April 21, 2022

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

Re: K220382
Trade/Device Name: Disposable Nitrile Examination Gloves (Tested for Use with Chemotherapy Drugs) - Blue/Black/Purple
Regulation Number: 21 CFR 880.6250
Regulation Name: Non-Powdered Patient Examination Glove
Regulatory Class: Class I, reserved
Product Code: LZA, LZC
Dated: January 28, 2022
Received: February 10, 2022

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,

Clarence W. Murray, III, PhD
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

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

510(k) Number *(if known)*
K220382

Device Name
Disposable Nitrile Examination Gloves (Tested for Use with Chemotherapy Drugs)- Blue/Black/Purple

Indications for Use *(Describe)*
A patient examination gloves is a disposable device intended for medical purpose that is worn on the examiner's hand or fingers to prevent contamination between patient and examiner. In addition, these gloves were tested for use with chemotherapy drugs in accordance with ASTM D6978-05 Standard Practice for Assessment of Medical gloves to Permeation by Chemotherapy Drugs.

1. The following is the resistance to permeation by chemotherapy drugs for the blue gloves.

Chemotherapy Drug	Concentration	Breakthrough Detection Time in Minutes
Carmustine	3.3 mg/ml	26.6 Minutes
Cisplatin	1.0 mg/ml	> 240 Minutes
Cyclophosphamide	20.0 mg/ml	> 240 Minutes
Dacarbazine	10.0 mg/ml	> 240 Minutes
Doxorubicin HCI	2.0 mg/ml	> 240 Minutes
Etoposide	20.0 mg/ml	> 240 Minutes
Fluorouracil	50.0 mg/ml	> 240 Minutes
Methotrexate	25.0 mg/ml	> 240 Minutes
Mitomycin C	0.5 mg/ml	> 240 Minutes
Paclitaxel	6.0 mg/ml	> 240 Minutes
ThioTepa	10.0 mg/ml	58.8 Minutes
Vincristine Sulfate	1.0 mg/ml	> 240 Minutes

Please note that the following drugs have low permeation times:
Carmustine 3.3 mg/ml 26.6 Minutes
ThioTepa 10.0 mg/ml 58.8 Minutes
Warning: Please do not use with Carmustine and ThioTepa.

2. The following is the resistance to permeation by chemotherapy drugs for the black gloves.

Chemotherapy Drug	Concentration	Breakthrough Detection Time in Minutes
Carmustine	3.3 mg/ml	27.3 Minutes
Cisplatin	1.0 mg/ml	> 240 Minutes
Cyclophosphamide	20.0 mg/ml	> 240 Minutes
Dacarbazine	10.0 mg/ml	> 240 Minutes
Doxorubicin HCI	2.0 mg/ml	> 240 Minutes
Etoposide	20.0 mg/ml	> 240 Minutes
Fluorouracil	50.0 mg/ml	> 240 Minutes
Methotrexate	25.0 mg/ml	> 240 Minutes
Mitomycin C	0.5 mg/ml	> 240 Minutes
Paclitaxel	6.0 mg/ml	> 240 Minutes
ThioTepa	10.0 mg/ml	77.8 Minutes
Vincristine Sulfate	1.0 mg/ml	> 240 Minutes

Please note that the following drugs have low permeation times:
Carmustine 3.3 mg/ml 27.3 Minutes
ThioTepa 10.0 mg/ml 77.8 Minutes
Warning: Please do not use with Carmustine and ThioTepa.

3. The following is the resistance to permeation by chemotherapy drugs for the purple gloves.

Chemotherapy Drug	Concentration	Breakthrough Detection Time in Minutes
Carmustine	3.3 mg/ml	23.5 Minutes
Cisplatin	1.0 mg/ml	> 240 Minutes
Cyclophosphamide	20.0 mg/ml	> 240 Minutes
Dacarbazine	10.0 mg/ml	> 240 Minutes
Doxorubicin HCI	2.0 mg/ml	> 240 Minutes
Etoposide	20.0 mg/ml	> 240 Minutes
Fluorouracil	50.0 mg/ml	> 240 Minutes
Methotrexate	25.0 mg/ml	> 240 Minutes
Mitomycin C	0.5 mg/ml	> 240 Minutes
Paclitaxel	6.0 mg/ml	> 240 Minutes
ThioTepa	10.0 mg/ml	56.1 Minutes
Vincristine Sulfate	1.0 mg/ml	> 240 Minutes

Please note that the following drugs have low permeation times:
Carmustine 3.3 mg/ml 23.5 Minutes
ThioTepa 10.0 mg/ml 56.1 Minutes
Warning: Please 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.

510(k) Summary

K220382

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

1.0 Submitter's Information

Name: Jiangsu Bytech Medical Supplies Co.,Ltd.
Address: NO.88 Junshi Road, Petroleum Equipment Industrial Park, Jianyang Town, Jianhu County, Yancheng City, Jiangsu Province, China
Contact: Shen Hongxing
Date of Preparation: Jan.28, 2022

Designated Submission Correspondent

Mr. Boyle Wang
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2.0 Device Information

Trade name: Disposable Nitrile Examination Gloves (Tested for Use with Chemotherapy Drugs) - Blue/Black/Purple
Common name: Patient Examination Gloves
Classification name: Non-powdered patient examination glove
Model(s): 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: Ever Growth (Vietnam) Co., Ltd.
Device: Disposable Powder Free Nitrile Examination Glove, Tested For Use With Chemotherapy Drugs, Disposable Powder Free Nitrile Examination Glove, Tested For Use With Chemotherapy

Drugs, Orange Color
510(k) number: K190860

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/black/purple colored, nitrile, and tested for use with chemotherapy drugs. The gloves are offered in six sizes: S, M, L, XL.
The subject device is non-sterile.

6.0 Indication for Use

A patient examination gloves is a disposable device intended for medical purpose that is worn on the examiner's hand or fingers to prevent contamination between patient and examiner. In addition, these gloves were tested for use with chemotherapy drugs in accordance with ASTM D6978-05 *Standard Practice for Assessment of Medical gloves to Permeation by Chemotherapy Drugs*

6.1 The following is the resistance to permeation by chemotherapy drugs for the blue gloves.

Chemotherapy Drug	Concentration	Breakthrough Detection Time in Minutes
Carmustine	3.3 mg/ml	26.6
Cisplatin	1.0 mg/ml	> 240
Cyclophosphamide	20.0 mg/ml	> 240
Dacarbazine	10.0 mg/ml	> 240
Doxorubicin HCl	2.0 mg/ml	> 240
Etoposide	20.0 mg/ml	> 240
Fluorouracil	50.0 mg/ml	> 240
Methotrexate	25.0 mg/ml	> 240
Mitomycin C	0.5 mg/ml	> 240
Paclitaxel	6.0 mg/ml	> 240
ThioTepa	10.0 mg/ml	58.8
Vincristine Sulfate	1.0 mg/ml	> 240

Please note that the following drugs have low permeation times:
Carmustine (BCNU) 3.3 mg/ml 26.6 Minutes;
Thio Tepa 10.0 mg/ml 58.8 Minutes.
Warning: Please do not use with Carmustine and ThioTepa.

6.2 The following is the resistance to permeation by chemotherapy drugs for the black gloves.

Chemotherapy Drug	Concentration	Breakthrough Detection Time in Minutes
Carmustine	3.3 mg/ml	27.3
Cisplatin	1.0 mg/ml	> 240
Cyclophosphamide	20.0 mg/ml	> 240
Dacarbazine	10.0 mg/ml	> 240
Doxorubicin HCl	2.0 mg/ml	> 240
Etoposide	20.0 mg/ml	> 240
Fluorouracil	50.0 mg/ml	> 240
Methotrexate	25.0 mg/ml	> 240
Mitomycin C	0.5 mg/ml	> 240
Paclitaxel	6.0 mg/ml	> 240
ThioTepa	10.0 mg/ml	77.8
Vincristine Sulfate	1.0 mg/ml	> 240

Please note that the following drugs have low permeation times:
Carmustine (BCNU) 3.3 mg/ml 27.3 Minutes;
Thio Tepa 10.0 mg/ml 77.8 Minutes.
Warning: Please do not use with Carmustine (BCNU) and ThioTepa.

6.3 The following is the resistance to permeation by chemotherapy drugs for the purple gloves.

Chemotherapy Drug	Concentration	Breakthrough Detection Time in Minutes
Carmustine	3.3 mg/ml	23.5
Cisplatin	1.0 mg/ml	> 240
Cyclophosphamide	20.0 mg/ml	> 240
Dacarbazine	10.0 mg/ml	> 240
Doxorubicin HCl	2.0 mg/ml	> 240
Etoposide	20.0 mg/ml	> 240
Fluorouracil	50.0 mg/ml	> 240
Methotrexate	25.0 mg/ml	> 240
Mitomycin C	0.5 mg/ml	> 240
Paclitaxel	6.0 mg/ml	> 240
ThioTepa	10.0 mg/ml	56.1

Vincristine Sulfate	1.0 mg/ml	＞ 240

Please note that the following drugs have low permeation times:
Carmustine (BCNU) 3.3 mg/ml 23.5 Minutes;
Thio Tepa 10.0 mg/ml 56.1 Minutes.
Warning: Please do not use with Carmustine (BCNU) and ThioTepa.

7.0 Technological Characteristic Comparison Table

Table1-General Comparison

Item	Subject Device (K220382)	Predicate Device (K190860)	Remark
Product Code	LZA,LZC	LZA,LZC	Same
Regulation No.	21CFR880.6250	21CFR880.6250	Same
Class	I	I	Same
Intended Use	A patient examination gloves is a disposable device intended for medical purpose that is worn on the examiner's hand or fingers to prevent contamination between patient and examiner. In addition, these gloves were tested for use with chemotherapydrugs in accordance with ASTM D6978-05 Standard Practice for Assessment of Medical gloves to Permeation by Chemotherapy Drugs.	A patient examination gloves is a disposable device intended for medical purpose that is worn on the examiner's hand or fingers to prevent contamination between patient and examiner. In addition, these gloves were tested for use with chemotherapydrugs in accordance with ASTM D6978-05 Standard Practice for Assessment 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	Single-use indication, powder free, device color, device name, glove size and quantity, Non-Sterile, a statement of standard ASTM D6978-05	Same

		compliance and a summary of the testing results.		compliance and a summary of the testing results.		
Dimensions(mm)		Length: XS/S:⩾220; M/L/XL/XXL: ⩾230; Width: S: 80±10; M: 95±10; L: 110±10; XL: 120±10.		Length: XS/S/M/L/XL: ⩾230; Width: XS:70±10; S: 80±10; M: 95±10; L: 110±10; XL: 120±10		Similar
Thickness(mm)		Finger: ⩾0.05; Palm: ⩾0.05		Finger: ⩾0.05; Palm: ⩾0.05		Same
Colorant		Blue, Black, Purple		White, Orange		Different
Physical Properties	Before Aging	Tensile Strength	14MPa, min	Tensile Strength	14MPa, min	Same
		Ultimate Elongation	500% min	Ultimate Elongation	500% min	Same
	After Aging	Tensile Strength	14MPa, min	Tensile Strength	14MPa, min	Same
		Ultimate Elongation	400%min	Ultimate Elongation	400%min	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		0.11~0.16 mg per glove, Meet the requirements of ASTM D6124		Meet the requirements of ASTM D6124		Similar
Biocompatibility		ISO 10993-10; Under the conditions of the study, not an irritant or a sensitizer		ISO 10993-10; Under the conditions of the study, not an irritant or a sensitizer		Same
		ISO 10993-5 Under conditions of the study, device extract is cytotoxic		ISO 10993-5 Under conditions of the study, device extract is not cytotoxic		/
		ISO 10993-11; Under the condition of acute systemic toxicity test, the test article did not show acute systemic toxicity in vivo.		/		/

Chemotherapy Drugs Tested with Minimum Breakthrough Detection Time as Tested per ASTM D 6978	Carmustine 3.3 mg/ml	Blue: 26.6 Minutes Black: 27.3 Minutes Purple: 23.5 Minutes	White:11.8 Minutes; Orange:31.6Minutes	Similar
	Cisplatin 1.0 mg/ml	＞240 Minutes	＞240 Minutes	Different
	Cyclophosph -amide 20.0 mg/ml	＞240 Minutes	＞240 Minutes	Same
	Dacarbazine 10.0 mg/ml	＞240 Minutes	＞240 Minutes	Same
	Doxorubicin HCl 2.0 mg/ml	＞240 Minutes	＞240 Minutes	Same
	Etoposide 20.0 mg/ml	＞240 Minutes	＞240 Minutes	Same
	Fluorouracil 50.0 mg/ml	＞240 Minutes	＞240 Minutes	Same
	Methotrexate 25.0 mg/ml	＞240 Minutes	/	Different
	Mitomycin C 0.5 mg/ml	＞240 Minutes	/	Different
	Paclitaxel 6.0 mg/ml	＞240 Minutes	＞240 Minutes	Same
	ThioTepa 10.0 mg/ml	Blue: 58.8 Minutes Black: 77.8 Minutes Purple: 56.1 Minutes	White:16.9 Minutes; Orange: 72.5 Minutes	Different
	Vincristine Sulfate 1.0 mg/ml	＞240 Minutes	/	Different

Analysis 1:
The physical dimensions are different with that of the predicate.

Analysis 2:
The color of the subject device is different with that of the predicate.

Analysis 3:
Powder Content of subject device is similar with that of the predicate.

Analysis 4:
And Breakthrough detection times of Carmustine and Thio Tepa of subject device are different with those of the predicate.

8.0 <u>Summary of Non-Clinical Testing</u>

Biocompatibility Testing

The biocompatibility evaluation for Nitrile Patient Examination Gloves (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*

ISO 10993-11:2017, *Biological evaluation of medical devices - Part 11: Tests for systemic toxicity.*

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 D6978-05 (Reapproved 2019), *Standard Practice for Assessment of Resistance of Medical Gloves to Permeation by Chemotherapy Drugs.*

Table 2 - Summary of non-clinical performance testing

Test Method	Purpose	Acceptance Criteria			Results
ASTM D6319	Physical Dimensions Test	Length(mm): S: ≥220; M/L/XL: ≥230. Width(mm): S: 80±10; M: 95±10; L: 110±10; XL: 120±10.			Length(mm): S: ≥220; M/L/XL: ≥230. Width(mm): S: 84-87/Pass M: 95-98/ Pass L: 105-109/ Pass XL:113-117/ Pass
		Finger: ≥0.05; Palm: ≥0.05			Thickness (mm): Finger: 0.10-0.12/Pass Palm: 0.07-0.09/Pass
ASTM D5151	Watertightness Test for Detection of Holes	Meet the requirements of ASTM D5151 AQL 2.5			0/125/Pass
ASTM D6124	Powder Content	Meet the requirements of ASTM D6124 < 2.0mg			0.11-0.16mg/Pass
ASTM D412	Physical properties	Before Aging	Tensile Strength	≥14MPa	15.5-35.6MPa/Pass
			Ultimate Elongation	≥500%	513-599%/Pass
		After Aging	Tensile Strength	≥14MPa	14.3-25.3MPa/Pass
			Ultimate Elongation	≥400%	484-576%/Pass
ISO	Cytotoxicity	Non- In Vitro Cytotoxicity			Under conditions of

10993-5			the study, device extract is cytotoxic.
ISO 10993-11	Cytotoxicity	Non- acute systemic toxicity	Under conditions of` the study, did not show acute systemic toxicity in vivo / Pass
ISO 10993-10	Irritation	Non-irritating	Under 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 Examination Gloves (Tested for Use with Chemotherapy Drugs) - Blue/Black/Purple is as safe, as effective, and performs as well as or better than the legally marketed predicated device under K190860.