December 30, 2021

Siyang Threeguard Medical Supplies Co.,Ltd.
Boyle Wang
Official Correspondent
Shanghai Truthful Information Technology Co., Ltd.
RM.1801,No.161,East Lujiazui Rd.,Pudong
Shanghai, Shanghai 200120
China

Re: K212834
Trade/Device Name: Disposable Nitrile Medical Examination Glove (Tested for Use with Chemotherapy Drugs)
Regulation Number: 21 CFR 880.6250
Regulation Name: Non-Powdered Patient Examination Glove
Regulatory Class: Class I
Product Code: LZA, LZC
Dated: November 22, 2021
Received: December 01, 2021

Dear Boyle Wang:

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) or phone (1-800-638-2041 or 301-796-7100).

Sincerely,

For Clarence W. Murray III, Ph.D.
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

DEPARTMENT OF HEALTH AND HUMAN SERVICES
Food and Drug Administration

Indications for Use

Form Approved: OMB No. 0910-0120
Expiration Date: 06/30/2023
See PRA Statement below.

510(k) Number *(if known)*
K212834

Device Name
Disposable Nitrile Medical Examination Glove(Tested for Use with Chemotherapy Drugs)

Indications for Use *(Describe)*
A patient examination glove is a disposable device intended for medical purposes that is worn on the examiner's hands to prevent contamination between patient and examiner.
These gloves were tested for use with chemotherapy drugs, per ASTM D6978-05 Standard Practice for Assessment of Resistance of Medical Gloves to Permeation by Chemotherapy Drugs.

Chemotherapy Drug	Concentration	Breakthrough Detection Time in Minutes
Carmustine (BCNU)	3.3 mg/ml (3,300 ppm)	15.2 Minutes
Cisplatin	1.0 mg/ml(1,000 ppm)	> 240 Minutes
Cyclophosphamide (Cytoxan)	20.0 mg/ml(20,000 ppm)	> 240 Minutes
Dacarbazine	10.0 mg/ml(10,000 ppm)	> 240 Minutes
Doxorubicin HCI	2.0 mg/ml(2,000 ppm)	> 240 Minutes
Etoposide	20.0 mg/ml(20,000 ppm)	> 240 Minutes
Fluorouracil	50.0 mg/ml(50,000 ppm)	> 240 Minutes
Methotrexate	25.0 mg/ml(25,000 ppm)	> 240 Minutes
Miromycin C	0.5 mg/ml(500 ppm)	> 240 Minutes
Paclitaxel	6.0 mg/ml(6,000 ppm)	> 240 Minutes
ThioTepa	10.0 mg/ml(10,000 ppm)	45.8 Minutes
Vincristine Sulface	1.0 mg/ml(1,000 ppm)	> 240 Minutes

Please note that the following drugs have low permeation times:
Carmustine (BCNU) 3.3 mg/ml 15.2 Minutes
Thio-Tepa 10.0 mg/ml 45.8 Minutes

Warning: Please do not use with Carmustine

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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510(k) Summary

(K212834)

This summary of 510(k) is being submitted in accordance with 21 CFR 807.92.

1.0 Submitter's Information

Name: Siyang Threeguard Medical Supplies Co., Ltd.
Address: East of Nanhai Road and South of Guilin Road,Economic development zone,Siyang County, Suqian city, Jiangsu, 223799, China.
Phone Number: +86-13485097856
Contact: Guo Hua

Designated Submission Correspondent

Contact: Mr. Boyle Wang
Name: Shanghai Truthful Information Technology Co., Ltd.
Address: Room 1801, No. 161 East Lujiazui Rd., Pudong,Shanghai 200120,China
Tel: +86-21-50313932
Email: Info@truthful.com.cn

Date of Preparation: December 20,2021

2.0 Device Information

Trade name: Disposable Nitrile Medical Examination Glove(Tested for Use with Chemotherapy Drugs)
Common name: Patient Examination Gloves

Classification name: Non-powdered patient examination glove
Model(s): XS,S, M, L, XL

3.0 Classification

Production code: LZA,LZC
Regulation number: 21CFR880.6250
Classification: Class I
Panel: General Hospital

4.0 Predicate Device Information

Manufacturer: Medline Industries, Inc.
Device: Medline Powder-Free Light Blue Nitrile Exam Glove (Tested for Use with Chemotherapy Drugs)
510(k) number: K201390

5.0 Device Description

The subject device is single use, disposable gloves intended for medical purposes to be worn on the examiner's hands to prevent contamination between patient and examiner. The gloves are powder-free, ambidextrous with beaded cuff, blue colored, nitrile, and tested for use with chemotherapy drugs. The gloves are offered in five sizes: extra-small, small, medium, large, and extra-large.

6.0 Indication for Use

A patient examination glove is a disposable device intended for medical purposes that is worn on the examiner's hands to prevent contamination between patient and examiner.
These gloves were tested for use with chemotherapy drugs, per ASTM D6978-05 *Standard Practice for Assessment of Resistance of Medical Gloves to Permeation by Chemotherapy Drugs.*

Chemotherapy Drug	Concentration	Breakthrough Detection Time in Minutes
Carmustine (BCNU)	3.3 mg/ml (3,300 ppm)	15.2
Cisplatin	1.0 mg/ml(1,000 ppm)	＞ 240
Cyclophosphamide (Cytoxan)	20.0 mg/ml(20,000 ppm)	＞ 240
Dacarbazine (DTIC)	10.0 mg/ml(10,000 ppm)	＞ 240
Doxorubicin HCl	2.0 mg/ml(2,000 ppm)	＞ 240
Etoposide	20.0 mg/ml(20,000 ppm)	＞ 240
Fluorouracil	50.0 mg/ml(50,000 ppm)	＞ 240
Methotrexate	25 mg/ml(25,000 ppm)	＞ 240
Mitomycin C	0.5 mg/ml(500 ppm)	＞ 240
Paclitaxel	6.0 mg/ml(6,000 ppm)	＞ 240
Thio Tepa	10.0 mg/ml(10,000 ppm)	45.8
Vincristine Sulfate	1.0 mg/ml(1,000 ppm)	＞ 240

Please note that the following drugs have low permeation times:
Carmustine (BCNU) 3.3 mg/ml 15.2 Minutes;
Thio Tepa 10.0 mg/ml 45.8 Minutes.

Caution: Testing showed an average breakthrough time of 45.8 minutes with Thio-Tepa
WARNING: Do not use with Carmustine

7.0 Comparison of Technological Characteristics With The Predicate Device

Table1-General Comparison

Item	**Subject Device** (K212834)	**Predicate Device** (K201390)	**Remark**
Product Code	LZA,LZC	LZA,LZC	Same
Regulation No.	21CFR880.6250	21CFR880.6250	Same
Class	I	I	Same
Intended 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 as per ASTM D6978-05(2019) Standard Practice for Assessment of Resistance 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(2019) Standard Practice for Assessment of Resistance of Medical Gloves to Permeation by Chemotherapy Drugs.	Same
Powdered or Powered free	Powdered free	Powdered free	Same
Design Feature	Ambidextrous	Ambidextrous	Same
Sterility	Non-Sterile	Non-Sterile	Same
Labeling Information	Single-use indication, powder free, device color, device name, glove size and quantity, Non-Sterile, a statement of standard ASTM D6978-05 compliance and a summary of the testing results.	Single-use indication, powder free, device color, device name, glove size and quantity, Non-Sterile, a statement of standard ASTM D6978-05 compliance and a summary of the testing results.	Same

Table2 Device Dimensions Comparison

Predicate Device(K201390)	Designation	Size					Tolerance
		XS	S	M	L	XL	
	Length, mm	NA	240	240	240	240	min
	Width, mm	NA	85	95	105	115	±10
	Thickness, mm:						
	Finger	0.16					min
	Palm	0.14					min
Subject Device (K212834)	Designation	Size					Tolerance
		XS	S	M	L	XL	
	Length, mm	230	230	230	230	230	min
	Width, mm	75	85	95	105	115	±5
	Thickness, mm:						
	Finger	0.05					min
	Palm	0.05					min
Remark	Different						

Analysis: The physical dimensions are different with that of the predicate, but they all meet the requirements of ASTM D6319-19.

Table3 Performance Comparison

Item			Subject device (K212834)	Predicate device (K201390)	Remark
Colorant			Blue	Light Blue	Different
Physical Properties	Before Aging	Tensile Strength	14Mpa, min	17Mpa, min	Different
		Ultimate Elongation	500% min	500% min	Same
	After Aging	Tensile Strength	14Mpa, min	14Mpa, min	Same
		Ultimate Elongation	400%min	400%min	Same
	Comply with ASTM D6319			Comply with ASTM D6319	Same
Freedom from Holes		Be free from holes when tested in accordance with ASTMD5151 AQL=2.5		Be free from holes when tested in accordance with ASTMD5151 AQL=2.5	Same
Powder Content		Meet the requirements of ASTM D6124 < 2.0mg		Meet the requirements of ASTM D6124	Same
		Carmustine (BCNU) 3.3 mg/ml: 15.2 Minutes		Carmustine (BCNU) 3.3 mg/ml: 25.3 Minutes	Different
		Cisplatin 1.0 mg/ml: ＞ 240 Minutes		Cisplatin 1.0 mg/ml: ≥240	Same

Chemotherapy Drugs Tested with Minimum Breakthrough Detection Time as Tested per ASTM D 6978		Minutes	
	Cyclophosphamide (Cytoxan) 20.0 mg/ml: ＞ 240 Minutes	Cyclophosphamide (Cytoxan) 20.0 mg/ml: ≥240 Minutes	Same
	Dacarbazine (DTIC) 10.0 mg/ml:＞ 240 Minutes	Dacarbazine (DTIC) 10.0 mg/ml: ≥240 Minutes	Same
	Doxorubicin HCl 2.0 mg/ml: ＞ 240 Minutes	Doxorubicin Hydrochloride 2.0 mg/ml: ≥240 Minutes	Same
	Etoposide 20.0 mg/ml: ＞ 240 Minutes	Etoposide (Toposar) 20.0 mg/ml: ≥240 Minutes	Same
	Fluorouracil 50.0 mg/ml: ＞240 Minutes	Fluorouracil 50.0 mg/ml: ≥240 Minutes	Same
	Methotrexate 25 mg/ml: ＞240 Minutes	Methotrexate 25 mg/ml: ≥240 Minutes	Same
	Mitomycin C 0.5 mg/ml: ＞ 240 Minutes	Mitomycin C 0.5 mg/ml: ≥ 240 Minutes	Same
	Paclitaxel 6.0 mg/ml: ＞240 Minutes	Paclitaxel (Taxol) 6.0 mg/ml: ≥240 Minutes	Same
	Thio Tepa 10.0 mg/ml: 45.8 Minutes	Thio-Tepa 10.0 mg/ml: 43.7 Minutes	Different
	Vincristine Sulfate 1.0 mg/ml: ＞ 240 Minutes	Vincristine Sulfate (Oncovin) 1.0 mg/ml: ≥240 Minutes	Same

Table4 Safety Comparison

Item		Subject device (K212834)	Predicate device (K201390)	Remark
Material		Nitrile Color Additive Liquid Chlorine	Nitrile Color Additive Liquid Chlorine	Same
Biocompatibility	Irritation (ISO 10993-10:2010 Biological Evaluation of	Under the conditions of the study, not	Comply with ISO10993-10	Same

	Medical Devices – Part 10: Tests For Irritation And Skin Sensitization)	an irritant		
	Sensitization (ISO 10993-10:2010 Biological Evaluation of Medical Devices – Part 10: Tests For Irritation And Skin Sensitization)	Under conditions of the study, not a sensitizer.		
	Cytotoxicity (ISO 10993-5:2009 Biological Evaluation of Medical Devices – Part 5: Tests For In Vitro Cytotoxicity)	Under conditions of the study, device extract is not cytotoxic	Under conditions of the study, device extract is cytotoxic	Different
	Acute Systemic Toxicity(ISO 10993-11:2017,Biological evaluation of medical devices - Part 11: Tests for systemic toxicity.)	N/A	Under conditions of the study, device extract is non-toxic	Different

8.0 Summary of Non-Clinical Testing

The biocompatibility evaluation for Disposable Nitrile Medical Examination Glove(Tested for Use with Chemotherapy Drugs) was conducted in accordance with the following standards:

ISO 10993-10:2010 Biological Evaluation of Medical Devices – Part 10: Tests for Irritation And Skin Sensitization.

ISO 10993-5:2009 Biological Evaluation of Medical Devices – Part 5: Tests For In Vitro Cytotoxicity

Performance Testing (Bench)

Physical performance qualities of the proposed device were evaluated per ASTM D6319-10, *Standard Specification for Nitrile Examination Gloves for Medical Application.*

Permeation testing was conducted to support the addition of the labeling claim: *Tested for use with chemotherapy drugs*. In addition, the proposed device was

tested according to ASTM D6978-05 (Reapproved 2019), *Standard Practice for Assessment of Resistance of Medical Gloves to Permeation by Chemotherapy Drugs*, in which minimum breakthrough times were determined for a wide range of chemotherapy drugs.

In summary, the performance testing of the subject device was conducted to adequately demonstrate the effectiveness of the device in accordance with the relevant test methods cited below:

- ASTM D6124-06 (Reapproved 2017), Standard Test Method for Residual Powder on Medical Gloves
- ASTM D5151-19, Standard Test Method for Detection of Holes in Medical Gloves.
- ASTM D6319-19, Standard Specification for Nitrile Examination Gloves for Medical Application.
- ASTM D 6978-05 (Reapproved 2019) Standard Practice for Assessment of Resistance of Medical Gloves to Permeation by Chemotherapy Drugs.

Table 5 Performance Testing Summary

Test Method	Purpose	Acceptance Criteria	Results
ASTM D6319	Physical Dimensions Test	Length(mm): XS/S:≥220； M/L/XL: ≥230； Width(mm): XS: 70±10; S: 80±10; M: 95±10; L: 110±10; XL: 120±10	Length:＞230 Width: XS: 77-79; S: 82-86 M: 95-97 L: 104-106 XL: 115-117 Pass
		Thickness (mm) : Finger: ≥0.05 Palm: ≥0.05	XS: Finger: 0.10-0.12 Palm: 0.06-0.10 S: Finger: 0.09-0.12 Palm: 0.07-0.09 M: Finger: 0.08-0.12 Palm: 0.06-0.09 L: Finger: 0.10-0.13 Palm: 0.06-0.09

					XL: Finger: 0.11-0.12 Palm: 0.06-0.08 Pass
ASTM D5151	Watertightness Test for Detection of Holes	Meet the requirements of ASTM D5151 AQL 2.5			XS:0/125 leaks S:1/125 leaks M:0/125 leaks L:2/125 leaks XL:2/125 leaks Pass
ASTM D6124	Powder Content	Meet the requirements of ASTM D6124 < 2.0mg			XS:0.01 mg/glove S:0.02 mg/glove M:0.03 mg/glove L:0.01 mg/glove XL:0.02 mg/glove Pass
ASTM D412	Physical properties	Before Aging	Tensile Strength	≥14MPa	XS:15.3-16.6 S:15.6-16.3 M:15.9-17.3 L：15.3-17.2 XL:15.3-17.1 Pass
			Ultimate Elongation	≥500%	XS:525-561 S:519-565 M:515-574 L：521-562 XL:523-568 Pass
		After Aging	Tensile Strength	≥14MPa	XS:15.6-16.9 S:15.8-17.0 M：15.2-17.7 L：15.3-17.2 XL:15.0-18.7 Pass
			Ultimate Elongation	≥400%	XS:520-564 S:517-570 M：511-550 L：533-564 XL:528-569

					Pass
ASTM D6978	Chemotherapy Drugs Tested with Minimum Breakthrough Detection Time	Carmustine (BCNU) 3.3 mg/ml: 15.2 Minutes			
		Cisplatin 1.0 mg/ml: ＞ 240 Minutes			
		Cyclophosphamide (Cytoxan) 20.0 mg/ml: ＞ 240 Minutes			
		Dacarbazine (DTIC) 10.0 mg/ml:＞ 240 Minutes			
		Doxorubicin HCl 2.0 mg/ml: ＞ 240 Minutes			
		Etoposide 20.0 mg/ml: ＞ 240 Minutes			
		Fluorouracil 50.0 mg/ml: ＞240 Minutes			
		Methotrexate 25 mg/ml: ＞240 Minutes			
		Mitomycin C 0.5 mg/ml: ＞ 240 Minutes			
		Paclitaxel 6.0 mg/ml: ＞ 240 Minutes			
		Thio Tepa 10.0 mg/ml: 45.8 Minutes			
		Vincristine Sulfate 1.0 mg/ml: ＞ 240 Minutes			
ISO 10993-5	Cytotoxicity	Non-cytotoxic			Under conditions of the study, did not show potential toxicity to L-929 cells. Pass
ISO 10993-10	Irritation	Non-irritating			Under the conditions of the study, not an irritant. Pass
ISO 10993-10	Sensitization	Non-sensitizing			Under conditions of the study, not a sensitizer. Pass

9.0 Summary of Clinical Testing

Clinical testing is not needed for this device.

10.0 Conclusion

The conclusions drawn from the nonclinical tests demonstrate that the subject device, Disposable Nitrile Medical Examination Glove(Tested for Use with

Chemotherapy Drugs) is as safe, as effective, and performs as well as or better than the legally marketed predicated device under K201390.