

**PUREZERO\***

Life Science Nitrile Exam Gloves



TAKE COMFORT IN THE  
PROTECTION OF **PUREZERO\***



**PUREZERO\***

## Life Science Nitrile Exam Gloves

You're responsible for important work in a laboratory environment. That's why it's so important to protect the one thing that's most critical to that work – the people actually doing it. Everyone should be wearing gloves that are highly protective and designed specifically for Life Science applications since lab workers may spend hours every day dealing with a variety of chemicals - some with the potential to impact their health and wellbeing. To meet your own high standards, those gloves have to be thoroughly tested, reliably supplied, and sustainably manufactured.

**PUREZERO\*** Life Science Nitrile Gloves deliver on all fronts:

- Barrier Protection - tested against 57 chemicals, 3 levels of color coded protection with increasing thickness designed for Life Science applications.
- Sustainability - our SAFESKIN\* manufacturing facility uses 92% renewable energy, dispensers are made with up to 85% recycled materials, and cases are made with up to 99% recycled pulp.
- Supply Reliability - assured by our vertically integrated supply chain, and backed by our 20+ years of experience manufacturing nitrile exam gloves for the industrial market.



# PUREZERO\*

## Life Science Nitrile Exam Gloves

You can take comfort in the protection of HALYARD\* **PUREZERO\*** Life Science Nitrile Exam Gloves thanks to our:

### BARRIER PROTECTION

- ✓ Comprehensive testing and standards
- ✓ Above industry average AQL (1.0)
- ✓ 3 levels of color coded protection with increasing thickness
- ✓ Tested against 57 Chemicals, up to 14 Chemotherapy Drugs, and Fentanyl<sup>††</sup>
- ✓ Not made with natural rubber latex, for protection against Type IV allergies

### SUSTAINABILITY

- ✓ Our Safeskin Glove Manufacturing facility (Thailand) uses 92% renewable energy
- ✓ **PUREZERO\*** Life Science Glove dispensers are made with up to 85% recycled materials, and cases are made with up to 99% recycled pulp
- ✓ The innovative SMARTPULL\* Dispenser<sup>1</sup> reduces total waste by an average of 38.2% compared to a leading competitor
- ✓ **PUREZERO\*** Life Science Gloves are manufactured in a facility that complies with the requirements of ISO 14001: 2015 - Environmental Management System<sup>†</sup>

### SUPPLY RELIABILITY

- ✓ Delivered through our vertically integrated global supply chain
- ✓ Backed by our 20+ years of experience manufacturing nitrile exam gloves for the industrial market
- ✓ Traceability of raw materials to their original source
- ✓ Manufactured at our own Safeskin Facility in Thailand<sup>†</sup>



† Excluding ULTRA VIOLET\*  
†† ULTRA VIOLET\* Nitrile Exam  
Gloves are not tested against  
Fentanyl

# PUREZERO\*

## Life Science Nitrile Exam Gloves



Manufactured at OUR OWN  
Safeskin Facility in Thailand.†

### YOUR BEST GLOVE PARTNER. PURE AND SIMPLE.

O&M Halyard is committed to supporting your unique needs, reliably and responsibly.

### Global Footprint, Support and Logistics

From raw materials to distribution, we have full control over our global supply chain. In fact, we can support all your glove needs because we manufacture both cleanroom and life science gloves.

### Social Responsibility

At O&M Halyard, our ethics are an open book. You can find our Code of Honor, Corporate Responsibility Policy and Vendor Code of Conduct on our Ethics and Compliance website, which includes prohibition of forced labor and abuse of labor as well as protection against child labor and the exploitation of children. ([investors.owens-minor.com/esg](https://investors.owens-minor.com/esg))

### Risk-Free Conversion

With our decades of life science exam glove manufacturing experience, O&M Halyard can provide all the support you need to easily convert from your current glove to **PUREZERO\*** Life Science Nitrile Gloves, including:

- Technical documentation
- Validation data
- Product knowledge and expertise

Try on these gloves, feel the difference — and you'll discover the answer is **PUREZERO\***.  
To trial our gloves, contact your Distributor today, or email us at [info@hyh.com](mailto:info@hyh.com).

† Excluding ULTRA VIOLET\*



# PUREZERO\*

## Life Science Nitrile Exam Gloves

# PUREZERO\* LIFE SCIENCE GLOVE PORTFOLIO

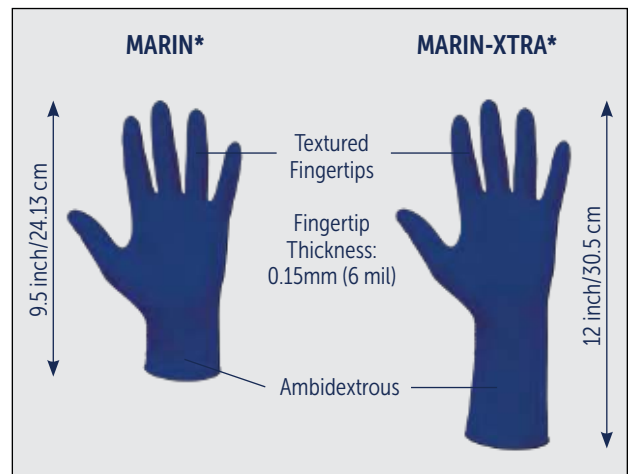
HALYARD\* offers a nitrile portfolio of five Life Science Gloves in three levels of protection for medical, industrial, and lab use.

## HALYARD\* PUREZERO\* MARIN\* AND MARIN-XTRA\* NITRILE EXAM GLOVES

PUREZERO\* MARIN\* (9.5") and MARIN-XTRA\* (12") Nitrile Exam Gloves are designed for use in laboratories, research environments and clean areas with applications in pharmaceutical, medical device manufacturing, biotechnology and food processing/handling. The beaded cuff allows for ease of donning, and textured fingertips provide tactile agility.

### Physical Properties

AQL	1.0
Non-Sterile	✓
Ambidextrous	✓
Textured Fingertips	✓
Not Made With Natural Rubber Latex	✓
Powder-Free	✓
Tensile Strength <sup>2</sup>	42 MPa (Target)
Ultimate Elongation <sup>2</sup>	600%
Shelf Life	3 Years



HALYARD\* PUREZERO\* MARIN\* Nitrile Exam Gloves - 9.5"/24cm Length

Code	Size	Box Qty.	Case Qty.
LFS111XS	XS	100	1000
LFS111SM	S	100	1000
LFS111MD	M	100	1000
LFS111LG	L	100	1000
LFS111XL	XL	90	900

HALYARD\* PUREZERO\* MARIN-XTRA\* Nitrile Exam Gloves - 12"/30.5cm Length

Code	Size	Box Qty.	Case Qty.
LFS121XS	XS	50	500
LFS121SM	S	50	500
LFS121MD	M	50	500
LFS121LG	L	50	500
LFS121XL	XL	50	500



# PUREZERO\*

## Life Science Nitrile Exam Gloves

### HALYARD\* PUREZERO\* LIMON\* AND LIMON-XTRA\* NITRILE EXAM GLOVES

PUREZERO\* LIMON\* (9.5") and LIMON-XTRA\* (12") Nitrile Exam Gloves are designed for use in laboratories, research environments and clean areas with applications in pharmaceutical, medical device manufacturing, biotechnology and food processing/handling. The beaded cuff allows for ease of donning, and textured fingertips provide tactile agility.

#### Physical Properties

AQL	1.0
Non-Sterile	✓
Ambidextrous	✓
Textured Fingertips	✓
Not Made With Natural Rubber Latex	✓
Powder-Free	✓
Tensile Strength <sup>2</sup>	38 MPa (Target)
Ultimate Elongation <sup>2</sup>	550%
Shelf Life	3 Years



HALYARD\* PUREZERO\* LIMON\* Nitrile Exam Gloves - 9.5"/24cm Length

Code	Size	Box Qty.	Case Qty.
LFS311XS	XS	200	2000
LFS311SM	S	200	2000
LFS311MD	M	200	2000
LFS311LG	L	200	2000
LFS311XL	XL	170	1700

HALYARD\* PUREZERO\* LIMON-XTRA\* Nitrile Exam Gloves - 12"/30.5cm Length

Code	Size	Box Qty.	Case Qty.
LFS321XS	XS	100	1000
LFS321SM	S	100	1000
LFS321MD	M	100	1000
LFS321LG	L	100	1000
LFS321XL	XL	100	1000

### HALYARD\* PUREZERO\* ULTRA VIOLET\* NITRILE EXAM GLOVES

PUREZERO\* ULTRA VIOLET\* (9.5") Nitrile Exam Gloves are designed for use in laboratories, research environments and clean areas with applications in pharmaceutical, medical device manufacturing, biotechnology and food processing/handling. The beaded cuff allows for ease of donning, and textured fingertips provide tactile agility.

#### Physical Properties

AQL	1.0
Non-Sterile	✓
Ambidextrous	✓
Textured Fingertips	✓
Not Made With Natural Rubber Latex	✓
Powder-Free	✓
Tensile Strength <sup>2</sup>	20 MPa (Target)
Ultimate Elongation <sup>2</sup>	530%
Shelf Life	3 Years

#### Ordering Information

Code	Size	Box Qty.	Case Qty.
LFS511XS	XS	250	2500
LFS511SM	S	250	2500
LFS511MD	M	250	2500
LFS511LG	L	250	2500
LFS511XL	XL	230	2300



# PUREZERO\*

## Life Science Nitrile Exam Gloves

### ADDED PROTECTION FROM THE RISK OF CHEMICAL EXPOSURE

It's critical to protect staff from exposure to potentially hazardous chemotherapy drugs and chemicals. In addition to providing a barrier to chemical splash, microorganisms and viruses, **PUREZERO\*** Life Science Gloves are **now tested against up to 14 chemotherapy drugs and 57 chemicals.**

### CHEMOTHERAPY DRUG RESISTANCE GUIDE<sup>3</sup>

Chemotherapy Agent (Concentration in ppm)	HALYARD* PUREZERO* MARIN* & MARIN-XTRA* Nitrile Exam Gloves		HALYARD* PUREZERO* LIMON* & LIMON-XTRA* Nitrile Exam Gloves		HALYARD* PUREZERO* ULTRA VIOLET* Nitrile Exam Gloves	
	Minimum Breakthrough Time (minutes)	Permeation Rate (µg/cm²/min)	Minimum Breakthrough Time (minutes)	Permeation Rate (µg/cm²/min)	Minimum Breakthrough Time (minutes)	Permeation Rate (µg/cm²/min)
Carmustine (BCNU) (3,300)	55.2	0.5	34.3	0.6	16.2	0.5
Cisplatin (1,000)	>240	NA	>240	NA	>240	NA
Cyclophosphamide (20,000)	>240	NA	>240	NA	>240	NA
Dacarbazine (10,000)	>240	NA	>240	NA	>240	NA
Doxorubicin HCL (2,000)	>240	NA	>240	NA	>240	NA
Etoposide (20,000)	>240	NA	>240	NA	>240	NA
Fluorouracil (50,000)	>240	NA	>240	NA	>240	NA
Ifosfamide (50,000)	>240	NA	>240	NA	>240	NA
Methotrexate (25,000)	>240	NA	>240	NA	>240	NA
Mitomycin C (500)	>240	NA	>240	NA	>240	NA
Mitoxantrone (2,000)	>240	NA	>240	NA	>240	NA
Paclitaxel (6,000)	>240	NA	>240	NA	>240	NA
Thiotepa (10,000)	88.6	0.01	87.6	0.1	28.4	1.6
Vincristine (1,000)	>240	NA	>240	NA	>240	NA

#### Additional Tests

Fentanyl Citrate Injection, 100 mcg/2mL	>240		>240		Not Tested	Not Tested
Simulated Gastric Acid Fluid/ Fentanyl Citrate Injection Mix 50/50 Solution	>240		>240		Not Tested	Not Tested

Use the rating system below to determine the chemotherapy compatibility for exposure:

<10	Not recommended for use - breakthrough can occur in less than 10 minutes.
11 - 239	Use with caution - breakthrough can occur between 11 and 239 minutes.
>240	Recommended for protection - no breakthrough up to 240 minutes.
N/A	The chemotherapy drug did not reach the minimum permeation rate (0.01 µg/cm²/min) as defined within ASTM D6978.

**CAUTION:** It's the user's responsibility to determine the applicability of these gloves for their intended use with chemotherapy drugs.

\*Tested per ASTM D6978, Standard Practice Assessment of Resistance of Medical Gloves to Permeation by Chemotherapy Drugs. The testing conditions used are intended to approximate the worst case conditions for use. Testing was conducted on a single layer glove material.

Contact your Sales Representative for additional chemical and chemotherapy drug testing information.

**CHEMICAL RESISTANCE GUIDE<sup>4</sup>**

Chemical (Concentration %)	HALYARD* PUREZERO* MARIN* & MARIN-XTRA* Nitrile Exam Gloves		HALYARD* PUREZERO* LIMON* & LIMON-XTRA* Nitrile Exam Gloves		HALYARD* PUREZERO* ULTRA VIOLET* Nitrile Exam Gloves	
	Average Breakthrough Time (minutes)	Average Steady State Permeation Rate (µg/cm <sup>2</sup> /min)	Average Breakthrough Time (minutes)	Average Steady State Permeation Rate (µg/cm <sup>2</sup> /min)	Average Breakthrough Time (minutes)	Average Steady State Permeation Rate (µg/cm <sup>2</sup> /min)
n-Amyl, Acetate (100)	0	2.90E+01	0	2.30E+01	0	2.50E+01
Acetic Acid (Glacial)	10	1.10E+04	10	1.30E+04	0	4.60E+04
Acrylamide (40)	243.3	<0.1	120	0.2	66.7	0.2
Ammonium Hydroxide (30)	0	2.20E+02	10	5.10E+02	23.3	1.60E+01
Carbon Disulfide (99.9)	0	-	0	-	0	-
Carbon Tetrachloride (99.9)	8	-	0	-	0	-
CaviCide	>480	<0.1	>480	<0.1	86.7	14.5
Chlorhexidine Digluconate (4)	>480	<0.1	>480	<0.1	>480	<0.1
Cidex OPA	173.3	1.2	66.7	1.9	86.7	2.1
Citric Acid (10)	>480	<0.1	>480	<0.1	>480	<0.1
Citric Acid (50)	>480	<0.1	>480	<0.1	>480	<0.1
Cyclohexane, ACS Reagent (99)	45.3	2.70E+01	32	5.80E+01	50.7	7.6
Cyclohexanol (99)	>480	<0.1	128	1.9	>480	<0.1
Denatured Ethanol (92)	8	1.00E+02	9	-	0	1.10E+02
Dibutyl Phthalate (99)	80	<0.1	53.3	<0.1	40	<0.1
Diisobutyl Ketone (90)	8	1.70E+01	0	14.8	8	1.60E+01
Dimethyl Sulfoxide	10	-	5	-	0	-
Ethidium Bromide (1)	>480	<0.1	>480	<0.1	>480	<0.1
Ethyl Alcohol (99)	16	3.20E+01	8	5.60E+01	8	5.80E+01
Ethylene Glycol (99)	>480	<0.1	>480	<0.1	>480	<0.1
Formaldehyde (37)	>480	<0.1	>480	<0.1	140	<0.1
Formalin (Tested for Formaldehyde)	>480	<0.1	>480	<0.1	>480	<0.1
Formalin (Tested for Methanol)	>480	<0.1	>480	<0.1	>480	<0.1
Glutaraldehyde (25)	>480	<0.1	>480	<0.1	>480	<0.1
Glutaraldehyde (50)	>480	<0.1	>480	<0.1	246.7	2.1
Hydrazine (65)	140	0.3	86.7	2.80E+01	96.7	3.90E+01
Hydrazine (98)	136.7	6.6	46.7	6.9	30	9.0
Hydrochloric Acid (10)	>480	<0.1	>480	<0.1	>480	<0.1
Hydrochloric Acid (37)	286.7	6.40E+01	113.3	4.60E+02	80	6.40E+02
Hydrogen Peroxide (3)	>480	<0.1	>480	<0.1	>480	<0.1
Hydrogen Peroxide (30)	60	0.7	23.3	0.9	10	3.8
Instra-Clean Single Enzyme Solution	>480	<0.1	>480	<0.1	>480	<0.1
Isopropyl Alcohol (70)	41	5.8	24	8.4	8	11.1
Isopropyl Alcohol (99)	41	1.40E+01	24	21.7	16	4.4
MetriCide 14 Day Cleaner	>480	<0.1	>480	<0.1	>480	<0.1
n-Hexane (96)	40	2.3	8	3.50E+01	16	1.20E+01
Nitric Acid (10)	>480	<0.1	>480	<0.1	>480	<0.1
Nitric Acid (70)	5	1.20E+03	0	6.80E+03	0	4.20E+05



**CHEMICAL RESISTANCE GUIDE<sup>4</sup> (CONTINUED)**

Chemical (Concentration %)	HALYARD* PUREZERO* MARIN* & MARIN-XTRA* Nitrile Exam Gloves		HALYARD* PUREZERO* LIMON* & LIMON-XTRA* Nitrile Exam Gloves		HALYARD* PUREZERO* ULTRA VIOLET* Nitrile Exam Gloves	
	Average Breakthrough Time (minutes)	Average Steady State Permeation Rate (µg/cm <sup>2</sup> /min)	Average Breakthrough Time (minutes)	Average Steady State Permeation Rate (µg/cm <sup>2</sup> /min)	Average Breakthrough Time (minutes)	Average Steady State Permeation Rate (µg/cm <sup>2</sup> /min)
n-Octyl Alcohol, ACS Reagent (99)	>480	<0.1	>480	<0.1	>480	<0.1
Oleic Acid (90)	>480	<0.1	>480	<0.1	>480	<0.1
Oxycide Concentrated	31.7	3.60E+01	15	-	10	-
Oxycide RTU	>480	<0.1	>480	<0.1	>480	<0.1
Phosphoric Acid (85)	>480	<0.1	>480	<0.1	>480	<0.1
Potassium Hydroxide (50)	>480	<0.1	>480	<0.1	>480	<0.1
Povidone Iodine (10)	>480	<0.1	>480	<0.1	>480	<0.1
n-Propyl Alcohol HPLC Grade	29.3	3.20E+01	16	3.90E+01	8	3.70E+01
Propylene Glycol (100)	>480	<0.1	>480	<0.1	>480	<0.1
Propylene Glycol Methyl Ether Acetate	0	-	5	0.2	0	-
Quaternary Cleaners	>480	<0.1	>480	<0.1	>480	<0.1
Sodium Hydroxide (50)	>480	<0.1	>480	<0.1	>480	<0.1
Sodium Hypochlorite (10-13)	>480	<0.1	>480	<0.1	>480	<0.1
Stoddard Solvent	95	2.6	34.7	4.5	8	0.5
Sulfuric Acid (50)	>480	<0.1	>480	<0.1	>480	<0.1
Triethanolamine (99)	>480	<0.1	>480	<0.1	>480	<0.1
Turpentine	77	3.60E+01	24	3.40E+01	37.3	3.90E+01
O-Xylene, Reagent Grade (98)	0	1.60E+13	0	1.10E+13	0	-
Xylenes Mixed (Xylol)	0	1.80E+12	0	3.90E+12	0	-

Use the rating system below to determine the chemical compatibility for exposure:

<10	Not recommended for use - breakthrough can occur in less than 10 minutes.
11 - 479	Use with caution - breakthrough can occur between 11 and 479 minutes.
>480	Permeation breakthrough is excellent. Permeation does not occur during the test (8 hours).
—	The permeation rate was beyond the range of the detection instruments. The permeation of the chemical through the glove film may be too high for the detector to reach a steady-state reading.

**CAUTION:** It's the user's responsibility to determine the applicability of these gloves for their intended use. Always factor in the physical performance requirements of the job or application when selecting a glove that is used with chemicals.

**DEFINITION OF TERMS**

**Breakthrough time:** The time required for the test chemical to be detected on the inside of the glove. Essentially, this is the amount of time that the glove can resist a chemical when the glove is fully immersed in the chemical.

**Permeation:** The process where chemicals, such as liquids, gases and vapors can pass through a glove film (or other PPE interfaces) without penetrating directly through a pinhole, tear or other visible opening.

**Permeation rate:** The flowrate of the chemical after the chemical breaks through the inside of the glove. It is measured in amount per surface area of the glove per time (µg/cm<sup>2</sup>/min.)

# ORDERING INFORMATION

PUREZERO* MARIN* Nitrile Exam Gloves - 9.5"			
CODE	SIZE	BOX QTY	CASE QTY
LFS111XS	XS	100	1000
LFS111SM	SM	100	1000
LFS111MD	MD	100	1000
LFS111LG	LG	100	1000
LFS111XL	XL	90	900

PUREZERO* MARIN-XTRA* Nitrile Exam Gloves - 12"			
CODE	SIZE	BOX QTY	CASE QTY
LFS121XS	XS	50	500
LFS121SM	SM	50	500
LFS121MD	MD	50	500
LFS121LG	LG	50	500
LFS121XL	XL	50	500

PUREZERO* LIMON* Nitrile Exam Gloves - 9.5"			
CODE	SIZE	BOX QTY	CASE QTY
LFS311XS	XS	200	2000
LFS311SM	SM	200	2000
LFS311MD	MD	200	2000
LFS311LG	LG	200	2000
LFS311XL	XL	170	1700

PUREZERO* LIMON-XTRA* Nitrile Exam Gloves - 12"			
CODE	SIZE	BOX QTY	CASE QTY
LFS321XS	XS	100	1000
LFS321SM	SM	100	1000
LFS321MD	MD	100	1000
LFS321LG	LG	100	1000
LFS321XL	XL	100	1000

PUREZERO* ULTRA VIOLET* Nitrile Exam Gloves - 9.5"			
CODE	SIZE	BOX QTY	CASE QTY
LFS511XS	XS	250	2500
LFS511SM	SM	250	2500
LFS511MD	MD	250	2500
LFS511LG	LG	250	2500
LFS511XL	XL	230	2300



 **Manufactured at OUR OWN Safeskin Facility in Thailand.†**

1 Available with several PUREZERO\* glove versions  
 2 Tested per ASTM D6319, EN 455-2  
 3 Tested per ASTM D6978, Standard Practice Assessment of Resistance of Medical Gloves to Permeation by Chemotherapy Drugs. The testing conditions used are intended to approximate the worst case conditions for use. Testing was conducted on a single layer glove material.  
 4 Gloves tested for chemical resistance per EN 16523-1. This European Standard specifies a test method for the determination of the resistance of protective clothing, gloves and footwear materials to permeation by potential hazardous liquid chemicals under the condition of continuous contact. The testing conditions used are intended to approximate the worst case conditions for use. Testing was conducted on a single layer glove material.  
 † Excluding ULTRA VIOLET\*