

October 11, 2020

0 & M Halyard, Inc Steven Dowdley Associate Director of Regulatory Affairs 5405 Windward Parkway Alpharetta, Georgia 30004

Re: K200633

Trade/Device Name: Halyard Black-Fire Powder-Free Nitrile Exam Glove tested for use with Fentanyl Citrate; Halyard Purple Nitrile Powder-Free Exam Glove tested for use with Chemotherapy Drugs and Fentanyl Citrate

Regulation Number: 21 CFR 880.6250 Regulation Name: Non-Powdered Patient Examination Glove Regulatory Class: Class I, reserved Product Code: LZA, QDO, LZC Dated: September 8, 2020 Received: September 10, 2020

Dear Steven Dowdley:

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 <a href="https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfpmn/pmn.cfm">https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfpmn/pmn.cfm</a> 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 <a href="https://www.fda.gov/combination-products/guidance-regulatory-information/postmarketing-safety-reporting-combination-products">https://www.fda.gov/combination-products/guidance-regulatory-information/postmarketing-safety-reporting-combination-products</a>); 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 <u>https://www.fda.gov/medical-devices/medical-device-safety/medical-device-reporting-mdr-how-report-medical-device-problems</u>.

For comprehensive regulatory information about medical devices and radiation-emitting products, including information about labeling regulations, please see Device Advice (<u>https://www.fda.gov/medical-devices/device-advice-comprehensive-regulatory-assistance</u>) and CDRH Learn (<u>https://www.fda.gov/training-and-continuing-education/cdrh-learn</u>). 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 (<u>https://www.fda.gov/medical-devices/device-advice-comprehensive-regulatory-assistance/contact-us-division-industry-and-consumer-education-dice</u>) for more information or contact DICE by email (<u>DICE@fda.hhs.gov</u>) or phone (1-800-638-2041 or 301-796-7100).

Sincerely,

For: CAPT Elizabeth Claverie, M.S. 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)* K200633

Device Name

Halyard Black Fire Powder-Free Nitrile Exam Glove tested with Fentanyl Citrate

Indications for Use (Describe)

The Halyard Black Fire Powder-Free Nitrile Exam Glove tested with Fentanyl Citrate is a disposable device intended for medical purposes that is worn on the examiner's hand to prevent contamination between patient and examiner.

The following drugs showed not breakthrough at 240 minutes:

Fentanyl Citrate, 100 mcg/2ml

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."

# Indications for Use

510(k) Number *(if known)* K200633

Device Name

Halyard Purple Nitrile Powder-Free Exam Glove tested with Chemotherapy Drugs and Fentanyl Citrate

Indications for Use (Describe)

The Halyard Purple Nitrile Powder-Free Exam Glove tested with Chemotherapy Drugs and Fentanyl Citrate is a disposable device intended for medical purposes that is worn on the examiner's hand to prevent contamination between patient and examiner.

The following drugs showed not breakthrough at 240 minutes: Bleomycin (15.0 mg/ml) Busulfan (6.0 mg/ml) Carboplatin (10.0 mg/ml) Cisplatin (1.0 mg/ml) Cyclophosphamide (20.0 mg/ml) Cytarabine (100.0 mg/ml) Dacarbazine (DTIC) (10.0 mg/ml) Daunorubicin (5.0 mg/ml) Docetaxel (10.0 mg/ml) Doxorubicin Hydrochloride (2.0 mg/ml) Ellence (2.0 mg/ml) Etoposide (Toposar) (20.0 mg/ml) Fludarabine (25.0 mg/ml) Fluorouracil (50.0 mg/ml) Gemcitabine (Gemzar) (38.0 mg/ml) Idarubicin (1.0 mg/ml) Ifosfamide (50.0 mg/ml) Irinotecan (20.0 mg/ml) Mechlorethamine HCl (1.0 mg/ml) Melphalan (5.0 mg/ml) Methotrexate (25.0 mg/ml) Mitomycin C (0.5 mg/ml)Mitoxantrone (2.0 mg/ml) Paclitaxel (Taxol) (6.0 mg/ml) Paraplatin (10.0 mg/ml) Rituximab (10.0 mg/ml) Trisonex (1.0 mg/ml) Vincrinstine (1mg/ml)

Fentanyl Citrate, 100 mcg/2ml

The following drugs showed breakthrough detected in less than 30 minutes: Carmustine (3.3mg/ml) 1.8 minutes and ThioTEPA (10.0mg/ml): 1.7 minutes.

Warning- Not for use with Carmustine and ThioTEPA.

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."

# 510(k) Summary

### K200633

Date Summary was Prepared:	October 10, 2020
510(k) Submitter:	Steven Dowdley Associate Director, Regulatory Affairs 505 Windward Parkway Alpharetta, GA 30004 Email: <u>steven.dowdley@hyh.com</u> Phone: 678-451-8062
Primary Contact for this 510(k):	Same as above
Device1 Trade Name:	Halyard Black-Fire Powder-Free Nitrile Exam Glove tested for use with Fentanyl Citrate
Device2 Trade Name:	Halyard Purple Nitrile Powder-Free Exam Glove tested for use with Chemotherapy Drugs and Fentanyl Citrate
Common Name:	Powder Free Nitrile Patient Examination Glove
Device1 Product Code:	LZA, QDO
Device2 Product Code:	LZC, QDO
Classification:	Class I
Regulation:	21 CFR §880.6250
Predicate Device1:	K153708 Halyard Black-Orange Powder-Free Nitrile Exam Glove
Predicate Device2:	

#### **DEVICE DESCRIPTION**

The Halyard Black-Fire Powder-Free Nitrile Exam Glove tested for use with Fentanyl Citrate is a disposable, blackcolored on the grip side and orange colored on the donning side, nitrile, powder- free, textured fingertip, ambidextrous, non-sterile patient examination glove that are chlorinated on the donning side and are packed in a cardboard dispenser box.

The Halyard Purple Nitrile Powder-Free Exam Glove tested for use with Chemotherapy Drugs and Fentanyl Citrate is a disposable, nitrile, powder-free, textured fingertip, ambidextrous, non-sterile patient examination gloves that are chlorinated on the donning side and are packed in a cardboard dispenser box.

#### **INTENDED USE**

The Halyard Black-Fire Powder-Free Nitrile Exam Glove tested for use with Fentanyl Citrate is a disposable device intended for medical purposes that is worn on the examiner's hand to prevent contamination between patient and examiner.

The Halyard Purple Nitrile Powder-Free Exam Glove tested for use with Chemotherapy Drugs and Fentanyl Citrate is a disposable device intended for medical purposes that is worn on the examiner's hand to prevent contamination between patient and examiner.

### COMPARISON OF TECHNOLOGICAL CHARACTERISTICS

	Subject Device1 K200633	Predicate Device1 K153708	Remarks
Product Code	LZA, QDO	LZA	Different
Classification	Class 1	Class 1	Same
Trade Name	•	Halyard Black-Orange Powder-Free Nitrile Exam Glove	Similar
Indications for Use	The Halyard Black-Fire Powder-Free Nitrile Exam Glove tested for use with Fentanyl Citrate is a disposable device intended for medical purposes that is worn on the examiner's hand to prevent contamination between patient and examiner. The following drugs showed no breakthrough at 240 minutes: Fentanyl Citrate, 100 cg/2ml	The Halyard <sup>®</sup> Black-Orange Powder-Free Nitrile Exam Glove is a disposable device intended for medical purposes that is worn on the examiner's hand to prevent contamination between patient and examiner.	Similar
Technological Characteristics	Black on the grip side, orange on the donning side, nitrile, powder- free, textured fingertip, ambidextrous, non- sterile patient examination glove.	Black on the grip side, orange on the donning side, nitrile, powder- free, textured fingertip, ambidextrous, non- sterile patient examination glove.	Same
Sterilization	Gloves are supplied non-sterile	Gloves are supplied non-sterile	Same
ISO 10993-10 Biological evaluation of medical devices - Tests for Irritation	Acceptance criteria: No erythema/edema up to 72 hours post exposure. Result: Erythema/edema was negligible. Meets acceptance criteria. PASS	Acceptance criteria: No erythema/edema up to 72 hours post exposure. Result: Erythema/edema was negligible. Meets acceptance criteria. PASS	Same
ISO 10993-10 Biological evaluation of medical devices -Tests for Skin Sensitization	Acceptance criteria: No evidence of delayed dermal contact sensitivity at 24 and 48 hours post injection. Result: Not a sensitizer under conditions of the study. Meets acceptance criteria. PASS		Same
ISO 10993 Biological evaluation of medical devices – Tests for Systemic Toxicity	Acceptance criteria: No signs of systemic toxicity up to 72 hours post injection. Result: No systemic toxicity observed. Meets acceptance criteria. PASS	Acceptance criteria: No signs of systemic toxicity up to 72 hours post injection. Result: No systemic toxicity observed. Meets acceptance criteria. PASS	Same

# Table 1 comparison between the predicate Device 1 and subject Device 1

# Table 2 comparison between the predicate Device2 and subject Device2

	Subject Device2 K200633	Predicate Device2 K101596	Remarks
Product Code	LZC, QDO	LZC	Different
Classification	Class 1	Class 1	Same
Trade Name	Halyard Purple Nitrile Powder-Free Exam Glove tested for use with Chemotherapy Drugs and Fentanyl Citrate	Kimberly-Clark PURPLE Nitrile Powder-Free Exam Glove with Tested for Use with Chemotherapy Drugs Labeling Claim	Similar
Indications for Use	Halyard Purple Nitrile Powder-Free Exam Glove tested for use with	A powder-free patient examination glove is a disposable device intended for	Similar

160 10002 10	Acceptones evitories Ne evidence of	Assessments and antitation Nie avridance of	Carras
ISO 10993-10	Acceptance criteria: No evidence of	Acceptance criteria: No evidence of	Same
Biological evaluation of	delayed dermal contact sensitivity at	delayed dermal contact sensitivity at 24	
medical devices -Tests	24 and 48 hours post injection. Result:	and 48 hours post injection. Result: Not a	
for Skin	Not a sensitizer under conditions of	sensitizer under conditions of the study.	
Sensitization	the study. Meets acceptance criteria.	Meets acceptance criteria. PASS	
	PASS	Weels deceptance entend. 17.55	
ISO 10993 Biological		Acceptance criteria: No signs of systemic	Same
evaluation of medical	systemic toxicity up to 72 hours post	toxicity up to 72 hours post injection.	
devices – Tests for	injection. Result: No systemic toxicity	Result: No systemic toxicity observed.	
	observed. Meets acceptance criteria.	Meets acceptance criteria. PASS	
· ·	•		
	PASS		

# SUMMARY OF NON-CLINICAL PERFORMANCE TESTING

Subject Device1, Halyard Black-Fire Powder-Free Nitrile Exam Glove tested for use with Fentanyl Citrate and subject Device2, Halyard Purple Nitrile Powder-Free Exam Glove tested for use with Chemotherapy Drugs and Fentanyl Citrate were both tested for conformance to the applicable sections of the following standards:

- ASTM D5151-06 Standard Test Method for Detection of Holes in Medical Gloves
- ASTM D6319-10 Standard Specification for Nitrile Examination Gloves for Medical Applications
- ASTM D6124-06 Standard Test Method for Residual Powder on Medical Gloves
- ASTM D 6978-05 Standard Practice for Assessment of Resistance of Medical Gloves to Permeation by Chemotherapy Drugs
- ISO 10993-10 Biological evaluation of medical devices -Tests for Irritation and Skin Sensitization
- ISO 10993-11 Biological evaluation of medical devices Tests for Systemic Toxicity.

Performance	K200633			K153708			Remarks
	Subject Device1 The Halyard Black-Fire			Predicate Device1 Halyard Black-Orange			
	Powder-Free	e Nitrile Exam (	Glove tested	Powder-Fre	e Nitrile Exam (	Glove	
	for use with	Fentanyl Citrat	te				
ASTM D5151-06 Standard Test Method for Detection of Holes in Medical Gloves	device shows it meets the 2.5 AQL requirement in the standards for leakage. The device meets the acceptance criteria of the standard. PASS			device shows it meets the 2.5 AQL requirement in the standards for leakage. The device meets the acceptance criteria of the standard. PASS			Same
ASTM D6319	Properties	Test results	ASTM SPEC	Properties	Test results	ASTM SPEC	Same
Standard	Holes	AQL 1.0%	AQL 2.5%	Holes	AQL 1.0%	AQL 2.5%	
Specification for	Length	230-258mm	>230mm	Length	230-258mm	>230mm	
Nitrile Examination	Width	85-105mm	85-105mm	Width	85-105mm	85-105mm	
Gloves for Medical	Palm	.05-07mm	>.050mm	Palm	.0507mm	>.050mm	
Applications	Unaged Tensile	>16MPa	>14MPa	Unaged Tensile	>16MPa	>14MPa	
	Unaged Elongation	> 500%	> 500%	Unaged Elongation	> 500%	> 500%	
	Aged Tensile	>15MPa	>14MPa	Aged Tensile	>15MPa	>14MPa	
	Aged Elongation	>450%	>400%	Aged Elongation	>450%	>400%	
	Powder	<2mg/glove	<2mg/glove	Powder	<2mg/glove	<2mg/glove	
ASTM D 6978	The following drugs showed no			Not applicable		Different,	
Standard Practice for							adding
Assessment of							Fentanyl
Resistance of Medical Gloves to	Fentanyl Citrate, 100 mcg/2ml						Citrate

#### Table 3. Non-clinical performance testing for the subject Device1 compared to Predicate device 1

Permeation by Chemotherapy Drugs			
ASTM D6124	Residual powder on the subject device is	Residual powder on the subject device is	Same
Standard Test	within the powder-free limit of < 2 mg	within the powder-free limit of < 2 mg	
Method for	maximum powder per glove and meets	maximum powder per glove and meets	
Residual Powder on	the acceptance criteria for powder-free.	the acceptance criteria for powder-free.	
Medical Gloves	PASS	PASS	

# Table 4. Non-clinical Performance testing for the subject Device2 compared to Predicate device 2

Performance		K200633		K101596			Remarks	
renomance	Subject Device2 Halyard Purple Nitrile			Predicate Device2 Kimberly-Clark PURPLE			INCITION NO	
	Powder-Free Exam Glove tested for use			Nitrile Powder-Free Exam Glove with				
	with Chemotherapy Drugs and Fentanyl Citrate			Labeling Cla	Tested for Use with Chemotherapy Drugs			
ASTM D5151-06		s it meets the	25 401		rs it meets the 2.	5 4 01	Como	
Standard Test		t in the standa			t in the standard		Same	
Method for	leakage. The	e device meets	the		e device meets t			
Detection of		criteria of the	standard.	criteria of th	e standard.	-		
Holes in Medical Gloves	PASS			PASS				
ASTM D6319	Properties	Test results	ASTM SPEC	Properties	Test results	ASTM SPEC	Same	
Standard	Holes	AQL 1.0%	AQL 2.5%	Holes	AQL 1.0%	AQL 2.5%		
Specification for	Length	230-258mm	>230mm	Length	230-258mm	>230mm		
Nitrile Examination	Width	85-105mm	85-105mm	Width	85-105mm	85-105mm		
Gloves for Medical	Palm	.0507mm	>.050mm	Palm	.0507mm	>.050mm		
Applications	Unaged	>16MPa	>14MPa	Unaged	>16MPa	>14MPa		
	Tensile			Tensile				
	Unaged	> 500%	> 500%	Unaged	> 500%	> 500%		
	Elongation			Elongation				
	Aged	>15MPa	>14MPa	Aged	>15Ma	>14MPa		
	Tensile			Tensile				
	Aged	>450%	>400%	Aged	>450%	>400%		
	Elongation			Elongation				
	Powder	<2mg/glove	<2mg/glove	Powder	<2mg/glove	<2mg/glove		
ASTM D 6978	The followir	ng drugs showe	ed no	The following drugs showed no			Similar,	
Standard Practice	breakthroug	gh at 240 minu	tes:	breakthrough at 240 minutes:			adding	
for Assessment of	Fentanyl Cit	rate, 100 cg/2r	nl	Bleomycin (15.0 mg/ml)			Fentanyl	
Resistance of		15.0 mg/ml)		Busulfan (6.			Citrate	
Medical Gloves to	Busulfan (6.			Carboplatin (10.0 mg/ml)				
Permeation by		(10.0 mg/ml)		Cisplatin (1.0 mg/ml)				
Chemotherapy	Cisplatin (1.			Cyclophosphamide (20.0 mg/ml)				
Drugs		hamide (20.0 n	ng/ml)	Cytarabine (100.0 mg/ml)				
0	Cytarabine (100.0 mg/ml) Dacarbazine (DTIC) (10.0 mg/ml)		Dacarbazine (DTIC) (10.0 mg/ml)					
				n (5.0 mg/ml)				
		in (5.0 mg/ml)		Docetaxel (10.0 mg/ml) Doxorubicin				
	Docetaxel (10.0 mg/ml) Doxorubicin Hydrochloride (2.0 mg/ml)			Hydrochloride (2.0 mg/ml) Ellence (2.0 mg/ml)				
	Ellence (2.0	0, ,	( .).	Etoposide (Toposar) (20.0 mg/ml)				
		Foposar) (20.0	mg/ml)	Fludarabine (25.0 mg/ml)				
		(25.0 mg/ml)		Fluorouracil (50.0 mg/ml) Gemcitabine				
	Fluorouraci	(50.0 mg/ml)	Gemcitabine					
				Idarubicin (1	1.0 mg/ml)			

	(Gemzar) (38.0mg/ml) Idarubicin (1.0 mg/ml) Ifosfamide (50.0 mg/ml) Irinotecan (20.0 mg/ml) Mechlorethamine HCl (1.0 mg/ml) Melphalan (5.0 mg/ml) Methotrexate (25.0mg/ml) Mitomycin C (0.5 mg/ml) Mitoxantrone (2.0mg/ml) Paclitaxel (Taxol) (6.0 mg/ml) Paraplatin (10.0 mg/ml) Rituximab (10.0 mg/ml) Trisonex (1.0 mg/ml) Vincrinstine (1mg/ml)	Ifosfamide (50.0 mg/ml) Irinotecan (20.0 mg/ml) Mechlorethamine HCl (1.0 mg/ml) Melphalan (5.0 mg/ml) Methotrexate (25.0 mg/ml) Mitomycin C (0.5 mg/ml) Mitoxantrone (2.0mg/ml) Paclitaxel (Taxol) (6.0mg/ml) Paraplatin (10.0 mg/ml) Rituximab (10.0 mg/ml) Trisonex (1.0 mg/ml) Vincrinstine (1mg/ml)	
ASTM D6124 Standard Test Method for Residual Powder on Medical Gloves	Residual powder on the subject device is within the powder-free limit of < 2 mg maximum powder per glove and meets the acceptance criteria for powder-free. PASS	Residual powder on the subject device is within the powder-free limit of < 2 mg maximum powder per glove and meets the acceptance criteria for powder-free. PASS	Same

### CONCLUSION

The conclusion drawn from the nonclinical tests demonstrates that the subject Device1 in 510(K) submission K200633, the Halyard Black-Fire Powder-Free Nitrile Exam Glove tested for use with Fentanyl Citrate is as safe, as effective, and performs as well as or better than the legally marketed predicate device cleared under K153708;

The conclusion drawn from the nonclinical tests demonstrates that the subject Device2 in 510(K) submission K200633, Halyard Purple Nitrile Powder-Free Exam Glove tested for use with Chemotherapy Drugs and Fentanyl Citrate is as safe, as effective, and performs as well as or better than the legally marketed predicate device cleared under K101596.