Radiation Attenuating Gloves

When it comes to radiation exposure, the surgeon's hands remain the body part having the greatest exposure.

Latex Free and Lead Free Radiation Attenuating Gloves offers an effective, safer and more sustainable option for healthcare professionals.

IneoGuard™ radiation attenuating surgical gloves are developed by IneoTech using a proprietary formulation of polyisoprene and tungsten as the attenuating material. Our gloves are latex free, lead free, MBT free and DPG free, promoting safer skin protection for healthcare professionals.

Synthetic Polyisoprene, Powder Free Radiation Attenuating Surgical Gloves

Gloves are designed with a unique material composition that offers an enhanced flexibility, enabling excellent tactile sensitivity and prolonged wear without hand fatigue.

Key Features and Benefits

- Latex free[1], Lead free[2].
- Soft formulation made of synthetic polyisprene
- Hi-density tungsten composition.
- Enhanced flexibility and comfort for instrument handling.
- Textured finger micro-surface to provide an optimum control.

High Density Attenuation Composition

Designed with a proprietary tungsten composition which is 75% more dense than lead, ineoGuard offers superior attenuation ability than leaded gloves at equivalent thickness.

Lead Free[2], No DPG[3] and No BMT[4]

ineoGuard glove is formulated without DPG and MBT chemical accelerators, promoting skin health and offering a safer option to professionals while reducing lead pollution to the environment.

Product Description

Intended Use	Radiation attenuating surgical gloves to reduce the exposure from harmful scattered ionizing rays on the operator's hand during fluoroscopic procedures. These gloves are not to be used in or next to the primary X-Ray beam.
Material	Soft synthetic polyisoprene containing lead-free radiation attenuating tungsten alloy. Formulated without Diphenylguanidine (DPG) and without Mercaptobenzothiazole (MBT), recently classified as cancer-causing agent in the California Prop-65.
Donning	Powder free, Polymer coated
Colour	Dark grey
Sterilization	Radiation, >= 25kGy
Shelf Life	3 years from the manufacturing date. Store in cool, dry and ozone free place. Keep out of direct sunlight.
Packaging	5 pairs per box
Quality Control	100% of gloves are visually inspected

Physical and Barrier Properties

- Freefrom from hole according to EN455-1: AQL 0.65
- Resistance to permeation by chemicals according to EN374-1 and EN16523: Type B (K, M, P, T)
- Glove sizes compliant with EN 455-2. Minimum length: 285mm
- Physical properties compliant with EN 455-2.
- Absence of residual powder (powder free) according to EN455-3.

1. Not made with natural rubber latex.
2. Not formulated with lead.
3. Not forumlated with Mercaptobenzothiazole (MBT) accelerator, California Prop 65 listed carginogen.
4. Not formulated with DiphenylGuanidine (DPG) accelerator.

Configurations

	Thickness in mm		
	Cuff	**Palm**	**Finger**
Model 1	Min. 0.23	Min. 0.24	Min. 0.27
Model 2	Min. 0.31	Min. 0.32	Min. 0.37

	Thickness in mm			
	60 kVp	**80 kVp**	**100 kVp**	**120 kVp**
Model 1	52%	44%	40%	36%
Model 2	61%	54%	49%	45%

Model 1

Recommended For:

- Cardiac catherization
- Barium X-rays procedures
- Interventional cardiovascular procedures
- e.g. angioplasty, endovascular stenting
- Intraoperative fluoroscopic procedures
- with the use of C-arm/ mini C-arm

Model 2

Recommended For:

- Orthopedic & trauma fluoroscopic-guided procedures e.g. arthroscopy, dynamic hip screw
- Interventional spine procedures
- Intraoperative fluoroscopic procedures
- with the use of C-arm/ mini C-arm

Ordering

Size	Product Codes	
	Model 1	**Model 2**
5.5	INT-IG155	INT-IG255
6	INT-IG160	INT-IG260
6.5	INT-IG165	INT-IG265
7	INT-IG170	INT-IG270
7.5	INT-IG175	INT-IG275
8	INT-IG180	INT-IG280
8.5	INT-IG185	INT-IG285
9	INT-IG190	INT-IG290

Why Choose IneoGuard?

Radiation-attenuating gloves are designed to provide protection from scattered ionizing radiations during fluoroscopy procedures.

This property is achieved by loading a signicant amount of radio-opaque solid particles into the rubber matrix.

However, introducing such large amounts of particles in a rubber produces an increase of rigidity and a decrease of the glove mechanical resistance. Therefore, the design and manufacture of radiationattenuating gloves present a substantial technical challenge.

Not all brands of radiation-attenuating gloves are made and perform equally.

> “Radiation-attenuating gloves are sophisticated materials. They should meet stringent properties, most of them being antagonist.”

Radiation-attenuating gloves from various brands were supplied directly from the market place and analyzed according to the following criteria:

Dexterity

- The glove rigidity was assessed by measuring the force (in Newton) needed to elongate the glove by 100% (at finger area)
- The glove thickness (in µm) was measured in various locations. The thickness gradient (in %) is expressed by the ratio of the thicknesses measured in the Index Finger and in the Cuff.

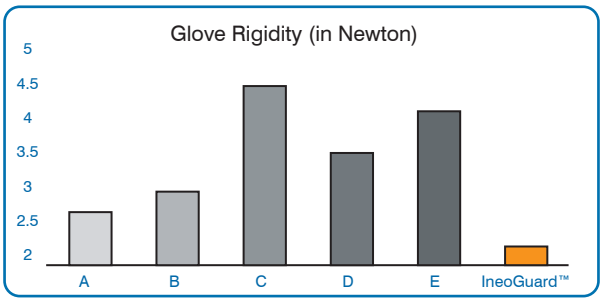
Safe & Responsibly Made

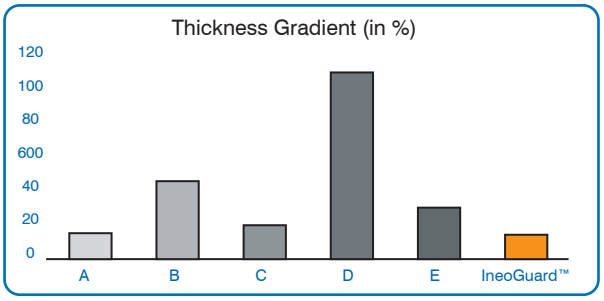
- Most of current radiation-attenuating gloves contain natural rubber, and/or lead, and/or harmful accelerators
- IneoGuard is formulated with an innovative latex-free, lead-free composition that does not contain Diphenyl Guanidine (DPG-free) nor Mercaptobenzothiazole (MBT-free) accelerators.

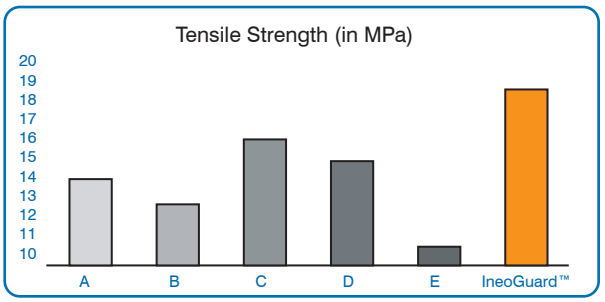
Performance

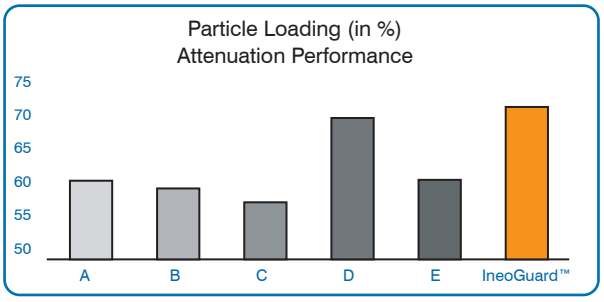
- The radiation-attenuating performance was assessed by measuring the filling percentage (%w/w) of the particles in the glove, by thermogravimetric analysis.
- The physical performance was evaluated by measuring the tensile strength of the glove (in MegaPascal).

In-house & External Lab Results:









A = Latex, Lead (India)
B = Latex, Lead-free (India)
C = Latex, Lead-free (India)
D = Latex-free, Lead-free (USA)
E = Latex-free, Lead-free (Malaysia)

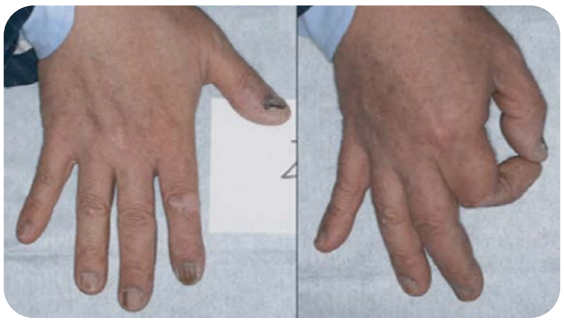
No Safe Dose Exists

In a recent article published in Japan[1], the hands of 104 orthopaedic surgeons were examined by dermatologists.

31.4% diagnosted with radiation-induced skin injury

5.5% undergone specific dermatological treatment

2.7% had resection of pre-cancerous skin lesions and skin cancer, including radiation keratosis and squamous cells carcinoma.



Pictured Right: Grade 2 : Case with ahyperkeratotic papule (4th finger), rough surface due to hyperkeratosis (1st, 2nd, 3rd fingers), severe deformities, and nail discoloration.

1. Journal of Orthopaedic Science 2022