March 26, 2022

Clover Glove Company Limited
% Manoj Zacharias
US Agent
Liberty Management Group Limited
75 Executive Drive, Suite 114
Aurora, Illinois 60504

Re: K213729
Trade/Device Name: Clover Glove Nitrile Examination Gloves Powder Free
Regulation Number: 21 CFR 880.6250
Regulation Name: Non-Powdered Patient Examination Glove
Regulatory Class: Class I
Product Code: LZA
Dated: March 02, 2022
Received: March 07, 2022

Dear Manoj Zacharias:

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,

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

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)*
K213729

Device Name

Clover Glove Nitrile Examination Gloves Powder Free

Indications for Use *(Describe)*

Clover Glove Nitrile Examination Gloves Powder Free is a disposable device intended for medical purpose that is worn on the examiner's hand to prevent contamination between patient and examiner.

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.

This section applies only to requirements of the Paperwork Reduction Act of 1995.

DO NOT SEND YOUR COMPLETED FORM TO THE PRA STAFF EMAIL ADDRESS BELOW.

The burden time for this collection of information is estimated to average 79 hours per response, including the time to review instructions, search existing data sources, gather and maintain the data needed and complete and review the collection of information. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden, to:

Department of Health and Human Services
Food and Drug Administration
Office of Chief Information Officer
Paperwork Reduction Act (PRA) Staff
PRAStaff@fda.hhs.gov

"An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB number."

1999/8 District Sriwara Village, Ladphrao 94
(Punjamit) Sriwara Rd, Plabphla,
Wang Thong Lang, Krung Thep Maha
Nakhon, TH 10240

510(k) SUMMARY (K213729)

[AS REQUIRED BY 21CFR807.92]

I. SUBMITTER

510(k) Owner's Name	Clover Glove Company Limited
Address	1999/8 District Sriwara Village, Ladphrao 94 (Punjamit), Sriwara Rd, Plabphla, Wang Thong Lang, Krung Thep Maha Nakhon, Thailand 10240
Telephone	+66 64 92 44991
Contact person	Mr.Pongsin Pongwachirint
Designation	Managing Director
Contact Email	pongsin.p@cloverglove.co.th
Date of Summary Prepared	25.03.2022

II. DEVICE

Device Trade Name	Clover Glove
Device Common Name	Nitrile Examination Gloves Powder Free
Device Classification name	Non-powdered patient examination glove
Regulation Number	21 CFR 880.6250
Class	I
Product Code	LZA

III. PREDICATE DEVICE

Predicate Device Name	Jr Medic Blue Nitrile Examination Gloves Powder Free
510(k) Number	K192333
Regulation Number	21 CFR 880.6250
Class	I
Product Code	LZA

IV. DEVICE DESCRIPTION

Clover Glove Nitrile Examination Gloves Powder Free is a Class I device bearing the product code LZA (21CFR 880.6250). They meet all the current specifications listed under the ASTM D6319 -19, Standard Specification for Nitrile Examination Gloves for Medical Application. They are made from acrylonitrile-butadiene copolymer dispersion. These gloves are blue in color having Finger Texture, Ambidextrous and are powder free. The product is non-sterile.

V. INDICATIONS OF USE

Clover Glove Nitrile Examination Gloves Powder Free is a disposable device intended for medical purpose that is worn on the examiner's hand to prevent contamination between patient and examiner.

VI. COMPARISON OF TECHNOLOGICAL CHARACTERISTICS WITH THE PREDICATE DEVICE

Table 1: General Comparison

Sl. No	Features compared	Proposed Device	Predicate Device	Result
General Information				
1.	510(k) Number	K213729	K192333	-
2.	Manufacturer	Clover Glove Company Limited	JR Engineering & Medical Technologies (M) SDN.BHD	-
3.	Classification	I	I	Same
4.	Regulation number	21 CFR 880.6250	21 CFR 880.6250	Same
5.	Product Code	LZA	LZA	Same
6.	Indication For Use	Clover Glove Nitrile Examination Gloves Powder Free is a disposable device intended for medical purpose that is worn on the examiner's hand to prevent contamination between patient and examiner.	Jr Medic Blue Nitrile Examination Gloves Powder Free are intended for medical purposes that is worn on the examiner's hands to prevent contamination between patient and examiner.	Same
7.	Material	Nitrile	Nitrile	Same
8.	Color	Blue	Blue	Same
9.	Texture	Finger Texture	Finger texture	Same
10.	Ambidextrous	Yes	Data not available	-
11.	Size	S, M, L	XS, S, M, L, XL	Similar
12.	OTC Use	Yes	Yes	Same

Sl. No	Features compared		Proposed Device	Predicate Device	Result
13.	Reusability		Single use	Single use	Same
14.	Sterility		Non- sterile	Non- sterile	Same
15.	Dimensions		Length Min 230 mm Width Min 95±10 Mm (for medium size)	Length Min 230 mm Width Min 95±10 Mm (for medium size)	Same
16.	Thickness		Palm min 0.05 mm Finger min 0.05 mm	Palm min 0.05 mm Finger min 0.05 mm	Same
17.	Physical Properties		Before Aging Tensile Strength min 14 MPa Ultimate Elongation Min 500% After Aging Tensile Strength min 14 MPa Ultimate Elongation Min 400%	Before Aging Tensile Strength min 14 MPa Ultimate Elongation Min 500% After Aging Tensile Strength min 14 MPa Ultimate Elongation Min 400%	Same
18.	Detection of Holes		Passes AQL 2.5	Passes AQL 1.5	Similar
19.	Powder Free Residue		≤2 mg/glove Max	≤2 mg/glove Max	Same
20.	Shelf Life		3 Years	Data Not Available	-
21.	Biocompatibility Study	In Vitro Cytotoxicity	Under the conditions of the study, cytotoxic. Additional testing was performed to determine if this was a systemic toxicity concern.	Under the conditions of the study, cytotoxic. Additional testing was performed to determine if this was a systemic toxicity concern.	Same
		Skin Sensitization	Under the condition of the study not a sensitizer	Under the condition of the study not a sensitizer	Same
		Skin Irritation	Under the condition of the study not an irritant	Under the condition of the study not an irritant	Same
		Acute Systemic Toxicity	Under the conditions of study, the device extracts do not pose a systemic toxicity concern	Under the conditions of study, the device extracts do not pose a systemic toxicity concern	Same
		Material Mediated Pyrogenicity	Under the conditions of the study, the device did not demonstrate a material mediated pyrogenicity response.	Under the conditions of the study, the device did not demonstrate a material mediated pyrogenicity response.	Same

VII. PERFORMANCE DATA

A. Non- Clinical Data

Performance Tests

Clover Glove Nitrile Examination Gloves Powder Free is subjected to the following performance tests according to the requirements of Guidance for Industry and FDA Staff - Medical Glove Guidance Manual and found to be safe and efficient with respect to its intended use:

- Dimension
- Physical property
- Barrier property tests
  - ➢ Detection of Holes in Medical Gloves
- Powder Free Residue

Table 2: Performance Testing Summary

SI No.	Tests	Proposed Device Actual Data			Acceptance Criteria			Result
1.	**Dimension** **Length, Width and Thickness** ASTM D6319-19 Standard Specification for Nitrile Examination Gloves for Medical Application	**Size**	**Length**	**Width**	**Size**	**Length**	**Width**	Pass
		S	245.15mm	83mm	S		80mm±10	
		M	247.1 mm	92.69 mm	M	230mm Min	95mm ±10	
		L	248.30mm	108.07mm	L		110mm ±10	
		Thickness			**Thickness**			
		Size	**Palm**	**Finger**	**Size**	**Palm**	**Finger**	
		S	0.08 mm	0.123mm	S	0.05 mm Min	0.05 mm Min	
		M	0.09 mm	0.138mm	M			
		L	0.09 mm	0.14mm	L			
2.	**Physical property** **Tensile strength and Ultimate Elongation** ASTM D6319-19 Standard Specification for Nitrile Examination Gloves for Medical Application	**Tensile strength**			**Tensile strength**			Pass
		Size	**Before Aging**	**After Aging**	**Size**	**Before Aging**	**After Aging**	
		S	30.60 MPa	30.66 MPa	S	14 MPa Min	14 MPa Min	
		M	31.72 MPa	30.80 MPa	M			
		L	37.01 MPa	35.46 MPa	L			
		Ultimate Elongation			**Ultimate Elongation**			
		Size	**Before Aging**	**After Aging**	**Size**	**Before Aging**	**After Aging**	
		S	604.61%	573.84%	S	500% Min	400% Min	
		M	575.38%	580%	M			
		L	596.92%	566.15%	L			

SI No.	Tests	Proposed Device Actual Data		Acceptance Criteria		Result
3.	**Barrier property tests Detection of Holes in Medical Gloves** ASTM D6319-19 ASTM D5151-19 Standard Test Method for Detection of Holes in Medical Gloves	AQL 2.5 for all sizes		AQL 2.5 for all sizes		Pass
4.	**Powder Free Residue** ASTM D6124-06 (Reapproved 2017) Standard Test Method for Residual Powder on Medical Gloves	**Size**	**Residual powder content**	**Size**	**Residual powder content**	Pass
		S	0.42mg	S	≤2Mg/ Glove Max	
		M	0.34mg	M		
		L	0.20mg	L		

B. Biocompatibility

The materials used in the Clover Glove Nitrile Examination Gloves Powder Free are biocompatible based on the biocompatibility tests mentioned in the Guidance for Industry and FDA Staff - Medical Glove Guidance Manual:

- In Vitro Cytotoxicity
- Skin Sensitization
- Skin Irritation
- Acute Systemic Toxicity
- Material Mediated Pyrogenicity

These tests were performed according to ISO 10993-1:2018, Biological Evaluation of Medical Devices - Part 1, Evaluation and Testing within a Risk Management Process.

Table 3: Biocompatibility Test Summary

Sl. No	Test Performed	Proposed Device	Acceptance Criteria	Result
1.	In Vitro Cytotoxicity	Under the conditions of the study, cytotoxic. Additional testing was performed to determine if this was a systemic toxicity concern.	Under the conditions of the study, non-cytotoxic.	Different
2.	Skin Sensitization	Under the conditions of the study not a sensitizer	Under the conditions of the study not a sensitizer	Pass
3.	Skin Irritation	Under the condition of study not an irritant	Under the condition of study not an irritant	Pass

4.	Acute Systemic Toxicity	Under the conditions of study, the device extracts do not pose a systemic toxicity concern	Under the conditions of study, the device extracts do not pose a systemic toxicity concern	Pass
5.	Material Mediated Pyrogenicity	Under the condition of the study, The device did not demonstrate a Material mediated pyrogenicity response	Under the conditions of the study, the device did not demonstrate a material mediated pyrogenicity response.	Pass

* Since the cytotoxic study showing positive cytotoxic response, additional testing for acute systemic toxicity is conducted to determine if this was a systemic toxicity concern and it showed that the subject glove did not induce systemic toxicity in the test animals, which demonstrated that the cytotoxicity reactivity observed is not a significant concern in clinical settings.

C. Clinical Test Data

Clinical study was not conducted as clinical data is not needed for Clover Glove Nitrile Examination Gloves Powder Free.

VIII. CONCLUSION

The conclusion drawn from the non-clinical tests demonstrate that the subject device in 510(k) submission, Clover Glove Nitrile Examination Gloves Powder free is as safe, as effective, and performs as well as or better than the legally marketed predicate device, K192333.