

**PUREZERO\***

Cleanroom Nitrile Gloves



**MANAGE YOUR CLEANROOM RISKS  
WITH HALYARD\* **PUREZERO\***  
NITRILE GLOVES**



For the Cleanroom Environment

**PUREZERO\***

## Cleanroom Nitrile Gloves

Because you're responsible for managing risks in your cleanroom operation, choosing the right cleanroom glove is critical.

Your gloves play an important role: protecting your workers as well as your products and processes. Plus you need a reliable supply to avoid operations disruption. That's why we created HALYARD\* **PUREZERO\*** Cleanroom Gloves.

**PUREZERO\*** Cleanroom Gloves are ideal for applications that involve handling delicate equipment in microelectronics, semiconductors, optics, pharmaceutical and medical device manufacturing applications. In fact, they are specifically designed to meet the stringent requirements of contamination controlled environments.

As the name implies, **PUREZERO\*** gloves are designed to meet standards, to help you:

- manage user comfort and protection
- manage product contamination
- manage supply chain





# PUREZERO\*

## Cleanroom Nitrile Gloves

### USER COMFORT AND PROTECTION

**The accelerator-free<sup>1</sup> formulation of PUREZERO\* Nitrile Cleanroom Gloves is the solution.** It reduces the risk of allergies and skin irritation associated with accelerator chemicals in other nitrile gloves. As a result, **PUREZERO\*** gloves are comfortable to wear, allowing workers to focus on their delicate tasks rather than their gloves.

**PUREZERO\*** Cleanroom Nitrile Gloves are designed to protect workers with effective barrier protection against chemical splash, micro-organisms and contaminations.

Our Cleanroom Gloves are certified as PPE category III per the Regulation (EU) 2016/425 EEC. The applicable standards are:

- EN ISO 374-1: 2016 Type C K - dangerous chemicals and micro-organisms (Permeation time)
- EN ISO 374-2: 2019 Dangerous chemicals and microorganisms (Determining resistance to penetration holes/defects)
- EN ISO 374-4: 2019 Resistance to Degradation by Chemicals
- EN ISO 374-5:2016 Micro-organism and Virus Protection
- EN 420:2003 +A1:2009 General Requirements for Protective Gloves
- EN 16523-1:2015+A1:2018 Permeation of chemicals (+IPA 70%)
- ISO 16604:2004 contact with blood and body fluids
- ASTM D6978 Permeation testing on chemotherapy drugs (14 drugs)

### PRODUCT CONTAMINATION

**A consistent quality of PUREZERO\* Cleanroom Gloves ensures low particle and endotoxin levels.** HALYARD\* **PUREZERO\*** Gloves are manufactured and packaged at our ISO 9001 and ISO 13485 certified facility in state-of-the-art cleanrooms and are **recommended for ISO Class 4/5/6/7 and Grade A/B/C/D + aseptic cleanrooms or cleanzones.** Our gloves are clean processed (washed repeatedly in deionized water) to ensure consistent control of low particles, extractables and endotoxin levels.

- Low Particle Levels max 950  $\geq$  0.5 $\mu$ m/cm<sup>2</sup> for white gloves, max 1200  $\geq$  0.5 $\mu$ m/cm<sup>2</sup> for blue gloves
- Sterility Assurance Levels (SAL) of 10<sup>-6</sup> and an endotoxin level of 20 units/pair maximum
- AQL of 1 for pinholes
- Triple layer packaging (poly pouch and poly bag plus case liner).
- HALYARD\* **PUREZERO\*** HG3 light blue sterile nitrile gloves: 300 hand specific pairs per case: two gloves/ poly wallet & pouch X30 sealed pouches per PE bag x 10 PE bags per lined carton.
- HALYARD\*\* **PUREZERO\*** HG3 white sterile nitrile gloves: 200 hand specific pairs per case: 2 gloves/poly wallet & pouch x20 sealed pouches per bag x10 PE bags per lined carton



You can rely on consistent quality, with Certificates of Analysis (CoA), and Certificates of Irradiation (Col) easily accessible online for every production lot. You can also find the Declaration of Conformity (DoC) documents showing compliance to applicable regulations and standards, all at [www.halyardhealth.com/information](http://www.halyardhealth.com/information).

**PUREZERO\***

## Cleanroom Nitrile Gloves



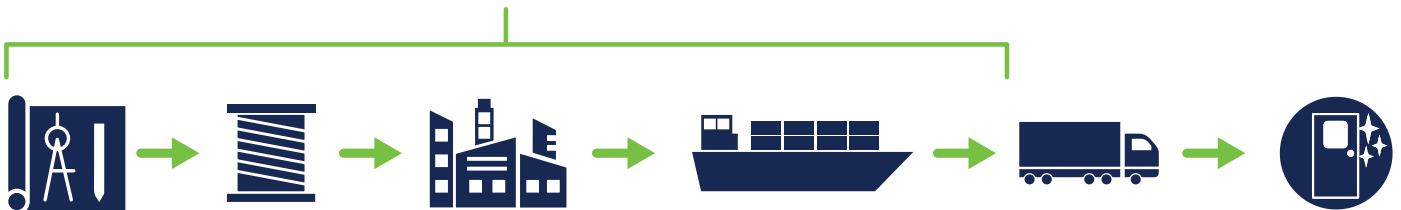
Manufactured at OUR  
Safeskin Facility in Thailand.

### RELIABLE SUPPLY CHAIN THROUGH VERTICAL INTEGRATION

**PUREZERO\* Cleanroom Gloves ensure reliable supply, regulatory compliance and consistent quality.**

HALYARD\* has manufactured leading private label cleanroom gloves for more than 20 years at our Safeskin Medical & Scientific (Thailand) Ltd. manufacturing facility, which holds ISO 9001 and ISO 13485 certifications.

We control the materials and design while adhering to strict quality standards and product specifications in our own facilities, with our own teammates. Quality and sterility assurance levels are guaranteed, with all raw materials and components traceable to their original supplier. And with our global product codes, you can use **one code/SKU from HALYARD\* globally at all of your production facilities.**



From raw materials to distribution, we have full control over our global supply chain.

### RISK-FREE CONVERSION

With our years of glove experience, HALYARD\* can provide all the support you need to easily convert from your current glove to **PUREZERO\*** Cleanroom Gloves, including:

- **Technical documentation**
- **Validation data**
- **Product knowledge and expertise**

To trial HALYARD\* **PUREZERO\*** Cleanroom Gloves, contact your Cleanroom distributor today, or email us at [info@hyh.com](mailto:info@hyh.com).



# PUREZERO\*

## Cleanroom Nitrile Gloves

HALYARD\* offers an accelerator-free<sup>1</sup> portfolio of three non-sterile and two sterile cleanroom gloves to address the needs of pharmaceutical, medical device, microelectronics and semi conductor manufacturing industries.

### NON-STERILE

#### HALYARD\* PUREZERO\* HG3 WHITE NITRILE GLOVES

Recommended for use in ISO 4/5/6/7/8 and GMP Grade A/B/C/D cleanrooms or cleanzones.

**PUREZERO\*** HG3 White Nitrile Cleanroom Gloves are non-sterile, ambidextrous, and 12 inches (305mm) long with a high tack/grip surface and feature a beaded cuff to aid in donning and help prevent roll down.



#### Physical Properties

AQL	1
Non-Sterile	✓
Ambidextrous	✓
Tacky Outer Glove Finish	✓
Textured Fingertips	✓
Accelerator-Free	✓
Latex-Free	✓
Powder-Free	✓
Silicone-Free	✓
Tensile Strength <sup>2</sup>	20 MPa (Target)
Ultimate Elongation <sup>2</sup>	600%
Shelf Life	5 Years

#### Cleanliness Properties

Max Particle Count	≥0.5µm / cm <sup>2</sup> <950	IEST RP-CC005
Ionic Content (Extractable ions)	Max Level (µg/g)	IEST RP-CC005
Calcium	50	
Chloride	35	
Magnesium	5	
Nitrate	20	
Potassium	5	
Sodium	10	
Sulfate	10	
Zinc	25	
Ammonium	5	

For use in ISO 4/5/6/7/8,  
GMP Grade A/B/C/D  
TACKY FINISH

#### Ordering Information

Size	Code
XS	CLN3031XS
SM	CLN3031SM
MD	CLN3031MD
LG	CLN3031LG
XL	CLN3031XL

#### HALYARD\* PUREZERO\* HG3 LIGHT BLUE NITRILE GLOVES

Recommended for use in ISO 4/5/6/7/8 and GMP Grade A/B/C/D cleanrooms or cleanzones.

**PUREZERO\*** HG3 Light Blue Nitrile Cleanroom Gloves are non-sterile, ambidextrous, and 12 inches (305mm) long with a high tack/grip surface and feature a beaded cuff to aid in donning and help prevent roll down.



#### Physical Properties

AQL	1
Non-Sterile	✓
Ambidextrous	✓
Tacky Outer Glove Finish	✓
Textured Fingertips	✓
Accelerator-Free	✓
Latex-Free	✓
Powder-Free	✓
Silicone-Free	✓
Tensile Strength <sup>2</sup>	20 MPa (Target)
Ultimate Elongation <sup>2</sup>	600%
Shelf Life	5 Years

#### Cleanliness Properties

Max Particle Count	≥0.5µm / cm <sup>2</sup> <1200	IEST RP-CC005
Ionic Content (Extractable ions)	Max Level (µg/g)	IEST RP-CC005
Calcium	50	
Chloride	35	
Magnesium	5	
Nitrate	20	
Potassium	5	
Sodium	10	
Sulfate	10	
Zinc	25	
Ammonium	5	

For use in ISO 4/5/6/7/8,  
GMP Grade A/B/C/D  
TACKY FINISH

#### Ordering Information

Size	Code
XS	CLN9031XS
SM	CLN9031SM
MD	CLN9031MD
LG	CLN9031LG
XL	CLN9031XL

# PUREZERO\*

## Cleanroom Nitrile Gloves

NON-STERILE (Continued)

### HALYARD\* PUREZERO\* HG3 SGX WHITE NITRILE GLOVES

Recommended for use in ISO Class 4/5/6/7/8 and GMP Grade A/B/C/D cleanrooms or cleanzones. PUREZERO\* HG3 SGX White Nitrile Cleanroom Gloves are non-sterile, ambidextrous, and 12 inches (305mm) long with a smooth finish and feature a beaded cuff to aid in donning and help prevent roll down.



#### Physical Properties

AQL	1
Non-Sterile	✓
Ambidextrous	✓
Smooth Outer Glove Finish	✓
Textured Fingertips	✓
Accelerator-Free	✓
Latex-Free	✓
Powder-Free	✓
Silicone-Free	✓
Tensile Strength <sup>2</sup>	20 MPa (Target)
Ultimate Elongation <sup>2</sup>	600%
Shelf Life	5 Years

#### Cleanliness Properties

Max Particle Count	≥0.5µm / cm <sup>2</sup> <950	IEST RP-CC005
Ionic Content (Extractable ions)	Max Level (µg/g)	IEST RP-CC005
Calcium	50	
Chloride	35	
Magnesium	5	
Nitrate	20	
Potassium	5	
Sodium	10	
Sulfate	10	
Zinc	25	
Ammonium	5	

For use in ISO Class  
4/5/6/7/8, GMP Grade  
A/B/C/D  
SMOOTH FINISH

#### Ordering Information

Size	Code
XS	CLN3231XS
SM	CLN3231SM
MD	CLN3231MD
LG	CLN3231LG
XL	CLN3231XL





# PUREZERO\*

## Cleanroom Nitrile Gloves

### STERILE

### HALYARD\* PUREZERO\* HG3 LIGHT BLUE STERILE NITRILE GLOVES

Recommended for use in ISO Class 4/5 and GMP Grade A/B + aseptic. **PUREZERO\*** HG3 Light Blue Sterile Nitrile Cleanroom Gloves have a hand specific shape, 4-mil fingertip thickness, 12 inches (305mm) long with a smooth finish, and a beaded cuff to aid in donning and help prevent roll down.



#### Physical Properties

AQL	1
Sterile	✓
Hand Specific Pairs	✓
Smooth Outer Glove Finish	✓
Textured Fingertips and palms	✓
Accelerator-Free	✓
Latex-Free	✓
Powder-Free	✓
Silicone-Free	✓
Tensile Strength <sup>2</sup>	20 MPa (Target)
Ultimate Elongation <sup>2</sup>	600%
Sterility Assurance Level (SAL)	10 <sup>-6</sup>
Shelf Life	5 Years

#### Cleanliness Properties

Max Particle Count	≥0.5µm / cm <sup>2</sup>	<1200	IEST RP-CC005
Max Endotoxin Level		<20 EU	
Ionic Content (Extractable ions)	Max Level (µg/g)		IEST RP-CC005
Calcium		50	
Chloride		35	
Magnesium		5	
Nitrate		20	
Potassium		5	
Sodium		10	
Sulfate		10	
Zinc		25	
Ammonium		5	

For use in ISO Class 4/5,  
GMP Grade A/B + aseptic  
SMOOTH FINISH SAL 10<sup>-6</sup>

#### Ordering Information

Size	Code
6.0	CLN923260
6.5	CLN923265
7.0	CLN923270
7.5	CLN923275
8.0	CLN923280
8.5	CLN923285
9.0	CLN923290
10.0	CLN923210

### HALYARD\* PUREZERO\* HG3 WHITE STERILE NITRILE GLOVES

Recommended for use in ISO Class 4/5 and GMP Grade A/B + aseptic. **PUREZERO\*** HG3 White Sterile Nitrile Cleanroom Gloves have a hand specific shape, 6-mil fingertip thickness, 12 inches (305mm) long with a smooth finish, and beaded cuff to aid in donning and help prevent roll down.



#### Physical Properties

AQL	1
Sterile	✓
Hand Specific Pairs	✓
Smooth Outer Glove Finish	✓
Textured Fingertips and palms	✓
Accelerator-Free	✓
Latex-Free	✓
Powder-Free	✓
Silicone-Free	✓
Tensile Strength <sup>2</sup>	20 MPa (Target)
Ultimate Elongation <sup>2</sup>	600%
Sterility Assurance Level (SAL)	10 <sup>-6</sup>
Shelf Life	5 Years

#### Cleanliness Properties

Max Particle Count	≥0.5µm / cm <sup>2</sup>	<950	IEST RP-CC005
Max Endotoxin Level		<20 EU	
Ionic Content (Extractable ions)	Max Level (µg/g)		IEST RP-CC005
Calcium		50	
Chloride		35	
Magnesium		5	
Nitrate		20	
Potassium		5	
Sodium		10	
Sulfate		10	
Zinc		25	
Ammonium		5	

For use in ISO Class 4/5,  
GMP Grade A/B + aseptic  
SMOOTH FINISH SAL 10<sup>-6</sup>

#### Ordering Information

Size	Code
6.0	CLN323260
6.5	CLN323265
7.0	CLN323270
7.5	CLN323275
8.0	CLN323280
8.5	CLN323285
9.0	CLN323290
10.0	CLN323210

# PUREZERO\*

## Non-Sterile Cleanroom Gloves

### ADDED PROTECTION FROM THE RISK OF CHEMICAL EXPOSURE

It's critical to protect staff from exposure to potentially hazardous chemicals and chemotherapy drugs. In addition to providing a barrier to chemical splash, microorganisms and viruses, **PUREZERO\*** Cleanroom Gloves are **now tested against 29 chemicals and 14 chemotherapy drugs.**

### CHEMOTHERAPY DRUG RESISTANCE GUIDE<sup>4</sup>

Chemotherapy Agent (Concentration in ppm)	HALYARD* <b>PUREZERO*</b> HG3 White SGX* Nitrile Gloves		HALYARD* <b>PUREZERO*</b> HG3 White Nitrile Gloves		HALYARD* <b>PUREZERO*</b> HG3 Light Blue Nitrile Gloves	
	Minimum Break-through Time (minutes)	Permeation Rate ( $\mu\text{g}/\text{cm}^2/\text{min}$ )	Minimum Break-through Time (minutes)	Permeation Rate ( $\mu\text{g}/\text{cm}^2/\text{min}$ )	Minimum Break-through Time (minutes)	Permeation Rate ( $\mu\text{g}/\text{cm}^2/\text{min}$ )
Carmustine (BCNU) (3,300)	18.1	0.09	16.4	0.5	24.2	0.6
Cisplatin (1,000)	>240	N/A	>240	N/A	>240	N/A
Cyclophosphamide (20,000)	>240	N/A	>240	N/A	>240	N/A
Dacarbazine (10,000)	>240	N/A	>240	N/A	>240	N/A
Doxorubicin HCL (2,000)	>240	N/A	>240	N/A	>240	N/A
Etoposide (20,000)	>240	N/A	>240	N/A	>240	N/A
Fluorouracil (50,000)	>240	N/A	>240	N/A	>240	N/A
Ifosfamide (50,000)	>240	N/A	>240	N/A	>240	N/A
Methotrexate (25,000)	>240	N/A	>240	N/A	>240	N/A
Mitomycin C (500)	>240	N/A	>240	N/A	>240	N/A
Mitoxantrone (2,000)	>240	N/A	>240	N/A	>240	N/A
Paclitaxel (6,000)	>240	N/A	>240	N/A	>240	N/A
Thiotepa (10,000)	89.3	0.01	88.8	0.1	48.2	0.4
Vincristine (1,000)	>240	N/A	>240	N/A	>240	N/A

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 $\mu\text{g}/\text{cm}^2/\text{min}$ ) 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.

### 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 ( $\mu\text{g}/\text{cm}^2/\text{min}$ ).



**CHEMICAL RESISTANCE GUIDE<sup>5</sup>**

Chemical (Concentration %)	HALYARD* PUREZERO* HG3 White SGX* Nitrile Gloves		HALYARD* PUREZERO HG3 White Nitrile Gloves		HALYARD* PUREZERO HG3 Light Blue Nitrile Gloves	
	Minimum Break-through Time (minutes)	Permeation Rate (µg/cm <sup>2</sup> /min)	Minimum Break-through Time (minutes)	Permeation Rate (µg/cm <sup>2</sup> /min)	Minimum Break-through Time (minutes)	Permeation Rate (µg/cm <sup>2</sup> /min)
1-Butanol (99)	>480	0.5	42.5	1.80E+01	26.4	2.40E+01
Acrylamide (40)	>480	0.03	>480	0.1	>480	0.2
Chloroform (70)	0	—	0	—	0	—
Citric Acid (70)	>480	<1.0	>480	<1.0	>480	<1.0
Citric Acid Monohydrate (30)	>480	N/A	>480	N/A	>480	N/A
Cyclohexane (99.7)	262	1.8	50.9	—	32.5	3.60E+01
Dimethylformamide (99)	0	—	0	—	0	—
Dimethyl Sulfoxide (99)	10.1	10.3	10	—	5	—
Ethanol (70)	37.6	7.6	42.2	12.5	30.6	7.6
Ethyl Alcohol (99)	18.9	6.60E+01	27.7	4.80E+01	10.4	5.50E+01
Ethidium Bromide (1)	>480	N/A	>480	N/A	>480	N/A
Formaldehyde (37)	>480	N/A	>480	5.50E-03	>480	1.50E-02
Glutaraldehyde (50)	>480	N/A	>480	N/A	>480	N/A
Hydrazine Monohydrate (55)	>480	N/A	>480	0.1	429.4	2.6
Hydrochloric Acid (30)	>480	N/A	>480	N/A	>480	N/A
Hydrogen Peroxide (30)	35.5	0.7	>480	0.7	43	1.4
Isopropyl Alcohol (70)	197.3	1.2	119.5	3.1	71.8	2.2
Isopropyl Alcohol (99)	75.4	4.1	72.1	5.4	38.6	7.1
Klercide 70/30 IPA (N/A)	179.6	3.9	91.8	4.6	47.5	5.4
Klercide Neutral Detergent (N/A)	>480	N/A	>480	N/A	>480	N/A
Klercide Sporicidal Active Chlorine (N/A)	>480	N/A	>480	N/A	>480	N/A
Methanol (99)	13.5	55.2	10.5	—	10.4	—
Nitric Acid (65)	31.7	4.40E+04	25	1.70E+04	10.1	3.70E+05
Peracetic Acid (5)	>480	N/A	>480	N/A	>480	N/A
Phosphoric Acid (70)	>480	<1.0	>480	<1.0	>480	<1.0
Sodium Hydroxide (50)	>480	N/A	>480	N/A	>480	N/A
Sodium Hypochlorite (10-13%)	>480	N/A	>480	N/A	>480	N/A
Spor-Klenz (N/A)	>480	N/A	>480	N/A	>480	N/A
Sulfuric Acid (50)	>480	N/A	>480	N/A	>480	N/A

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).
N/A	The chemical did not reach the minimum permeation rate (1 µg/cm <sup>2</sup> /min) as defined within EN 16523-1. There is a possibility for trace amounts of the chemical to permeate through the glove.
—	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.

# PUREZERO\*

## Sterile Cleanroom Gloves

### ADDED PROTECTION FROM THE RISK OF CHEMICAL EXPOSURE

It's critical to protect staff from exposure to potentially hazardous chemicals and chemotherapy drugs. In addition to providing a barrier to chemical splash, microorganisms and viruses, **PUREZERO\*** Cleanroom Gloves are **now tested against 29 chemicals and 14 chemotherapy drugs.**

### CHEMOTHERAPY DRUG RESISTANCE GUIDE<sup>4</sup>

Chemotherapy Agent (Concentration in ppm)	HALYARD* PUREZERO* HG3 Light Blue Sterile Nitrile Gloves		HALYARD* PUREZERO* HG3 White Sterile Nitrile Gloves	
	Minimum Breakthrough Time (minutes)	Permeation Rate ( $\mu\text{g}/\text{cm}^2/\text{min}$ )	Minimum Breakthrough Time (minutes)	Permeation Rate ( $\mu\text{g}/\text{cm}^2/\text{min}$ )
Carmustine (BCNU) 3.3	87.9	0.04	99	0.02
Cisplatin 1.0	>240	N/A	>240	N/A
Cyclophosphamide 20.0	>240	N/A	>240	N/A
Dacarbazine 10.0	>240	N/A	>240	N/A
Doxorubicin HCL 2.0	>240	N/A	>240	N/A
Etoposide 20.0	>240	N/A	>240	N/A
Fluorouracil 50.0	>240	N/A	>240	N/A
Ifosfamide 50.0	>240	N/A	>240	N/A
Methotrexate 25.0	>240	N/A	>240	N/A
Mitomycin C 0.5	>240	N/A	>240	N/A
Mitoxantrone 2.0	>240	N/A	>240	N/A
Paclitaxel 6.0	>240	N/A	>240	N/A
Thiotepa 10.0	109.1	0.02	179.8	0.03
Vincristine 1.0	>240	N/A	>240	N/A

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 to 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 $\mu\text{g}/\text{cm}^2/\text{min}$ ) 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.

### 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 ( $\mu\text{g}/\text{cm}^2/\text{min}$ ).

**CHEMICAL RESISTANCE GUIDE<sup>5</sup>**


Chemical (Concentration %)	HALYARD* PUREZERO* HG3 Light Blue Sterile Nitrile Gloves		HALYARD* PUREZERO* HG3 White Sterile Nitrile Gloves	
	Minimum Breakthrough Time (minutes)	Permeation Rate (µg/cm <sup>2</sup> /min)	Minimum Breakthrough Time (minutes)	Permeation Rate (µg/cm <sup>2</sup> /min)
1-Butanol (99)	192.1	1.2	179	3.2
Acrylamide (40)	>480	0.07	>480	0.01
Chloroform (70)	0	–	0	–
Citric Acid (70)	>480	<1.0	>480	<1.0
Citric Acid Monohydrate (30)	>480	N/A	>480	N/A
Cyclohexane (99.7)	52.5	9.6	>480	0.8
Dimethylformamide (99)	0	–	0	–
Dimethyl Sulfoxide (99)	5.5	–	10.6	–
Ethanol (70)	27.6	16	43.8	11.6
Ethyl Alcohol (99)	18.7	5.20E+01	32.1	73.8
Ethidium Bromide (1)	>480	N/A	>480	N/A
Formaldehyde (37)	>480	N/A	>480	N/A
Glutaraldehyde (50)	>480	N/A	>480	N/A
Hydrazine Monohydrate (55)	>480	0.08	>480	N/A
Hydrochloric Acid (30)	>480	N/A	>480	N/A
Hydrogen Peroxide (30)	36	1.4	78.7	0.8
Isopropyl Alcohol (70)	194	1.7	185	2.6
Isopropyl Alcohol (99)	361	1.2	280.2	1.4
Klercide 70/30 IPA (N/A)	141	2	163.7	2.2
Klercide Neutral Detergent (N/A)	>480	N/A	>480	N/A
Klercide Sporicidal Active Chlorine (N/A)	>480	N/A	>480	N/A
Methanol (99)	1.2	57.6	9	50.7
Nitric Acid (65)	15	8.90E+04	25.4	3.60E+04
Peracetic Acid (5)	>480	N/A	>480	N/A
Phosphoric Acid (70)	>480	<1.0	>480	<1.0
Sodium Hydroxide (50)	>480	N/A	>480	N/A
Sodium Hypochlorite (10-13%)	>480	N/A	>480	N/A
Spor-Klenz (N/A)	>480	0.0043	>480	N/A
Sulfuric Acid (50)	>480	N/A	>480	N/A

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).
N/A	The chemical did not reach the minimum permeation rate (1 µg/cm <sup>2</sup> /min) as defined within EN 16523-1. There is a possibility for trace amounts of the chemical to permeate through the glove.
–	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.

# PRODUCT SELECTION GUIDE

	Description	Designed for	Max Particle Count	ISO Class	Finish	Double Donning	Size Range	Fingertip Thickness	Case Count
NON-STERILE	HALYARD® PUREZERO® HG3 White Nitrile Gloves	semiconductor pharmaceutical medical device manufacturing	<950	ISO Class 4/5/6/7/8, GMP Grade A/B/C/D cleanrooms or cleanzones	Tacky	Recommended for outer glove	XS-XL	.16mm (6 mil)	1000/cs
	HALYARD® PUREZERO® HG3 Light Blue Nitrile Gloves	semiconductor pharmaceutical medical device manufacturing	<1200	ISO Class 4/5/6/7/8, GMP Grade A/B/C/D cleanrooms or cleanzones	Tacky	Recommended for outer glove	XS-XL	.10mm (4 mil)	1500/cs
	HALYARD® PUREZERO® HG3 SGX White Nitrile Gloves	semiconductor pharmaceutical medical device manufacturing	<950	ISO Class 4/5/6/7/8, GMP Grade A/B/C/D cleanrooms or cleanzones	Smooth (SGX)	outer or under	XS-XL	.16mm (6 mil)	1000/cs
STERILE	HALYARD® PUREZERO® HG3 Light Blue Sterile Nitrile Gloves	pharmaceutical biotechnology sterile compounding aseptic processing	<1200	ISO Class 4/5, GMP Grade A/B + aseptic cleanrooms	Smooth	outer or under	6.0 6.5 7.0 7.5 8.0 8.5 9.0 10.0	.10mm (4 mil)	300 pairs/cs
	HALYARD® PUREZERO® HG3 White Sterile Nitrile Gloves	pharmaceutical biotechnology sterile compounding aseptic processing	<950	ISO Class 4/5, GMP Grade A/B + aseptic cleanrooms	Smooth	outer or under	6.0 6.5 7.0 7.5 8.0 8.5 9.0 10.0	.16mm (6 mil)	200 pairs/cs
Applies to all PUREZERO® Gloves:		Textured Fingertips	Accelerator-Free <sup>1</sup>	AQL 1	CE 2797 (PPE Cat. III)	ISO 374-5:2016 VIRUS	ISO 374-1:2016/Type C K-Low Chemical		

1 Not formulated with these commonly used vulcanizing chemicals: Sulfur, Thiurams, Thioxoles, Guanidines and Carbamates.

2 Tested per ASTM D6319, EN 455-2

3 Tested per ASTM D6319, EN 455-2

4 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.

5 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.

For more information or samples, contact your distributor or contact us at: [info@hyh.com](mailto:info@hyh.com)