-J is created through solvent-free melt extrusion, which is a cleaner process that produces a finer and stronger elastomeric fiber than traditional spandex.

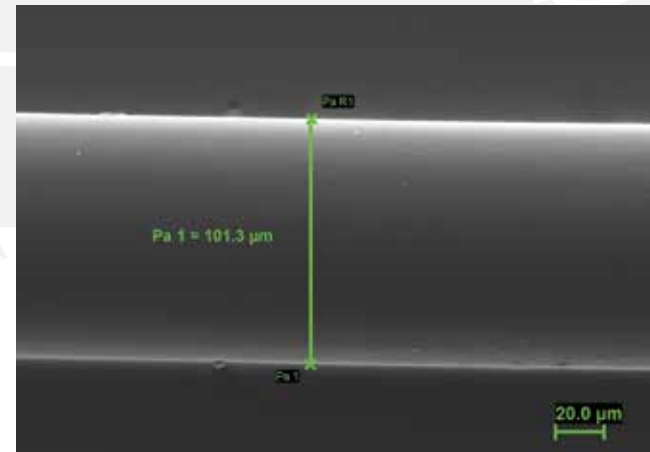
Performance: X4zol™-J vs. spandex

Most spandex fibers exhibit a steeper stress/strain curve, illustrating low initial resistance to stretch, or elongation; and then a rapid increase in resistance to the point of full elongation, or breakage. The stress/strain curve of the fabrics containing X4zol™-J illustrate a softer, more consistent stretch up to the point of full elongation — tracing a J-shape that translates into comfortable compression for the wearer.

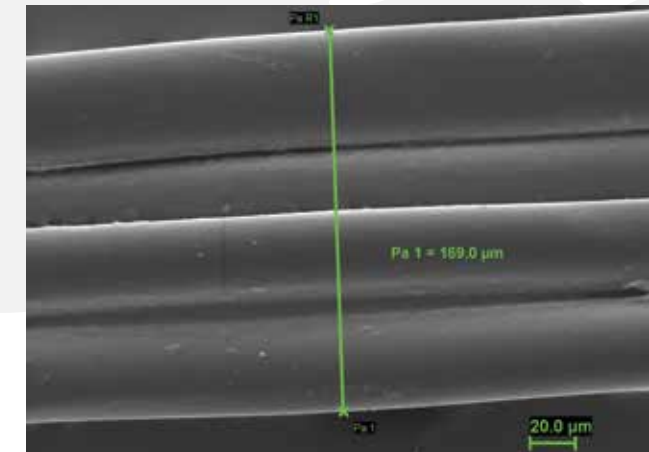


X4zol™-J: Size, Shape and Softness

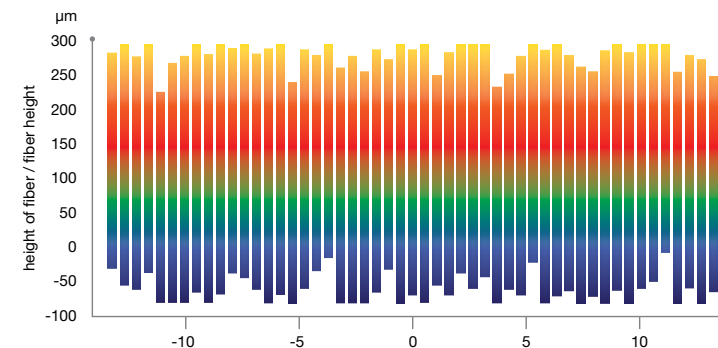
X4zol™-J is a monofilament compared to multi-filament spandex. X4zol™-J also has a higher molecular weight. The combination of these two properties translates to a thinner, stronger/durable and softer fabric.



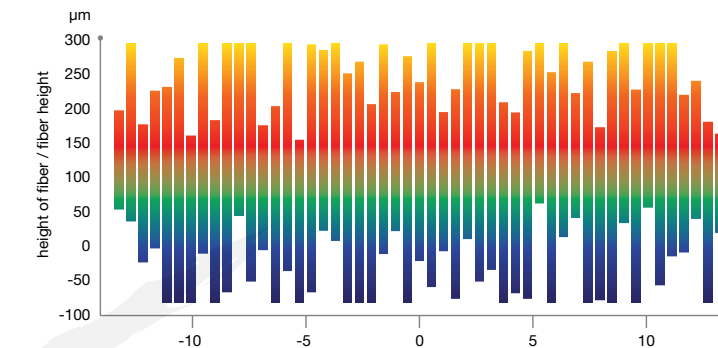
Micrograph showing transverse view of X4zol™-J – 70 Denier



Micrograph showing transverse view of spandex – 70 Denier



Surface Index Fabric Comparison*: X4zol™-J provides a smoother surface and feel

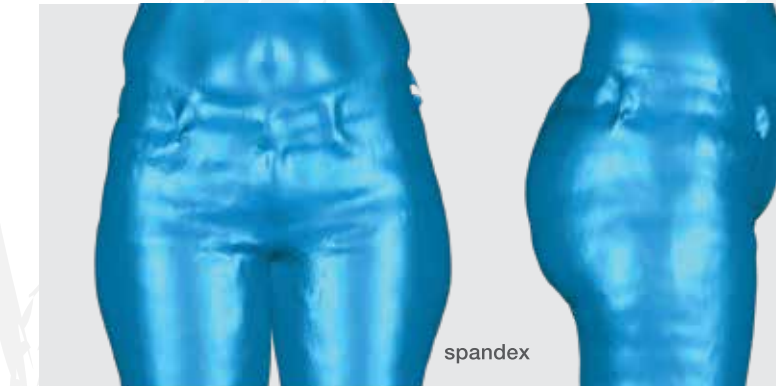


Surface Index Fabric Comparison*: spandex provides a rougher surface and feel

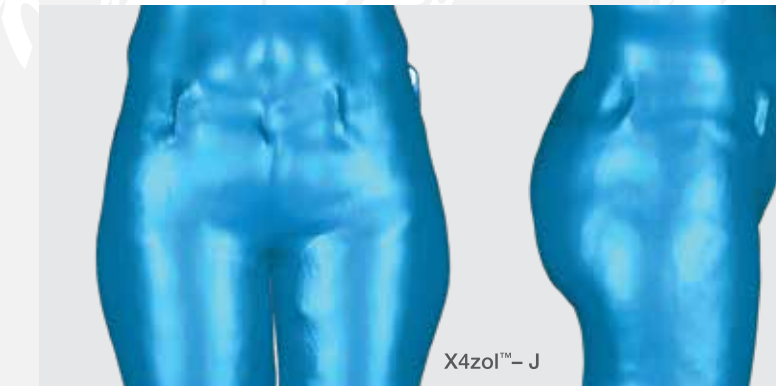
*The surface index test describes the smoothness or hairiness of a textile via a camera that captures a textile cross-section. Scientists use this cross-section to calculate the quantity and size of the protruding fibers to judge whether a textile will scratch or feel smooth. (Information via The Hohenstein Institute).

X4zol™-J: Comfort and Enhanced Fit

Body scans of denim fabrics (The Hohenstein Institute®) – improved sculpting, contouring and shaping with X4zol™-J.



spandex

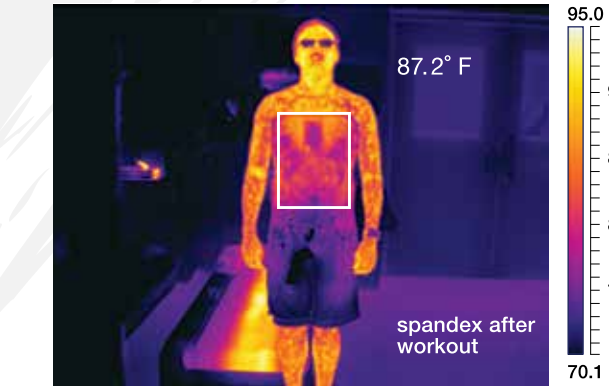


X4zol™-J

Female model, age 40-50 wearing X4zol™-J stretch denim vs. denim made with spandex.

X4zol™-J: Moisture Management and Cooling

Fabrics containing X4zol™-J can provide improved body temperature control vs. those containing spandex.



spandex after workout



X4zol™-J after workout