September 23, 2022

Guangzhou ZhengKang Medical Equipment Co., Ltd
% Riley Chen
Registration Engineer
Feiying Drug & Medical Consulting Technical Service Group
Rm 2401 ZhenYe International Center, No. 3101-90
Qianhai Road, Nanshan District
Shenzhen, Guangdong 518000
China

Re: K222204
Trade/Device Name: Medical Surgical Mask
Regulation Number: 21 CFR 878.4040
Regulation Name: Surgical Apparel
Regulatory Class: Class II
Product Code: FXX
Dated: July 5, 2022
Received: July 25, 2022

Dear Riley Chen:

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,

Brent Showalter, Ph.D.
Assistant Director
DHT6B: Division of Spinal Devices
OHT6: Office of Orthopedic 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)*
K222204

Device Name
Medical Surgical Mask

Indications for Use *(Describe)*
Medical Surgical Mask is intended to be worn to protect both patients and healthcare workers against transfer of microorganisms, body fluids and particulate materials. The Medical Surgical Mask is intended for use in infection control practices to reduce the potential exposure to blood and body fluids. This is a single use, disposable device, provided non-sterile.

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.

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510 (k) Summary

This "510(k) Summary" of 510(k) safety and effectiveness information is submitted in accordance with requirements of Title 21, CFR Section 807.92.

(1) Applicant information

510 (k) owner's name:	Guangzhou ZhengKang Medical Equipment Co.,Ltd
Address:	Room101,No.9Nanling Zhongxin Kuang Road,Taihe Town,Baiyun District,GuangZhou,China
Contact person:	Mike Wu
Phone number:	86-13600073056
Fax number:	/
Email:	info@zkmedical.com
Date of summary prepared:	2022-9-22

(2) Reason for the submission

New device, there were no prior submissions for the device.

(3) Proprietary name of the device

Trade name:	Medical Surgical Mask
Regulation Name:	Surgical apparel
Regulation number:	21 CFR 878.4040
Product code	FXX
Review panel:	General & Plastic Surgery
Regulation class:	Class II

(4) Predicate device

Sponsor	Jiangmen Ningrui Medical Supplies Co., Ltd.
Device Name	Surgical Mask (Model: WK1701-02A, WK1701-03A, WK1701-04A)
510(k) Number	K212293
Product Code	FXX
Regulation Number	21 CFR 878.4040
Regulation Class	II

(5) Description/ Design of device

Medical Surgical Mask includes 6 models, which are ZKM-U02 (Black), ZKM-U03 (Blue), ZKM-U04 (White), ZKM-U05 (Black), ZKM-U06 (Blue), ZKM-U07 (White). The Medical

Surgical Mask is a non-sterile, single use, three-layer mask with ear loops and nose piece.

These 6 models of Medical Surgical Mask share the same structure and they are manufactured with three layers, the outer and inner layers are made of polypropylene non-woven fabric, and the middle layer is made of polypropylene melt spray fabric. The Medical Surgical Mask is held in place over the user's mouth and nose by two ear loops made of polyester textured yarn. The nose piece is made of polyethylene, which allows the users to adjust the nose piece according to the shape of the bridge of the nose.

The model ZKM-U02 (Black) is Level 1 barrier as ASTM F2100 requirements.

The model ZKM-U03 (Blue) is Level 1 barrier as ASTM F2100 requirements.

The model ZKM-U04 (White) is Level 1 barrier as ASTM F2100 requirements.

The model ZKM-U05 (Black) is Level 3 barrier as ASTM F2100 requirements.

The model ZKM-U06 (Blue) is Level 3 barrier as ASTM F2100 requirements.

The model ZKM-U07 (White) is Level 3 barrier as ASTM F2100 requirements.

(6) Indications for use

Medical Surgical Mask is intended to be worn to protect both patients and healthcare workers against transfer of microorganisms, body fluids and particulate materials. The Medical Surgical Mask is intended for use in infection control practices to reduce the potential exposure to blood and body fluids. This is a single use, disposable device, provided non-sterile.

(7) Materials

Component of Device Requiring Biocompatibility	Material of Component	Body Contact Category (ISO 10993-1)	Contact Duration (ISO 10993-1)
Medical Surgical Mask, Model: ZKM-U02 (Black), ZKM-U03 (Blue), ZKM-U04 (White), ZKM-U05 (Black), ZKM-U06 (Blue), ZKM-U07 (White)	Polypropylene non-woven fabric, Polypropylene melt spray fabric, Polyester textured yarn, Polyethylene	Surface-contacting device: skin	> 24h to 30 d

The body-contacting material used in the Medical Surgical Mask have all passed biocompatibility test. Details can be seen in "Biocompatibility Discussion".

(8) Comparison to Predicate Device

Item	Proposed device	Predicate device	Remark
Trade name	Medical Surgical Mask	Surgical Mask (Model: WK1701-02A,	/

			WK1701-03A, WK1701-04A)	
510 (k) number		/	K212293	/
Regulation number		21 CFR 878.4040	21 CFR 878.4040	Same
Regulation description		Surgical apparel	Surgical apparel	Same
Product code		FXX	FXX	Same
Class		II	II	Same
Indications for use/ Intended use		Medical Surgical Mask is intended to be worn to protect both patients and healthcare workers against transfer of microorganisms, body fluids and particulate materials. The Medical Surgical Mask is intended for use in infection control practices to reduce the potential exposure to blood and body fluids. This is a single use, disposable device, provided non-sterile.	The Surgical Mask is intended to be worn to protect both the patient and healthcare personnel from the transfer of microorganisms, body fluids, and particulate material. The Surgical Mask is intended for use in infection control practices to reduce the potential exposure to blood and body fluids. This is a single-use, disposable device(s), provided non-sterile.	Same
Materials	Outer layer	Polypropylene non-woven fabric	polypropylene spunbond fabric	Similar
	Middle layer	Polypropylene melt spray fabric	polypropylene meltblown fabric	Similar
	Inner layer	Polypropylene non-woven fabric	polypropylene spunbond fabric	Similar
	Nose piece	Polyethylene	polypropylene coated galvanized iron wire	Differences, resolved by biocompatibility testing
	Ear loops	Polyester textured yarn	nylon , spandex	Differences, resolved by biocompatibility testing
Mask style		Flat pleated	Flat pleated	Same
Design feature		Ear loops	Ear loops	Same
Dimensions		17.5cm×9.5cm	17.5 cm ±5mm 9.5 cm±3mm	Similar
Color		Black, Blue, White	Blue	Differences, resolved by

			biocompatibility testing
Sterility	Non-sterile	Non-sterile	Same
Use	Single use	Single use	Same
Prescription or OTC	OTC	OTC	Same
ASTM F2100 Level	Level 1, Level 3	Level 1, Level 2, Level 3	Same
Performance test result			
Fluid resistance	Level 1: Pass at 80mmHg Level 3: Pass at 160mmHg	Level 1: Pass at 80mmHg Level 2: Pass at 120mmHg Level 3: Pass at 160mmHg	Same
Particle Filtration Efficiency	Level 1: ≥96.42% Level 3: ≥99.89%	Level 1: ≥99% Level 2: ≥99% Level 3: ≥99%	Similar
Bacterial Filtration Efficiency	Level 1: ≥99.6% Level 3: ≥99.8%	Level 1: ≥99% Level 2: ≥99% Level 3: ≥99%	Similar
Flammability Class	Class 1	Class 1	Same
Differential Pressure	Level 1: Average 3.68 mmH_2O/cm^2 Level 3: Average 3.97 mmH_2O/cm^2	Level 1: <3.4 mmH_2O/cm^2 Level 2: <3.5 mmH_2O/cm^2 Level 3: <3.4 mmH_2O/cm^2	Similar
Biocompatibility			
Cytotoxicity	Non-cytotoxic	Non-cytotoxic	Same
Irritation	Non-irritating	Non-irritating	Same
Sensitization	Non-sensitizing	Non-sensitizing	Same

(9) Non-clinical studies and tests performed

The following performance tests of Medical Surgical Mask were conducted:

Test Methodology	Purpose	Acceptance criteria	Results
Fluid Resistance Performance ASTM F1862-17	To evaluate the effectiveness of the test article in protecting the user from possible exposure to body fluids.	Level 1: 80mmHg Level 3: 160mmHg	ZKM-U02 (Black)：No penetration at 80mmHg ZKM-U03 (Blue): 31 out of 32 pass at 80mmHg ZKM-U04 (White): 31 out of 32 pass at 80mmHg ZKM-U05 (Black): No penetration at 160mmHg ZKM-U06 (Blue): 31 out of 32 pass at 160mmHg ZKM-U07 (White): 31 out of 32 pass at 160mmHg

Particulate Filtration Efficiency ASTM F2299-17	To evaluate the effectiveness of the test article in protecting the user from possible exposure to particulates.	Level 1: ⩾95% Level 3: ⩾98%	Pass, Level 1: ⩾96.42% Level 3: ⩾99.89%
Bacterial Filtration Efficiency ASTM F2101-19	To evaluate the bacterial filtration efficiency (BFE) of mask.	Level 1: ⩾95% Level 3: ⩾98%	Pass, Level 1: ⩾99.6% Level 3: ⩾99.8%
Differential Pressure (Delta P) EN 14683:2019+ AC:2019 Annex C	To measure the differential pressure of mask which is related to breathability.	Level 1: <5.0 mmH_2O/cm^2 Level 3: <6.0 mmH_2O/cm^2	Pass, Level 1: Average 3.68 mmH_2O/cm^2 Level 3: Average 3.97 mmH_2O/cm^2
Flammability 16 CFR 1610	To evaluate the flammability of mask.	Class 1	Pass, Class 1
In vitro cytotoxicity ISO 10993-5	To evaluate the biological safety of the product which has direct contact with intact skin.	The test article should not have potential toxicity to L-929 in the MTT method.	Pass. Under the conditions of this study, the test article has no potential toxicity to L-929 cells.
Skin sensitization ISO 10993-10	To evaluate the biological safety of the product which has direct contact with intact skin.	The test article should not cause delayed dermal contact sensitization in the guinea pig.	Pass. The test article showed no evidence of causing delayed dermal contact sensitization in the guinea pig
Skin irritation ISO 10993-10	To evaluate the biological safety of the product which has direct contact with intact skin.	The irritation response category in the rabbit should be negligible.	Pass. The test article has no skin irritation on rabbits.

(10) Conclusion

Based on the nonclinical tests performed, the subject device, Medical Surgical Mask, is as safe, as effective, and performs as well as the legally marketed predicate device, K212293, Surgical Mask (Model: WK1701-02A, WK1701-03A, WK1701-04A).