



April 27, 2022

Guang Dong Kingfa Sci. & Tech.Co., Ltd.  
Xiaoge Yu  
Manager  
No. 28 DeLong Ave., Shijiao Town, Qingcheng District  
Qingyuan, Guangdong 511545  
China

Re: K213040

Trade/Device Name: Nitrile Patient Examination Gloves Blue Colored Tested For Use With  
Chemotherapy Drugs, Nitrile Patient Examination Gloves Blue Violet Colored  
Tested For Use With Chemotherapy Drugs, Nitrile Patient Examination Gloves  
Black Colored Tested For Use With Fentanyl Citrate

Regulation Number: 21 CFR 880.6250

Regulation Name: Non-Powdered Patient Examination Glove

Regulatory Class: Class I, reserved

Product Code: LZA, LZC, OPJ, QDO

Dated: April 16, 2022

Received: April 18, 2022

Dear Xiaoge Yu:

We have reviewed your Section 510(k) premarket notification of intent to market the device referenced above and have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to legally marketed predicate devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments, or to devices that have been reclassified in accordance with the provisions of the Federal Food, Drug, and Cosmetic Act (Act) that do not require approval of a premarket approval application (PMA). You may, therefore, market the device, subject to the general controls provisions of the Act. Although this letter refers to your product as a device, please be aware that some cleared products may instead be combination products. The 510(k) Premarket Notification Database located at <https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfpmn/pmn.cfm> identifies combination product submissions. The general controls provisions of the Act include requirements for annual registration, listing of devices, good manufacturing practice, labeling, and prohibitions against misbranding and adulteration. Please note: CDRH does not evaluate information related to contract liability warranties. We remind you, however, that device labeling must be truthful and not misleading.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), it may be subject to additional controls. Existing major regulations affecting your device can be found in the Code of Federal Regulations, Title 21, Parts 800 to 898. In addition, FDA may publish further announcements concerning your device in the Federal Register.

Please be advised that FDA's issuance of a substantial equivalence determination does not mean that FDA has made a determination that your device complies with other requirements of the Act or any Federal statutes and regulations administered by other Federal agencies. You must comply with all the Act's requirements, including, but not limited to: registration and listing (21 CFR Part 807); labeling (21 CFR Part 801); medical device reporting (reporting of medical device-related adverse events) (21 CFR 803) for devices or postmarketing safety reporting (21 CFR 4, Subpart B) for combination products (see <https://www.fda.gov/combination-products/guidance-regulatory-information/postmarketing-safety-reporting-combination-products>); good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820) for devices or current good manufacturing practices (21 CFR 4, Subpart A) for combination products; and, if applicable, the electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR 1000-1050.

Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21 CFR Part 807.97). For questions regarding the reporting of adverse events under the MDR regulation (21 CFR Part 803), please go to <https://www.fda.gov/medical-devices/medical-device-safety/medical-device-reporting-mdr-how-report-medical-device-problems>.

For comprehensive regulatory information about medical devices and radiation-emitting products, including information about labeling regulations, please see Device Advice (<https://www.fda.gov/medical-devices/device-advice-comprehensive-regulatory-assistance>) and CDRH Learn (<https://www.fda.gov/training-and-continuing-education/cdrh-learn>). Additionally, you may contact the Division of Industry and Consumer Education (DICE) to ask a question about a specific regulatory topic. See the DICE website (<https://www.fda.gov/medical-devices/device-advice-comprehensive-regulatory-assistance/contact-us-division-industry-and-consumer-education-dice>) for more information or contact DICE by email ([DICE@fda.hhs.gov](mailto:DICE@fda.hhs.gov)) or phone (1-800-638-2041 or 301-796-7100).

Sincerely,

Bifeng Qian, M.D., Ph.D  
Acting Assistant Director  
DHT4B: Division of Infection Control  
and Plastic Surgery Devices  
OHT4: Office of Surgical  
and Infection Control Devices  
Office of Product Evaluation and Quality  
Center for Devices and Radiological Health

Enclosure

## Indications for Use

510(k) Number (if known)  
K213040

Device Name

Nitrile Patient Examination Gloves Blue Colored Tested For Use With Chemotherapy Drugs

Indications for Use (Describe)

The blue colored nitrile examination glove is intended to be worn on the hands of examiner's to prevent contamination between patient and examiner. This is a single-use, powder-free, non-sterile device.

The Nitrile Patient Examination Gloves Blue Colored were tested for use with chemotherapy drugs per ASTM D6978-05 (Reapproved 2019) Standard Practice for Assessment of Medical Gloves to Permeation by Chemotherapy Drugs.

The tested chemotherapy drug are as follows:

- Bleomycin Sulfate 15 mg/ml >240 min.
- Carboplatin 10 mg/ml >240 min.
- Carmustine (BCNU) 3.3 mg/ml 17.2 min.
- Cisplatin 1.0 mg/ml >240 min.
- Cyclophosphamide (Cytosan) 20.0 mg/ml >240 min.
- Cytarabine HCl 100 mg/ml >240 min.
- Dacarbazine (DTIC) 10.0 mg/ml >240 min.
- Daunorubicin 5.0 mg/ml >240 min.
- Docetaxel 10.0 mg/ml >240 min.
- Doxorubicin HCl 2.0 mg/ml >240 min.
- Etoposide (Toposar) 20.0 mg/ml >240 min.
- Fluorouracil 50.0 mg/ml >240 min.
- Gemcitabine 38 mg/ml >240 min.
- Idarubicin 1 mg/ml >240 min.
- Ifosfamide 50.0 mg/ml >240 min.
- Irinotecan 20.0 mg/ml >240 min.
- Mechlorethamine HCl 1.0 mg/ml >240 min.
- Melphalan 5 mg/ml >240 min.
- Methotrexate 25 mg/ml >240 min.
- Mitomycin C. 0.5 mg/ml >240
- Mitoxantrone 2.0 mg/ml >240 min.
- Paclitaxel (Taxol) 6.0 mg/ml >240 min.
- Thiotepa 10.0 mg/ml 13.9 min.
- Vincristine Sulfate 1.0 mg/ml >240 min.

Warning: Do not use with Carmustine and Thiotepa.

Type of Use (Select one or both, as applicable)

Prescription Use (Part 21 CFR 801 Subpart D)

Over-The-Counter Use (21 CFR 801 Subpart C)

**CONTINUE ON A SEPARATE PAGE IF NEEDED.**

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## Indications for Use

510(k) Number (if known)  
K213040

### Device Name

Nitrile Patient Examination Gloves Blue Violet Colored Tested For Use With Chemotherapy Drugs

### Indications for Use (Describe)

The nitrile examination glove is intended to be worn on the hands of examiner's to prevent contamination between patient and examiner. This is a single-use, powder-free, non-sterile device.

The Nitrile Patient Examination Gloves Blue Violet Colored were tested for use with chemotherapy drugs per ASTM D6978-05 (Reapproved 2019) Standard Practice for Assessment of Medical Gloves to Permeation by Chemotherapy Drugs.

The tested chemotherapy drug are as follows:

- Carmustine (BCNU) 3.3 mg/ml 65.3 min.
- Cisplatin 1.0 mg/ml >240 min.
- Cyclophosphamide (Cytoxan) 20.0 mg/ml >240 min.
- Dacarbazine (DTIC) 10.0 mg/ml >240 min.
- Doxorubicin HCl 2.0 mg/ml >240 min.
- Etoposide (Toposar) 20.0 mg/ml >240 min.
- Fluorouracil 50.0 mg/ml >240 min.
- Methotrexate 25 mg/ml >240 min.
- Paclitaxel (Taxol) 6.0 mg/ml >240 min.
- Thiotepa 10.0 mg/ml 58.3 min.,

Warning: Do not use with Carmustine and Thiotepa.

### Type of Use (Select one or both, as applicable)

Prescription Use (Part 21 CFR 801 Subpart D)

Over-The-Counter Use (21 CFR 801 Subpart C)

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## Indications for Use

510(k) Number (if known)  
K213040

Device Name  
Nitrile Patient Examination Gloves Black Colored Tested For Use With Fentanyl Citrate

### Indications for Use (Describe)

The nitrile examination glove is intended to be worn on the hands of examiner's to prevent contamination between patient and examiner. This is a single-use, powder-free, non-sterile device.

The Nitrile Patient Examination Gloves Black Colored were tested for use with Fentanyl Citrate per ASTM D6978-05 (Reapproved 2019) Standard Practice for Assessment of Medical Gloves to Permeation by Chemotherapy Drugs.

- Fentanyl Citrate 100mcg/2ml >240 minutes

Type of Use (Select one or both, as applicable)

Prescription Use (Part 21 CFR 801 Subpart D)

Over-The-Counter Use (21 CFR 801 Subpart C)

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## 510(k) summary: K213040

### I. Submitter

GUANGDONG KINGFA SCI. & TECH.CO., LTD.

No.28 Delong Ave., Shijiao Town, Qingcheng District, Qingyuan, Guangdong, China

Contact person: Xiaoge Yu

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Preparation date: Apr. 27, 2022

### US Agent

Jeff Zhang

Ucl-Reg Service Inc

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### II. Proposed Device

Device Trade Name	Nitrile Patient Examination Gloves Blue Colored Tested For Use With Chemotherapy Drugs Nitrile Patient Examination Gloves Blue Violet Colored Tested For Use With Chemotherapy Drugs Nitrile Patient Examination Gloves Black Colored Tested For Use With Fentanyl Citrate
Common name:	Patient Examination Glove (Tested For Use With Chemotherapy Drugs)
Regulation Number:	21 CFR 880.6250
Regulatory Class:	Class I
Product code:	LZA, LZC, OPJ, QDO
Review Panel	General Hospital

### III. Predicate Devices

510(k) Number: K211220

Trade name: Nitrile Patient Examination Gloves Blue Tested For Use With Chemotherapy Drugs

Nitrile Patient Examination Gloves Blue Violet Tested For Use  
With Chemotherapy Drugs

Common name: Patient Examination Glove

Classification: Class I

Product Code: LZA, LZC,OPJ

#### **IV. Device description**

Power-Free Nitrile Examination Gloves (Tested for Use with Chemotherapy Drugs) are non-sterile, single use, disposable gloves intended for medical purposes to be worn on the hands of examiners to prevent contamination between a patient and an examiner. The gloves are offered in six sizes, x-small (6.5"), small (7"), medium (8"), large (8.5"), X-large (9"), XXL (9.5"). Three colors are available for all size, includes blue, blue violet and black.

The gloves are designed and manufactured in accordance with the ASTM D6319-19 standard and are tested for use with chemotherapy drugs per ASTM D6978-05 (Reapproved 2019).

#### **V. Indication for use**

A patient examination glove is a disposable device intended for medical purposes that is worn on the examiner's hand to prevent contamination between patient and examiner.

These gloves were tested for use with chemotherapy drugs per ASTM D6978-05 (2019) *Standard Practice for Assessment of Medical Gloves to Permeation by Chemotherapy Drugs*.

The Nitrile Patient Examination Gloves Blue Colored Tested Chemotherapy Drugs are as follows:

- Bleomycin Sulfate 15 mg/ml >240 min.
- Carboplatin 10 mg/ml >240 min.
- Carmustine (BCNU) 3.3 mg/ml 17.2 min.
- Cisplatin 1.0 mg/ml >240 min.
- Cyclophosphamide (Cytosan) 20.0 mg/ml >240 min.
- Cytarabine HCl 100 mg/ml >240 min.
- Dacarbazine (DTIC) 10.0 mg/ml >240 min.
- Daunorubicin 5.0 mg/ml >240 min.
- Docetaxel 10.0 mg/ml >240 min
- Doxorubicin HCl 2.0 mg/ml >240 min.
- Etoposide (Toposar) 20.0 mg/ml >240 min.



- Fluorouracil 50.0 mg/ml >240 min.
- Gemcitabine 38 mg/ml >240 min.
- Idarubicin 1 mg/ml >240 min.
- Ifosfamide 50.0 mg/ml >240 min.
- Irinotecan 20.0 mg/ml >240 min.
- Mechlorethamine HCl 1.0 mg/ml >240 min.
- Melphalan 5 mg/ml >240 min.
- Methotrexate 25 mg/ml >240 min.
- Mitromycin C. 0.5 mg/ml >240
- Mitoxantrone 2.0 mg/ml >240 min.
- Paclitaxel (Taxol) 6.0 mg/ml >240 min.
- Thiotepa 10.0 mg/ml 13.9 min.
- Vincristine Sulfate 1.0 mg/ml >240 min

Warning: Do not use with Carmustine and Thiotepa.

The Nitrile Patient Examination Gloves Blue Violet Colored Tested Chemotherapy Drugs as follows:

- Carmustine (BCNU) 3.3 mg/ml 65.3 min.
- Cisplatin 1.0 mg/ml >240 min.
- Cyclophosphamide (Cytosan) 20.0 mg/ml >240 min.
- Dacarbazine (DTIC) 10.0 mg/ml >240 min.
- Doxorubicin HCl 2.0 mg/ml >240 min.
- Etoposide (Toposar) 20.0 mg/ml >240 min.
- Fluorouracil 50.0 mg/ml >240 min.
- Methotrexate 25 mg/ml >240 min.
- Paclitaxel (Taxol) 6.0 mg/ml >240 min.
- Thiotepa 10.0 mg/ml 58.3 min.

Warning: Do not use with Carmustine and Thiotepa.

The Nitrile Patient Examination Gloves Black Colored Tested with Fentanyl Citrate

- Fentanyl Citrate 100mcg/2ml >240 minutes

## VI. Comparison of technological characteristics with the predicate devices

Table 1 Comparison of Natural Rubber Surgical Gloves

Item	Proposed device (K213040)	Predicate device (K211220)	Discussion

Product name	Nitrile Patient Examination Gloves Blue Colored Tested For Use With Chemotherapy Drugs. Nitrile Patient Examination Gloves Blue Violet Colored Tested For Use With Chemotherapy Drugs. Nitrile Patient Examination Gloves Black Colored Tested For Use With Fentanyl Citrate	Nitrile Patient Examination Gloves Blue Tested For Use With Chemotherapy Drugs Nitrile Patient Examination Gloves Blue Violet Tested For Use With Chemotherapy Drugs	-
Product Code	LZA, LZC,OPJ, QDO	LZA, LZC,OPJ	Similar
Regulation No.	21 CFR 880.6250	21 CFR 880.6250	Same
Classification	Class I	Class I	Same
Powder free	Yes	Yes	Same
Indication for use	The nitrile examination glove is intended to be worn on the hands of examiner's to prevent contamination between patient and examiner. This is a single-use, powder-free, non-sterile device.  These gloves were tested for use with chemotherapy drugs per ASTM D6978-05 (Reapproved 2019) Standard Practice for Assessment of Medical Gloves to Permeation by Chemotherapy Drugs.	A patient examination glove is a disposable device intended for medical purposes that is worn on the examiner's hand to prevent contamination between patient and examiner.  These gloves were tested for use with chemotherapy drugs as per ASTM D6978-05 (Reapproved 2019) Standard Practice for Assessment of Medical Gloves to Permeation by Chemotherapy Drugs	Similar
Main Material	Powder-Free Nitrile	Powder-Free Nitrile	Same

Color	Blue, Blue violet, Black	Blue, Blue violet	Similar <sup>2</sup>
Size	x-small, small, medium, large, x-large, XX-large	small, medium, large, x-large	Similar
Dimensions – Length	Complies with ASTM D6319-19 XS (220mm min) S (220mm min) M (230mm min) L (230mm min) XL (230mm min) XXL (230mm min)	Complies with ASTM D6319-19  S (220mm min) M (230mm min) L (230mm min) XL (230mm min)	Same
Dimensions – Width	Complies with ASTM D6319-19) XS (70±10mm) S (80±10mm) M (95±10mm) L (110±10mm) XL (120±10mm) XXL (≥120mm)	Complies with ASTM D6319-19  S (80±10mm) M (95±10mm) L (110±10mm) XL (120±10mm)	Similar
Dimensions – Thickness	Complies with: ASTM D6319-19 Palm: 0.05mm min Finger: 0.11mm min	Complies with: ASTM D6319-19 Palm: 0.05mm min Finger: 0.11mm min	Same
Physical Properties	Complies with: ASTM D6319-19 minimum: Tensile Strength: Before Aging ≥14 MPa, min. After Aging ≥14 MPa, min.	Complies with: ASTM D6319-19 minimum: Tensile Strength: Before Aging ≥14 MPa, min. After Aging ≥14 MPa, min.	Same
	Elongation: Before Aging 500%, min. After Aging 400%, min.	Elongation: Before Aging 500%, min. After Aging 400%, min.	Same
Freedom from Holes	Complies with ASTM D6319-19 and ASTM D5151-19 G-1, AQL 1.5	Complies with ASTM D6319-19 and ASTM D5151-19 G-1, AQL 1.5	Same
Residual Powder	Complies with: ASTM D6319-19	Complies with: ASTM D6319-19	Same

	<2mg per glove	<2mg per glove	
Contact Durations	Limited <24 hours	Limited <24 hours	Same
Biocompatibility	ISO 10993-10: Not a skin irritant Not a skin sensitizer At the neat extraction, the test article is considered cytotoxic, but the acute systemic toxicity results demonstrate the device will not cause a systemic effect.	ISO 10993-10: Not a skin irritant Not a skin sensitizer At the neat extraction, the test article is considered cytotoxic, but the acute systemic toxicity results demonstrate the device will not cause a systemic effect.	Same
Sterility	Non-sterile	Non-sterile	Same
Rx Only or OTC	Over the Counter	Over the Counter	Same
Chemotherapy Drugs	Nitrile Patient Examination Gloves Blue Colored Tested For Use With Chemotherapy Drugs	Nitrile Patient Examination Gloves Blue Tested For Use With Chemotherapy Drugs	/
	Bleomycin Sulfate 15 mg/ml >240 min.	NA	Similar <sup>1</sup>
	Carboplatin 10 mg/ml >240 min.	NA	
	Carmustine (BCNU) 3.3 mg/ml 17.2 min.	Carmustine (BCNU) 3.3 mg/ml 65.3 min.	
	Cisplatin 1.0 mg/ml >240 min.	Cisplatin 1.0 mg/ml >240 min.	
	Cyclophosphamide (Cytoxan) 20.0 mg/ml >240 min.	Cyclophosphamide (Cytoxan) 20.0 mg/ml >240 min.	
	Cytarabine HCl 100 mg/ml >240 min.	NA	
	Dacarbazine (DTIC)10.0 mg/ml >240 min.	Dacarbazine (DTIC)10.0 mg/ml >240 min.	
	Daunorubicin 5.0 mg/ml >240 min.	NA	
	Docetaxel 10.0 mg/ml	NA	

>240 min			
Doxorubicin HCl 2.0 mg/ml >240 min.	Doxorubicin Hydrochloride 2.0 mg/ml >240 min.		
Etoposide (Toposar) 20.0 mg/ml >240 min.	Etoposide (Toposar) 20.0 mg/ml >240 min.		
Fluorouracil 50.0 mg/ml >240 min.	Fluorouracil 50.0 mg/ml >240 min.		
Gemcitabine 38 mg/ml >240 min.	NA		
Idarubicin 1 mg/ml >240 min.	NA		
Ifosfamide 50.0 mg/ml >240 min.	NA		
Irinotecan 20.0 mg/ml >240 min.	NA		
Mechlorethamine HCl 1.0 mg/ml >240 min.	NA		
Melphalan 5 mg/ml >240 min.	NA		
Methotrexate 25 mg/ml >240 min.	NA		
Mitomycin C. 0.5 mg/ml >240	NA		
Mitoxantrone 2.0 mg/ml >240 min.	NA		
Paclitaxel (Taxol) 6.0 mg/ml >240 min.	Paclitaxel (Taxol) 6.0 mg/ml >240 min.		
Thiotepa 10.0 mg/ml 13.9 min.	Thiotepa 10.0 mg/ml 58.3min.		
Vincristine Sulfate 1.0 mg/ml >240 min.	NA		
Nitrile Patient Examination Gloves Blue Violet Colored Tested For Use With Chemotherapy Drugs	Nitrile Patient Examination Gloves Blue Violet Tested For Use With Chemotherapy Drugs		/
Carmustine (BCNU) 3.3 mg/ml 65.3 min.	Carmustine (BCNU) 3.3 mg/ml 65.3 min.		Similar <sup>1</sup>

	Cisplatin 1.0 mg/ml >240 min.	Cisplatin 1.0 mg/ml >240 min.	
	Cyclophosphamide (Cytosan) 20.0 mg/ml >240 min.	Cyclophosphamide (Cytosan) 20.0 mg/ml >240 min.	
	Dacarbazine (DTIC)10.0 mg/ml >240 min.	Dacarbazine (DTIC)10.0 mg/ml >240 min.	
	Doxorubicin Hydrochloride 2.0 mg/ml >240 min.	Doxorubicin Hydrochloride 2.0 mg/ml >240 min.	
	Etoposide (Toposar) 20.0 mg/ml >240 min.	Etoposide (Toposar) 20.0 mg/ml >240 min.	
	Fluorouracil 50.0 mg/ml >240 min.	Fluorouracil 50.0 mg/ml >240 min.	
	Methotrexate 25 mg/ml >240 min.	NA	
	Doxorubicin Hydrochloride 2.0 mg/ml >240 min.	Doxorubicin Hydrochloride 2.0 mg/ml >240 min.	
	Etoposide (Toposar) 20.0 mg/ml >240 min.	Etoposide (Toposar) 20.0 mg/ml >240 min.	
	Nitrile Examination Black Colored with Fentanyl Citrate Patient Gloves Tested	/	New add black color glove <sup>2</sup>
	• Fentanyl Citrate 100mcg/2ml >240 minutes	NA	

<sup>1</sup> Add new 15 kinds of the chemotherapy label claim to the blue colored glove and add one chemotherapy drug test to the blue violet colored glove, which the both of glove has got the clearance under K211220. The permeation testing was conducted per ASTM D6978-05 (Reapproved 2019) to support the addition of the labeling claim.

<sup>2</sup> Add a new model glove with black and label claim the device tested by Fentanyl Citrate. Only change the colorant additives during manufacturing. The biocompatibility testing has been conduct on the black gloves and the test results prove the black glove is biologically safe as the previous device. In addition, the physical performances of the proposed device were performed on the final device per ASTM D6319-19.

## VII. Non-Clinical Testing

Non clinical tests were conducted in accordance with following standards to verify that the proposed device met all design specifications.

Items	Methodology / Standard	Acceptance Criteria	Results
Palm width	ASTM D3767-03(2020)	XS (70±10mm) S (80±10mm) M (95±10mm) L (110±10mm) XL (120±10mm) XXL ( $\geq$ 120mm)	Pass
Length	ASTM D3767-03(2020)	XS (220mm min) S (220mm min) M (230mm min) L (230mm min) XL (230mm min) XXL (230mm min)	Pass
Thickness	ASTM D3767-03(2020)	Finger: 0.11mm Palm: 0.05mm	Pass
Freedom from holes	ASTM D5151-19	Freedom free hole AQL 2.5	Pass
Physical Properties (before aging)			
Tensile Strength	ASTM D412-16	$\geq$ 14Mpa	Pass
Ultimate Elongation	ASTM D412-16	$\geq$ 500%	Pass
Physical Properties (after aging)			
Tensile Strength	ASTM D573-04(2019)	$\geq$ 14Mpa	
Ultimate Elongation	ASTM D573-04(2019)	$\geq$ 400%	Pass
Residual Powder Content	ASTM D6124-06(2017)	$\leq$ 2mg per glove	Pass
Cytotoxic	ISO 10993-5	Non-cytotoxic	Under conditions of the study, device

			extract is cytotoxic.
Acute Systemic Toxicity	ISO 10993-11	Non-acute systemic toxicity	Under conditions of the study, did not show acute systemic toxicity in vivo / Pass
Irritation	ISO 10993-10	Non-irritating	Under the conditions of the study, not an irritant/ Pass
Sensitization	ISO 10993-10	Non-sensitizing	Under conditions of the study, not a sensitizer./ Pass

### VIII. Clinical Testing

No clinical study is included in this submission.

### IX. Conclusion

The conclusions drawn from the nonclinical tests demonstrate that the subject device Power-Free Nitrile Examination Gloves (Tested for Use with Chemotherapy Drugs) is as safe, as effective, and performs as well as or better than the legally marketed predicated device in K211220.