



True Colors of Protection

With Dyneema[®] Diamond Technology



True Protection and Comfort Now Comes in Colors

Hand protection just keeps getting brighter with Dyneema[®] Diamond Technology, the fiber for unmatched levels of cut protection and comfort.

Dyneema[®] Diamond Technology, the world's most advanced cut resistant fiber is now available in a wide range of customizable vibrant colors, based on a uniquely innovative and patented fiber dyeing and color enhancement technology that outshines the rest.

Customizable Colors for Cut Resistant Gloves

Ultra-lightweight cut resistant gloves made with Dyneema[®] Diamond Technology color-dyed fibers deliver consistent, brilliant and lasting colors, along with the maximum protection, comfort and durability they are known for.

Enhancing Safety and Operations with Colors

Color-coded Safety Protection

Dyneema[®] Diamond Technology color-dyed fibers can be used to tailor different color-coded cut resistant gloves according to different cut protection levels. This provides an easy process for safety/operational managers and workers to recognize the right cut protective glove to wear for the level of risk they face in their job.

Aesthetics

The freedom to customize colors based on Dyneema[®] Diamond Technology color-dyed fibers allows companies to design cut resistant gloves according to corporate, departmental or functional needs.





Let's Create the World's Safest Hands

Cut Resistant Gloves With Dyneema® Diamond Technology



Advanced Cut Resistance Technology

Dyneema® Diamond Technology offers maximum protection over traditional materials like aramid, leather, nylon and polyethylene with glass fiber.

It can achieve levels B, C and D based on the latest EN388 2016 standard and new ANSI/ISEA 105-16 standard levels A2, A3 and A4 without the use of glass or steel fiber reinforcement, which may break during use, causing skin irritation.



Greater Comfort & Dexterity

Dyneema® Diamond Technology fibers are thinner than generic HMPE fibers and 40% less dense than aramid fibers, making for more comfortable, thinner and cooler cut resistant gloves that provide advanced cut protection.

It also promotes skin-like dexterity, allowing users to perform delicate and precise tasks efficiently.



Higher Durability & Cost Efficiency

Cut resistant gloves made with Dyneema® Diamond Technology offer greater abrasion and U.V resistance and higher durability in comparison to gloves made with leather, aramid and polyethylene with glass fiber.

They can also be laundered and reused multiple times without losing its performance, maximizing cost efficiency.



Consistent Performance & Quality

DSM Dyneema is vertically integrated and rigorously ensures consistent performance and quality of our fibers, from manufacturing to applications developed by our partners. When you see the Dyneema® ingredient tag, you can be assured of the highest standards of performance.



Brilliant, Consistent, Customizable and Lasting Colors for Your Safety Needs

Cut resistant gloves made with Dyneema® Diamond Technology can now be customized with vibrant colors made possible with a uniquely innovative and patented fiber dyeing and color enhancement technology for your safety and operational needs.

Look inside to find out more.



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www.dyneema.com

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DSM Dyneema defines glass fiber as material constructed from continuous glass filament.

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upn and DSM Dyneema True Colors of Partnership

The combination of Dyneema® Diamond Technology’s unique patented cut protection and coloration technologies, as well as upn’s dyeing expertise and CXP Technology delivers true colors that lasts, just like our partnership.

At upn, we bring Color to Life

upn Co. is a company with a rich tradition in textile dyeing. A subsidiary of the Dong-A and Daedong Co. Ltd., who have been in the industry for over 40 years, upn Co. was set up in 2014 to focus on specialized color dyeing for high performance materials like Dyneema® Diamond Technology. upn’s R&D center and production facilities are located in Daegu, South Korea.



CXP Technology

upn Co., with its proprietary dyeing technique, CXP Technology, allows for groundbreaking color brilliance and customization options for performance materials like Dyneema® Diamond Technology, which will then be processed for use in personal protective equipment.

The CXP Technology advantage:

- No pre-treatment of material, minimizing potential loss of its properties
- Wide variety of colors with color customization options
- Allows for dyeing in combination with other materials such as polyester, cotton, etc.

Color Fastness Test Result (Based on Dyneema® Diamond Technology 3G12 440dtex fibers)

Color Fastness Test Result								
		Yellow		Red		Blue		
Laundering (KS K ISO 105-Co6, A1S 2010)	Color change	4-5		4-5		4-5		
	Color staining	Cotton	4-5		4-5		4-5	
		Nylon	4		3-4		4-5	
	Polyester	4-5		4-5		4-5		
Crocking (KS K 0650:2011)	Color staining	Dry	4-5		4		4-5	
		Wet	4-5		4-5		4-5	
Heat - Dry Air (ISO 105-P01:1993) (120°C±2°C, 30sec)	Color change	4-5		4-5		4-5		
	Color staining	Cotton	4		4-5		4-5	
		Polyester	4		4-5		4-5	
Perspiration (KS K ISO 105-E04:2010)	Color change		Acid	Alkali	Acid	Alkali	Acid	Alkali
		Cotton	4-5	4-5	4-5	4-5	4-5	4-5
		Nylon	4-5	4-5	4	4	4-5	4-5
		Polyester	4-5	4-5	4-5	4-5	4-5	4-5
			4-5	4-5	4-5	4-5	4-5	4-5
Light (KS K ISO 105-B02:2010)	Color change		3-4		3-4		4-5	

* For reference only. Color fastness results may vary according to colors and specimens.

* Based on Dyneema® Diamond Technology 3G12 440dtex fibers tested by DYETEC (Korea Dyeing Institute), 2016/02/05.

Responsible Care

- CXP Technology used to dye yarns and fabrics complies with REACH and AAFA regulations. However, upn does not guarantee this in the final application product as other chemical processes may be involved. Customers are advised to verify/validate this in their final product if required
- Similar to any other dyed yarns or fabrics like polyester and nylon, products dyed using CXP Technology are not suitable for use in the following:
 - Direct food contact
 - Medical purpose or usage
 - For handling or contact with organic solvents (may cause bleaching to colors)
- All color-dyed Dyneema® Diamond Technology yarns meet required standards for developing cut protection products. Customers are advised to verify/validate the performance to ensure that their final products adhere to their required needs/standards.



Working With Us

As a Premium Manufacturing Partner of DSM Dyneema, upn:

- Works as a toll manufacturer for dyeing of Dyneema® Diamond Technology fibers/yarn or fabrics
- Supplies color-dyed Dyneema® Diamond Technology fibers/yarn or fabrics

upn takes great care to ensure that customized colors match as close as possible to what our customers want.

We have an established process for working with our customers in a quality driven manner – from defining, refining and checking of the desired color(s) in the primary stage, to small quantity sampling for verification and confirmation before mass production.

For more information, contact us:

upn Co.

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DSM Dyneema recognizes
upn Co.
for being an innovative and top-quality
minded partner – pursuing technical
excellence within a broad product portfolio.

upn Co. is proud to be an official Premium Manufacturing Partner of DSM Dyneema and joins its mission to create the world's safest hands in the industrial workplace.

This official partnership distinguishes our expertise and commitment to the highest standards of product development, as well as production quality that meets global standards for cut resistant gloves and applications made with technologies from DSM Dyneema, such as the game changing Dyneema® Diamond Technology.