Ansell

PI-KARE™

Skin-friendly PI Technology

Get Started

PI-KARE™
Skin-friendly PI Technology

know the **DIFFERENCE**
www.**ansellnonlatex**.com

PUSHING THE BOUNDARIES OF **PI PERFORMANCE**

360°
PI PERFORMANCE ADVANTAGE

SKIN-FRIENDLIER

Improved PI safety profile further minimises chemical Type IV allergies & sensitivities

IMPROVED DURABILITY

Stronger, more durable gloves with high PI sensitivity

HIGHER COMFORT

Ergonomic performance to reduce muscle strain and stress on hands

Ansell

PI-KARE™

Skin-friendly PI Technology

know the **DIFFERENCE**

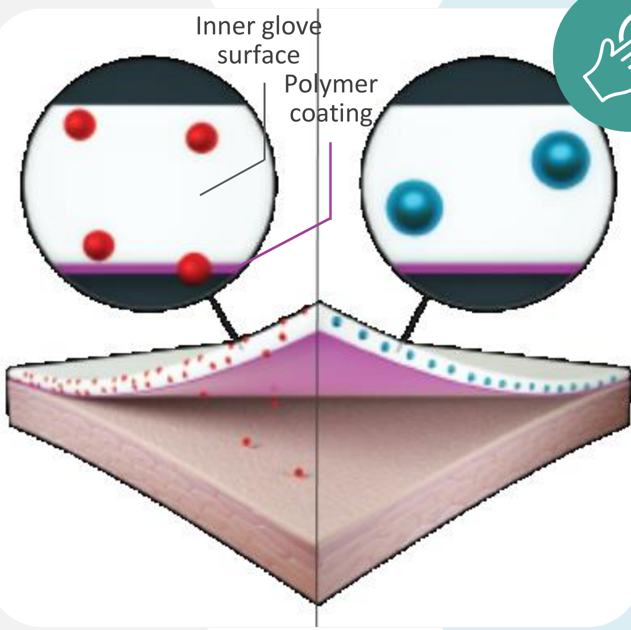
www.**ansellnonlatex**.com

SKIN-FRIENDLIER POLYISOPRENE

Traditional PI products

Standard **chemical accelerators** are used

- may **not remain within** the glove film
- may **contact** the skin
- may result in Type IV chemical **allergies** and **sensitivities**



PI products with PI-KARE Technology

Only **biologically-safer accelerators** are used

- ✓ with **better tolerance** to skin
- ✓ either **completely consumed** during manufacturing
- ✓ or **remain within** the glove film

Ansell

PI-KARE™
Skin-friendly PI Technology

know the **DIFFERENCE**
www.**ansellnonlatex**.com

SKIN-FRIENDLIER POLYISOPRENE

Elimination

of all chemical accelerators known to cause Type IV allergies or sensitivities

Only biologically -safer

chemical accelerators with *a proven lower allergenic profile*

Chemical Accelerators	**Old** Ansell PI	**PI-KARE** Technology
ZDEC (Zinc Diethyldithiocarbamate)	YES	ELIMINATED
ZDBC (Zinc Dibutyldithiocarbamate)	YES	ELIMINATED
SCBC (Sodium Dibutyldithiocarbamate)	YES	ELIMINATED
ZMBT (Zinc Mercaptobenzothiazole)	YES	ELIMINATED
DPTU (Diphenylthiourea)	YES	ELIMINATED
DPG (1,3-Diphenylguanidine)	NO	NO
DXIP (Xanthates)	DISSOLVED	DISSOLVED
ZDiNC (Zinc Dialkyldithiocarbamate)	NO	YES

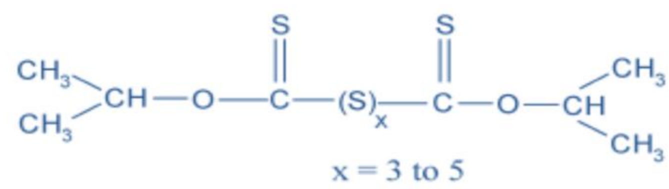
Ansell

The proof!
Strong clinical claims

BIOLOGICALLY-SAFER CHEMICAL ACCELERATORS

DXIP (Xanthates)

- ✓ Completely consumed during manufacturing
  - no residue in final glove product
  - contains no N (nitrogen), and hence cannot form nitrosamines[1]

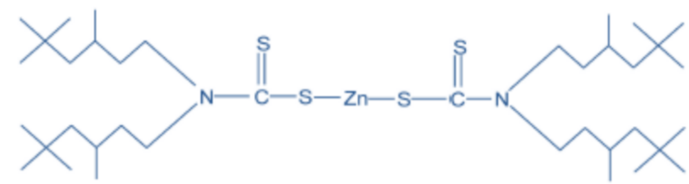


DXIP – structural formula

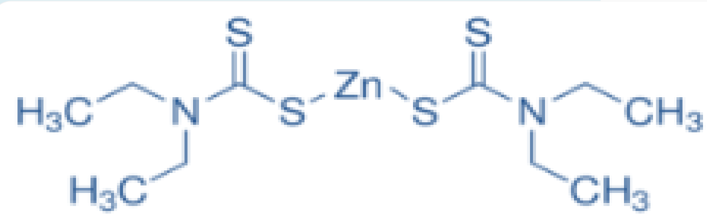
ZDiNC (Zinc Dialkyldithiocarbamate)

A **safer** carbamate?

- ✓ Long side chains in the structural formula indicates less potential[2] for
  - sensitisation
  - migration through glove film
- ✓ Validated by the German BfR (Federal Institute for Risk Assessment)



ZDiNC - structural formula



ZDEC - structural formula

[1] Nitrosamines are carcinogenic and regulated in baby teats, toys, etc.

[2] Wim H De Jong, François M M Van Och, Constance F Den Hartog Jager, Sander W S Piekstra, W Slob, Rob J Vandebriel, Henk Van Loveren. Ranking of Allergenic Potency of Rubber Chemicals in a Modified Local Lymph Node Assay. Toxicological Sciences 66, 226-232 (2002)

LOW ALLERGENIC PROFILE

These substances known to **cause Type IV allergies** or sensitivities are **NOT FOUND** in PI products with **PI-KARE Technology**

- **Thiurams**
- **Mercaptobenzothiazole**-mix related compounds
- **Thiourea** related compounds
- Standard or conventional **dithiocarbamates**: ZDEC, ZDBC
- **1,3-diphenylguanidine** (DPG)
- **Cetylpyridinium chloride** (CPC)
- **Casein** and other animal derivatives
- **Phthalates**
- **(p)-phenylenediamines**

PI-KARE™
Skin-friendly PI Technology

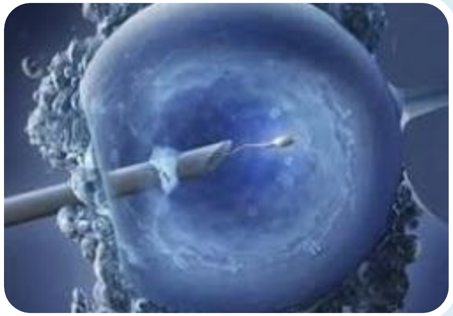
know the **DIFFERENCE**
www.**ansellnonlatex**.com

A **PROVEN** LOW ALLERGENIC PROFILE

Human Repeat Insult Patch Test

- **Dermatitis potential** of PI products with PI-KARE Technology tested
- Involved 200 human subjects
- Conducted by **independent** lab in the U.S.

RESULT: no sensitisation observed



IVF (In Vitro Fertilisation) Test

- Mouse Embryo Assay (MEA) test

RESULT: PASSED

May be safely recommended for IVF usage

Ansell

PI-KARE™
Skin-friendly PI Technology

know the **DIFFERENCE**
www.**ansellnonlatex**.com

MORE DURABLE AND ROBUST POLYISOPRENE

Improved Strength

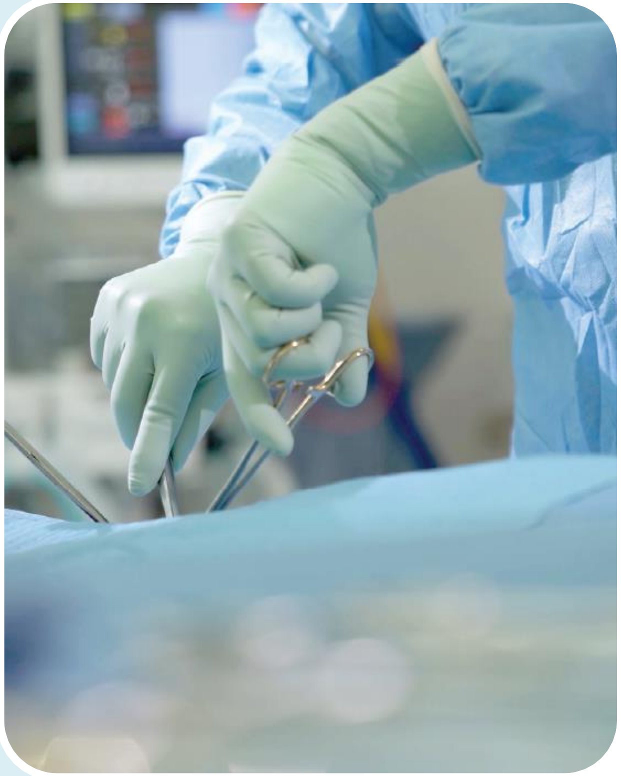
- ✓ force at break (aged) values **up 30%** versus previous PI formulation
- ✓ demonstrates robustness to withstand rigorous procedures

Improved Tear Resistance

- ✓ up to **40% improvement** versus previous PI formulation
- ✓ allows for fast and rigorous donning

Lower Hydration

- ✓ retains the glove shape even after long procedures
- ✓ reduces risk of electrosurgical shock



Ansell

PI-KARE™

Skin-friendly PI Technology

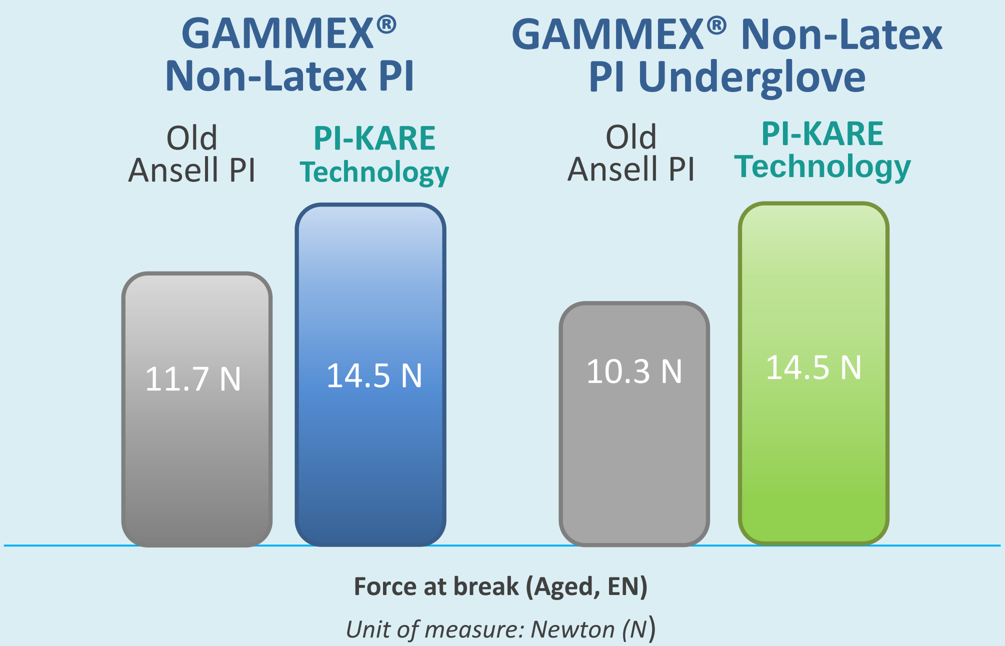
know the **DIFFERENCE**

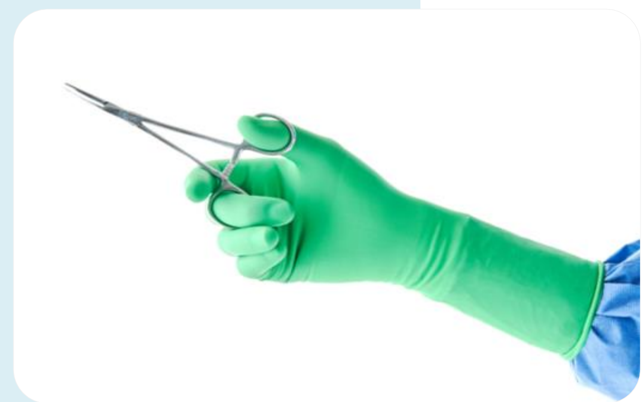
www.**ansellnonlatex**.com

MORE ROBUST POLYISOPRENE

Force at break

Comparison old PI vs PI-KARE





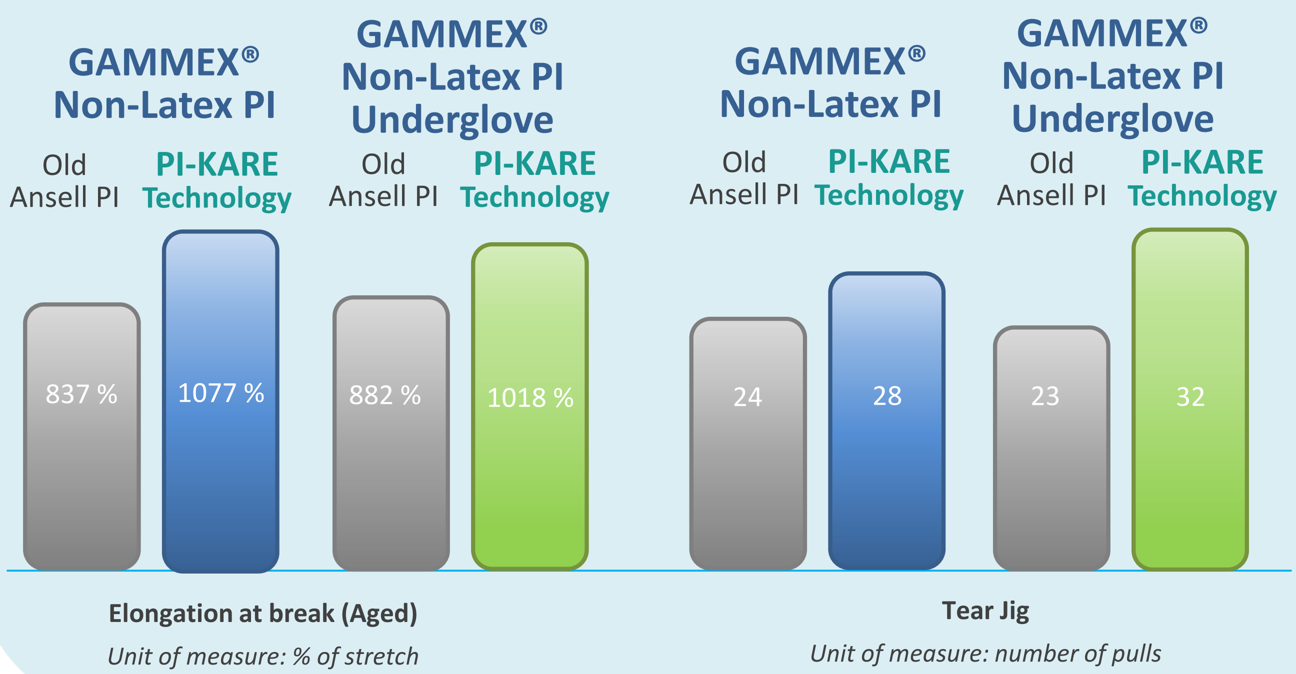
NOTE: These are typical results based on a limited production run and are accurate at the time of publication.

Ansell

MORE DURABLE POLYISOPRENE

Tear Resistance

Comparison old PI vs PI-KARE



NOTE: These are typical results based on a limited production run and are accurate at the time of publication.

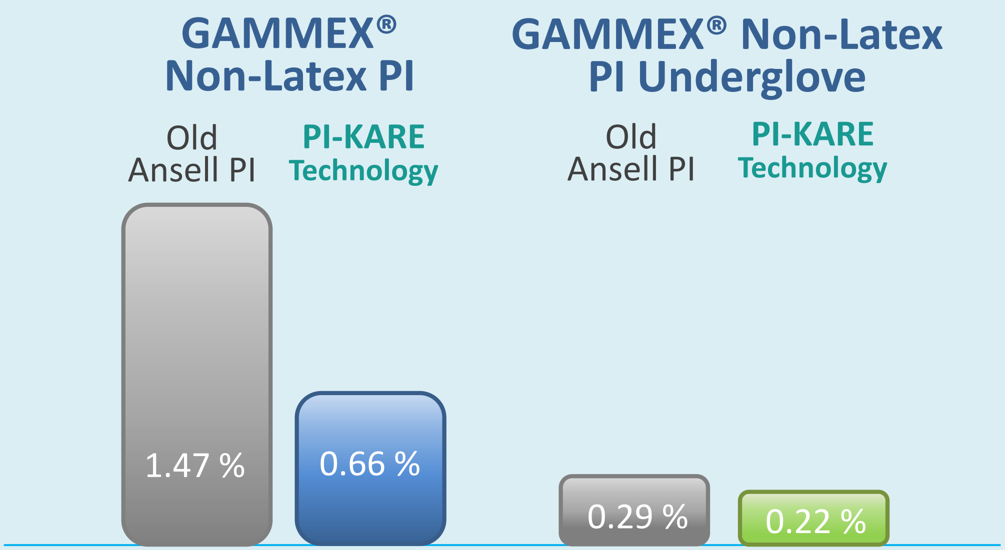
PI-KARE™
Skin-friendly PI Technology

know the **DIFFERENCE**
www.ansellnonlatex.com

MORE DURABLE POLYISOPRENE

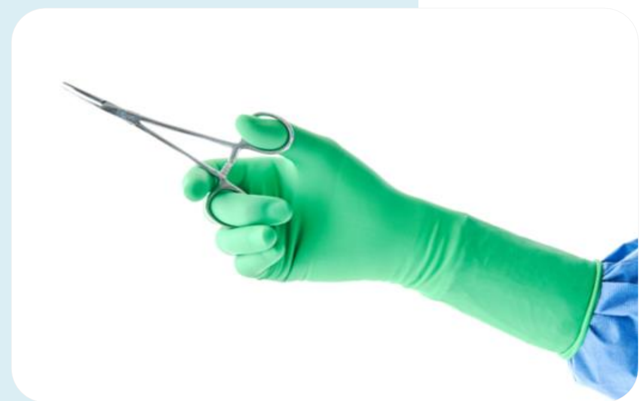
Hydration

Comparison old PI vs PI-KARE



Hydration (usage durability)

Unit of measure: % weight gained



NOTE: These are typical results based on a limited production run and are accurate at the time of publication.

Ansell

PI-KARE™
Skin-friendly PI Technology

know the **DIFFERENCE**
www.**ansellnonlatex**.com

ERGONOMIC **COMFORT AND FIT**

50% Improved modulus

- ✓ softer and 'stretchier' glove
- ✓ higher elasticity
- ✓ up to **200% lower force of resistance** to hand and finger movement than Ansell' standard NRL gloves

Proprietary PI glove formers

- ✓ optimised for comfort
- ✓ helps to minimise everyday muscle strain on joints, ligaments and tendons

Ergonomically certified

UNITED STATES CERTIFIED ERGONOMICS

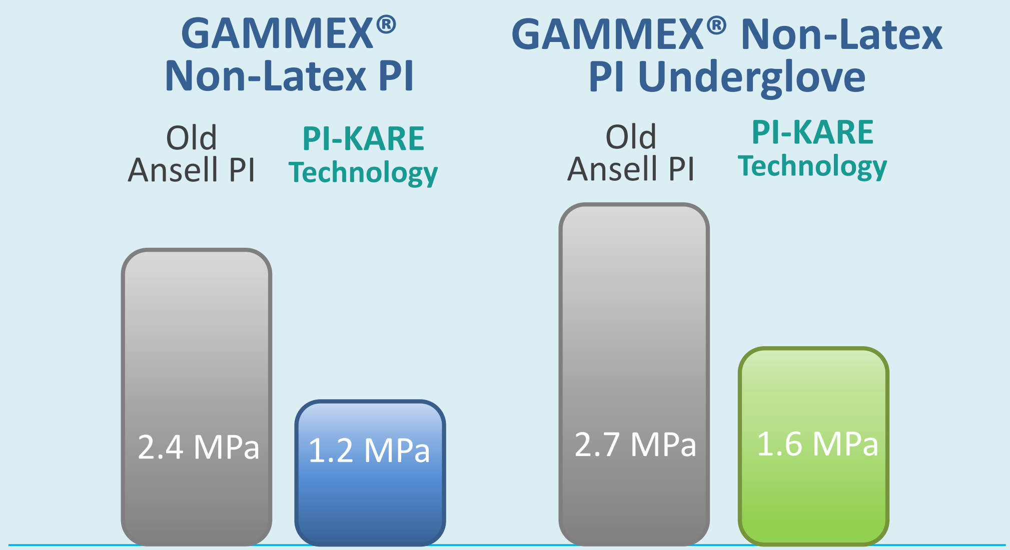
UNITED STATES COMFORT ERGONOMICS

Ansell

MORE DURABLE POLYISOPRENE

Modulus

Comparison old PI vs PI-KARE



Material softness (ASTM Modulus @ 500%)

Unit of measure: Megapascal (MPa)

NOTE: These are typical results based on a limited production run and are accurate at the time of publication.

PI-KARE™

Skin-friendly PI Technology

know the **DIFFERENCE**

www.**ansellnonlatex**.com

THE ONLY PI GLOVE TO BE **ERGONOMICALLY CERTIFIED**

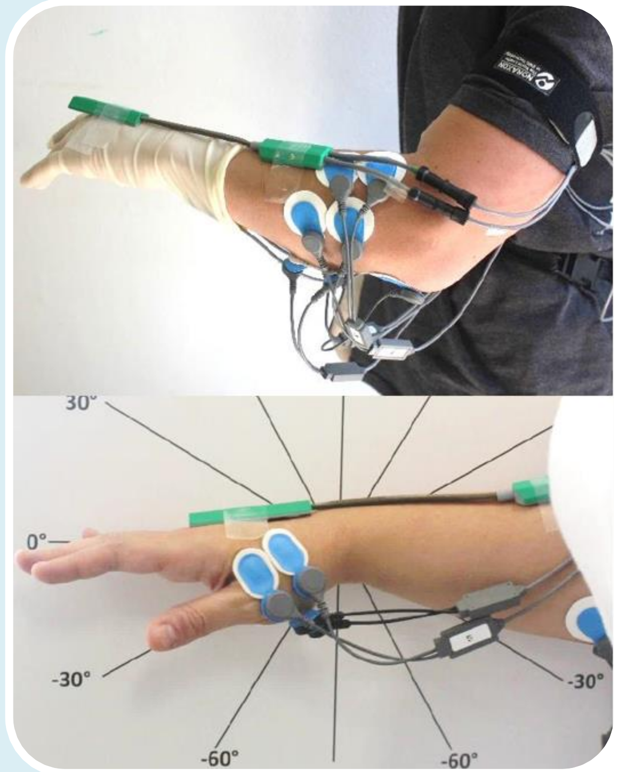
Ergonomically certified

UNITED STATES CERTIFIED ERGONOMICS

UNITED STATES COMFORT ERGONOMICS

- ✓ Tested by independent ergonomic scientists at United States Ergonomics
- ✓ Ansel gloves certified:
  - GAMMEX® Non-Latex PI
  - GAMMEX® Non-Latex PI Micro
  - GAMMEX® Non-Latex PI Textured
  - GAMMEX® Non-Latex PI Underglove
  - GAMMEX® PI Hybrid
  - GAMMEX® Non-Latex Sensitive
  - GAMMEX® Non-Latex Underglove
- ✓ GAMMEX® is the only PI glove on the market to be ergonomically certified

Ergonomic test details and result



Ansell

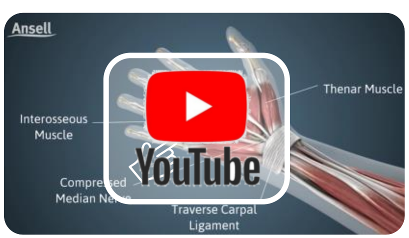
UNITED STATES ERGONOMICS **ERGONOMIC TESTING**

UNITED STATES CERTIFIED ERGONOMICS

Gloves tested

Test scope

Test result



UNITED STATES ERGONOMICS **ERGONOMIC TESTING**

Ansell gloves tested

- polyisoprene gloves
  - GAMMEX® Non-Latex PI
  - GAMMEX® PI Hybrid
- neoprene gloves
  - GAMMEX® Non-Latex Sensitive

This selection of gloves contains the attributes to be representative for the complete Ansell Non-Latex portfolio

UNITED STATES ERGONOMICS **ERGONOMIC TESTING**

Test scope

- ✓ Controlled Laboratory Tests
  objective measures of the ergonomic performances of the gloves

- ✓ Task Simulation Test
  objective measures collected from 12 medical professionals (surgeons, surgical assistants, nurse practitioners)

UNITED STATES ERGONOMICS **ERGONOMIC TESTING**

Controlled Laboratory Tests

1. Open-Close Hand
2. Flex-Extend Hand to 30 Degrees and 60 Degrees
3. Move Hand Towards Ulnar and Radial Deviation
4. Write Signature
5. Manipulate Suture Needle
6. Suture – on silicone suture pad
7. Weight Grip and Release (Dry)
8. Weight Grip and Release (Wet)

PI-KARE™

Skin-friendly PI Technology

know the **DIFFERENCE**

www.ansellnonlatex.com

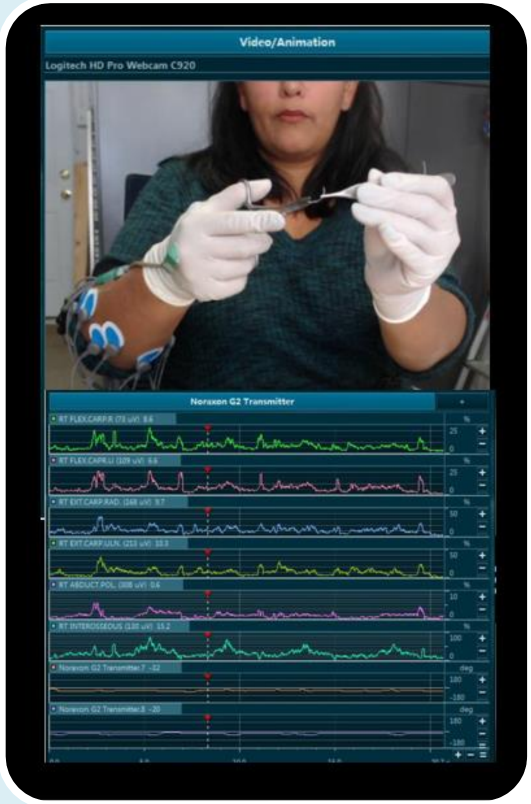
UNITED STATES ERGONOMICS **ERGONOMIC TESTING**

Task Simulation Tests

12 medical professionals performing tasks such as suturing and needling

✓ Objective measuring

- Muscle effort monitoring (electromyography)
- Dynamic wrist postures (electro-goniometry)
- Tactile response testing (aesthesiometry)
- Hand & finger range of motion testing
- Subjective ratings of user comfort, perceived effort, and glove product performance
- Video documentation of testing



Ansell

PI-KARE™
Skin-friendly PI Technology

know the **DIFFERENCE**
www.**ansellnonlatex**.com

U.S. ERGONOMICS CERTIFICATION **RESULTS SUMMARY**

Muscle effort

measured by Maximum Voluntary Contraction

Hand muscle effort reduced by up to

36.5%

compared to bare hands

GAMMEX® is the only PI glove on the market to be ergonomically certified

Ansell

HyFlex® GAMMEX® AlphaTec® MICROFLEX®