

# Readigloves® Nytraguard® ChemoPure®

## Chemically Resistant & Pure Nitrile Gloves - Sulphur Free

Nytraguard® ChemoPure® is a completely unique glove. Its name is derived from the combination of chemical resistance and high material purity, delivered in one groundbreaking glove. ChemoPure® is the first in a new generation of high specification, versatile medical gloves that provide protection in both a clinical and laboratory environment. Free from latex, sulphur and accelerators ChemoPure® is the pure solution that guards the user against the main causes of contact dermatitis and natural rubber latex allergies. This glove is probably the best medical glove on the market!

- **Super pure material** - ultra low dermatitis risk and zero natural rubber latex allergy risk
- **High chemotherapy drug resistance** - class leading protection for safety in use. Tested to ASTM D6978-05
- **High chemical resistance** - protection against a wide range of hospital and laboratory chemicals
- **High puncture resistance** - certified to ASTM F1342
- **Suitable for laboratory and PPE use** - independently certified design and production
- **Lightweight construction** - for high sensitivity
- **High stretch** - for a high degree of comfort and fit
- **Very high durability** - for tear and puncture resistance
- **Ultimate biological resistance** - independently certified to ASTM D1671 for ultimate resistance to viral penetration
- **Medium grip** - suitable for multiple tasks – fingertip textured
- **Easy donning** - for speed and convenience
- **Powder free** - for hygiene and convenience
- **Latex free** - no risk of natural rubber latex allergy
- **Food contact approved** - safe for use with all food types
- **Colour** - dark purple

## The Most Skin Friendly Glove on the Market

It is well known that large numbers of clinical staff suffer from an adverse reaction to medical gloves. This is caused by compounds in the glove which react with the skin. Because clinical staff repeatedly wash their hands and/or apply alcohol gel, the natural oils in the skin are removed leading to dry, cracked and sore hands. This makes them much more sensitive to irritant compounds in the glove.

### ChemoPure® Provides the Answer

- First, ChemoPure® is latex free, so there is no risk of a Type I natural rubber latex allergic reaction
- Second, ChemoPure® is free of chemical accelerators. Skin is very sensitive to chemical accelerators and these can lead to Type IV contact dermatitis. The risk of dermatitis is as low as it is possible to be with ChemoPure®
- Third, ChemoPure® uses a world first, unique formula which is completely sulphur free to further improve its skin friendly performance

So if your staff suffer from skin irritation - supply them with ChemoPure®. Happier staff, reduced absence from damaged hands and no personal injury claims makes everyone happy - and for a minimal increase in cost.

The table on the right shows the test results for all common chemical accelerators. It can be seen that these accelerators are not present or they are so low that they are undetectable.

No	Chemical Test	Results
1	Butylated hydroxyanisole (BHA)	Non detected
2	Butylated hydroxytoluene (BHT)	Non detected
3	Diphenyl guanidine (DPG)	Non detected
4	Diphenyl thiourea (DPT)	Non detected
5	Mercaptobenzothiazole (MBT)	Non detected
6	Tetramethylthiuram disulphide (TMTD)	Non detected
7	Zinc dibutyldithiocarbamate (ZDBC)	Non detected
8	Zinc diethyldithiocarbamate (ZDEC)	Non detected
9	Zinc dimethyldithiocarbamate (ZDMC)	Non detected
10	Zinc mercaptobenzimidazole (ZMBI)	Non detected
11	Zinc mercaptobenzothiazole (ZMBT)	Non detected
12	Zinc pentamethylenedithiocarbamate (ZPMC)	Non detected

**Notes:** Five grams of the sample was extracted in 100ml boiling deionized water for one hour. The water extract was then liquid-liquid extracted using methylene chloride. The extracted chemicals were individually determined via HPLC by comparing them to authentic reference material. The limits of detection are 2µg/ml for ZDEC and 10µg/ml for TMTD, MBT, ZDMC, ZPMC, ZDBC, ZMBI, ZMBT, BHT, BHA, DPG and DPT. Chemical determined as non-detected is either not present or the concentration is below the detectable limit.



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## The Best Glove for Chemotherapy Drug Resistance

It should be noted that drugs (and other chemicals) can permeate (go right through) an otherwise waterproof glove. This can lull clinicians into a false sense of security. In particular, most medical gloves have a very low resistance to the accidental spillage of cytotoxic chemotherapy drugs. This could pose a significant risk to clinical staff. ChemoPure® is different; its unique sulphur free, accelerator free formulation gives it remarkable resistance to the most aggressive chemotherapy drugs (including Carmustine and ThioTEPA).

ChemoPure® is permeation tested to the most onerous global standard - ASTM D 6978-05. The outstanding results are shown below:

## Excellent chemical resistance - certified for use in laboratories and resistant to common hospital chemicals

ChemoPure® is independently certified for its protective performance by a UK test laboratory. In addition, the manufacturing process is also independently supervised and certified to ensure consistency of product quality.

These two key factors are required by law to claim compliance with the Personal Protective Equipment Directive 89/686/EEC, Complex design PPE for high risk use.

The table below shows the resistance of ChemoPure® to chemical permeation, tested to EN 374-1 using the protocol in EN 374-3 (excluding clause 5.3.2). Note that level 6 is the maximum achievable under the test protocol (protection for longer than 480 minutes) and 1 is the least (protection for longer than 10 minutes). It can be seen that the performance is excellent.

### ASTM D6978-05 Test Results

Test Chemotherapy Drug	Average Breakthrough Detection Time (mins)
<b>Carboplatin</b> 10.0mg/ml	65 Mins
<b>Carmustine (BCNU)</b> 3.3mg/ml	16.70 Mins
<b>Cisplatin</b> 1.0mg/ml	240 Mins
<b>Cyclophosphamide (Cytosan)</b> 20.0mg/ml	240 Mins
<b>Dacarbazine (DTIC)</b> 10.0mg/ml	240 Mins
<b>Daunorubicin Hydrochloride</b> 5.0mg/ml	240 Mins
<b>Docetaxel</b> 10.0mg/ml	240 Mins
<b>Doxorubicin Hydrochloride</b> 2.0mg/ml	240 Mins
<b>Epirubicin Hydrochloride</b> 2.0mg/ml	240 Mins
<b>Etoposide (Tospor)</b> 20.0mg/ml	240 Mins
<b>Fluorouracil</b> 50.0mg/ml	240 Mins
<b>Gemcitabine</b> 38.0mg/ml	240 Mins
<b>Irinotecan Hydrochloride</b> 20.0mg/ml	240 Mins
<b>Ifosfamide</b> 50.0mg/ml	240 Mins
<b>Mitomycin</b> 0.5mg/ml	240 Mins
<b>Paclitaxel (Taxol)</b> 6.0mg/ml	240 Mins
<b>ThioTEPA</b> 10.0mg/ml	72.36 Mins
<b>Vincristine Sulphate</b> 1.0mg/ml	240 Mins

Chemical	Protection Level
40% Sodium hydroxide	6
5% Ethidium bromide	6
37% Formaldehyde	6
0.1% Phenol	6
10-13% Sodium hypochlorite	6
50% Sulphuric acid	6
1.5% Methanol in water	6
50% Gluteraldehyde	6
70% Isopropanol	1

**Warning:** Please note breakthrough time. In the event of accidental spillage of Carmustine and ThioTEPA, we recommend glove removal within 15 mins.



Technical Performance	
<b>Classification:</b>	Single use medical examination and laboratory glove, Non sterile Class I Medical Device
<b>Materials:</b>	Acrylonitrile butadiene; Accelerator and sulphur free; Does not contain latex; Does not contain styrene; Powder free
<b>Design:</b>	Ambidextrous, finger textured outer surface, beaded cuff
<b>Inspection Criteria:</b>	AQL 1.5
<b>Shelf Life:</b>	3 years
<b>Regulatory Compliance:</b>	<p><b>Medical Devices Directive 93/42/EEC</b></p> <ul style="list-style-type: none"> <li>- BS EN 455, Parts 1, 2, 3 and 4. Medical gloves for single use                             <ul style="list-style-type: none"> <li>- Minimum force at break - 6 Newtons</li> </ul> </li> <li>- EN ISO 10993, Biological evaluation of medical devices</li> </ul> <p><b>Personal Protective Equipment Directive 89/686/EEC</b></p> <ul style="list-style-type: none"> <li>- Complex design for high risk use</li> <li>- BS EN 420. Protective gloves – general requirements and test methods                             <ul style="list-style-type: none"> <li>- Gloves are 240mm in length for medical applications</li> <li>- Dexterity level 5 (high dexterity)</li> </ul> </li> <li>- BS EN 374 parts 1, 2 and 3. Protective gloves against chemicals and micro organisms                             <ul style="list-style-type: none"> <li>- Micro organism resistant</li> <li>- High level of chemical protection against specified chemicals</li> </ul> </li> </ul> <p><b>Specialised test compliance</b></p> <ul style="list-style-type: none"> <li>- ASTM D 6978-05. Resistance of medical gloves to permeation by chemotherapy drugs</li> <li>- ASTM F 1671-07. Resistance of materials used in protective clothing to penetration by blood-borne pathogens</li> <li>- ASTM F 1342. Standard test method for protective clothing – material resistance to puncture</li> </ul> <p><b>Regulation (EC) No 1935/2004 and Regulation (EU) No 10/2011. Plastic materials and articles intended to come into contact with food</b></p> <ul style="list-style-type: none"> <li>- BS EN 1186 materials and articles in contact with foodstuffs - plastics</li> <li>- Suitable for all food types</li> </ul>
<b>Applications:</b>	<p><b>Specialist applications</b> Hospital clinical procedures, including administration of chemotherapy drugs or handling chemicals, contact with high risk patients (viral infection risk), laboratory use (see chemical resistance chart)</p> <p><b>General applications where low dermatitis glove is required</b> Community nursing, GP surgeries, dental surgeries, emergency services, nursing homes, care homes, domiciliary care, general use, cleaning</p>

## Outstanding Viral Penetration Resistance

In the same way that many people don't realise that chemicals can literally permeate right through a glove into the body (even though the glove is intact), a similar situation can occur with microbiological organisms.

Readigloves® nitrile and latex gloves offer exceptionally good microbiological resistance, but vinyl gloves offer a much lower resistance. The tests required in BS EN 455 and BS EN 374 are general in nature and require only water and air tightness. They do not specifically test the performance of the gloves against bacteria, fungi and viruses.

Viruses (smaller than bacteria and fungi) could have devastating consequences if they come into contact with a healthcare worker - particularly hepatitis B and C and the HIV virus.

We have therefore had ChemoPure® tested to ASTM D 1671: resistance of materials used in protective clothing to penetration by blood-borne pathogens using Phi-X174 bacteriophage penetration as a test system (viral penetration).

The unique formulation of ChemoPure® ensured it passed this onerous test with flying colours.

ChemoPure® therefore has outstanding viral resistance and because bacteria and fungi are larger than viruses, outstanding resistance against these organisms too.

Product Code	Size	Gloves per Carton	Unit of Sale
9540	Extra Small	100	10 Cartons
9541	Small	100	10 Cartons
9542	Medium	100	10 Cartons
9543	Large	100	10 Cartons
9544	Extra Large	100	10 Cartons