



Food and Drug Administration
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September 6, 2016

Haylard Health
Gwendolyn George
Regulatory Affairs, Technical Leader
5405 Windward Parkway
Alpharetta, Georgia 30004

Re: K160709

Trade/Device Name: HAYLARD* PURPLE NITRILE – XTRA* Powder Free Exam
Gloves

Regulation Number: 21 CFR 880.6250

Regulation Name: Patient Examination Glove

Regulatory Class: I

Product Code: LZC

Dated: August 3, 2016

Received: August 4, 2016

Dear Ms. Gwendolyn George:

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. 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); good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820); and if applicable, the electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR 1000-1050.

If you desire specific advice for your device on our labeling regulation (21 CFR Part 801), please contact the Division of Industry and Consumer Education at its toll-free number (800) 638-2041 or (301) 796-7100 or at its Internet address

<http://www.fda.gov/MedicalDevices/ResourcesforYou/Industry/default.htm>. 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

<http://www.fda.gov/MedicalDevices/Safety/ReportaProblem/default.htm> for the CDRH's Office of Surveillance and Biometrics/Division of Postmarket Surveillance.

You may obtain other general information on your responsibilities under the Act from the Division of Industry and Consumer Education at its toll-free number (800) 638-2041 or (301) 796-7100 or at its Internet address

<http://www.fda.gov/MedicalDevices/ResourcesforYou/Industry/default.htm>.

Sincerely yours,

Michael J. Ryan -S

for Tina Kiang, Ph.D.

Acting Director

Division of Anesthesiology,

General Hospital, Respiratory,

Infection Control, and Dental Devices

Office of Device Evaluation

Center for Devices and Radiological Health

Enclosure

Indications for Use

510(k) Number (if known)
K160709

Device Name
HALYARD* PURPLE NITRILE - XTRA* Powder Free Exam Gloves

Indications for Use (Describe)

HALYARD* PURPLE NITRILE - XTRA* Powder Free Exam Gloves tested for Use with Chemotherapy Drugs are powder-free patient examination gloves that are a disposable device intended for medical purposes worn on the examiner's hand or finger to prevent contamination between patient and examiner. This is an over the counter medical device. The HALYARD* PURPLE NITRILE - XTRA* Powder Free Exam Gloves have been tested with the following Chemotherapy drugs showing no breakthrough up to 240 minutes. Carmustine showed breakthrough at 80.4 minutes

Chemotherapy Drug (conc.)	Break-through Time (mins)	Chemotherapy Drug (conc.)	Break-through Time (mins)	Chemotherapy Drug (conc.)	Break-through Time (mins)
Arsenic Trioxide (1 mg/ml)	> 240	Doxorubicin HCl (2 mg/ml)	> 240	Paraplatin (10 mg/ml)	> 240
Azacitidine (Vidaza) (25 mg/ml)	> 240	Elenace (2 mg/ml)	> 240	Pemetrexed (25 mg/ml)	> 240
Bendamustine (5 mg/ml)	> 240	Eribulin Mesylate (0.5 mg/ml)	> 240	Pertuzumab (30 mg/ml)	> 240
Bleomycin sulfate (15 mg/ml)	> 240	Etoposid (20 mg/ml)	> 240	Raltitrexed (0.5 mg/ml)	> 240
Bortezomib (Velcade) (1 mg/ml)	> 240	Fludarabine (25 mg/ml)	> 240	Retrovir (10 mg/ml)	> 240
Busulfan (6 mg/ml)	> 240	Fulvestrant (50 mg/ml)	> 240	Rituximab (10 mg/ml)	> 240
Carfilzomib (2 mg/ml)	> 240	Fluorouracil (50 mg/ml)	> 240	Temsirolimus (25 mg/ml)	> 240
Carboplatin (10 mg/ml)	> 240	Gemcitabine (38 mg/ml)	> 240	ThioTEPA (10 mg/ml)	> 240
Carmustine (3.3 mg/ml)	80.4	Idarubicin (1 mg/ml)	> 240	Topotecan HCl (1 mg/ml)	> 240
Cetuximab (Erbix) (2 mg/ml)	> 240	Ifosfamide (50 mg/ml)	> 240	Trastuzumab (21 mg/ml)	> 240
Cisplatin (1 mg/ml)	> 240	Irinotecan (20 mg/ml)	> 240	Triclosan (1 mg/ml)	> 240
Cyclophosphamide (20 mg/ml)	> 240	Mechlorethamine HCl (1 mg/ml)	> 240	Trisenox (0.1 mg/ml)	> 240
Cytarabine HCl (100 mg/ml)	> 240	Melphalan (5 mg/ml)	> 240	Vinblastine (1 mg/ml)	> 240
Cytovene (10 mg/ml)	> 240	Methotrexate (25 mg/ml)	> 240	Vincristine Sulfate (1 mg/ml)	> 240
Dacarbazine (10 mg/ml)	> 240	Mitomycin (0.5 mg/ml)	> 240	Vinorelbine (10 mg/ml)	> 240
Danorubicin HCl (5 mg/ml)	> 240	Mitoxantrone (2 mg/ml)	> 240	Zoledronic Acid (0.8 mg/ml)	> 240
Decitabine (5 mg/ml)	> 240	Oxaliplatin (2mg/ml)	> 240		
Docetaxel (10 mg/ml)	> 240	Paclitaxel (6 mg/ml)	> 240		

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

Date Summary was Prepared:	September 6, 2016
510(k) Submitter:	Gwendolyn George Technical Leader, Regulatory Affairs Halyard Health 5405 Windward Parkway Alpharetta, GA 30004 Email: Gwendolyn.George@hyh.com Ph: 520-204-6442 Establishment Registration Number 3011270181
Primary Contact for this 510(k) Submission:	Gwendolyn George Technical Leader, Regulatory Affairs Halyard Health 5405 Windward Parkway Alpharetta, GA 30004 Email: Gwendolyn.George@hyh.com Ph: 520-204-6442
Device Trade Name:	HALYARD* PURPLE NITRILE – XTRA* Powder-Free Exam Gloves
Device Common Name:	Medical Exam Gloves
Device Product Code and Classification Name:	LZC Class I, 21 CFR §880.6250 Patient Examination Glove, Specialty
Predicate Device:	K113423 Kimberly-Clark PURPLE NITRILE –XTRA* Powder-Free Exam Glove tested for use with chemotherapy drugs – 12” Length
Subject Device Description:	HALYARD* PURPLE NITRILE – XTRA* Powder-Free Exam Gloves are 12” disposable, purple-colored, nitrile, powder-free, textured fingertip, ambidextrous, non-sterile patient examination gloves that have been tested for use with chemotherapy drugs.
Intended Use:	HALYARD* PURPLE NITRILE – XTRA* Powder-Free Exam Gloves tested for use with Chemotherapy Drugs are powder-free patient examination gloves that are a disposable device intended for medical purposes worn on the examiner’s hand or finger to prevent contamination between patient and examiner. This is an over the counter medical device. The HALYARD* PURPLE NITRILE – XTRA* Powder-Free Exam Gloves have been tested with the following Chemotherapy drugs showing no breakthrough up to 240 minutes. Carmustine showed break through at 80.4 minutes.

Halyard Health
510(k) for the HALYARD* PURPLE NITRILE – XTRA* Powder-Free Exam Gloves`

ChemoTherapy Drug (conc.)	Break-through Time (mins)	ChemoTherapy Drug (conc.)	Break-through Time (mins)	ChemoTherapy Drug (conc.)	Break-through Time (mins)
Arsenic Trioxide (1 mg/ml)	> 240	Doxorubicin HCl (2 mg/ml)	> 240	Paraplatin (10 mg/ml)	> 240
Azacitidine (Vidaza) (25 mg/ml)	> 240	Ellence (2 mg/ml)	> 240	Pemetrexed (25 mg/ml)	> 240
Bendamustine (5 mg/ml)	> 240	Eribulin Mesylate (0.5 mg/ml)	> 240	Pertuzumab (30 mg/ml)	> 240
Bleomycin sulfate (15 mg/ml)	> 240	Etoposid (20 mg/ml)	> 240	Raltitrexed (0.5 mg/ml)	> 240
Bortezomib (Velcade) (1 mg/ml)	> 240	Fludarabine (25 mg/ml)	> 240	Retrovir (10 mg/ml)	> 240
Busulfan (6 mg/ml)	> 240	Fulvestrant (50 mg/ml)	> 240	Rituximab (10 mg/ml)	> 240
Carfilzomib (2 mg/ml)	> 240	Fluorouracil (50 mg/ml)	> 240	Temsirolimus (25 mg/ml)	> 240
Carboplatin (10 mg/ml)	> 240	Gemcitabine (38 mg/ml)	> 240	ThioTEPA (10 mg/ml)	> 240
Carmustine (3.3 mg/ml)	80.4	Idarubicin (1 mg/ml)	> 240	Topotecan HCl (1 mg/ml)	> 240
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Dacarbazine (10 mg/ml)	> 240	Mitomycin (0.5 mg/ml)	> 240	Vinorelbine (10 mg/ml)	> 240
Daunorubicin Hcl (5 mg/ml)	> 240	Mitoxantrone (2 mg/ml)	> 240	Zoledronic Acid (0.8 mg/ml)	> 240
Decitabine (5 mg/ml)	> 240	Oxaliplatin (2mg/ml)	> 240		
Docetaxel (10 mg/ml)	> 240	Paclitaxel (6 mg/ml)	> 240		

(Note within 510(k) Summary only: The difference between the subject and predicate devices' indications for use do not affect substantial equivalence.)

Summary of Technologies:

The technological characteristics and intended use of the subject and predicate device are substantially equivalent. The subject device is increased in thickness. This change resulted in improved Carmustine permeation time of 80.4 minutes at a 3.3 mg/ml concentration and expanded chemotherapy drug resistance claim to 23 additional drugs as reflected in the table below.

Halyard Health
510(k) for the HALYARD* PURPLE NITRILE – XTRA* Powder-Free Exam Gloves`

F	Subject Device	Predicate Device K113423	Substantially Equivalent
FDA Product Code	LZC	LZC	Yes
FDA Classification	Class 1	Class 1	Yes
Common Name	Medical Exam Glove	Medical Exam Glove	Yes
Device Trade Name	HALYARD* PURPLE NITRILE – XTRA* Powder-Free Exam Gloves	Kimberly-Clark Purple Nitrile-XTRA Powder-Free Exam Gloves – 12” Length	Yes
Intended Use	HALYARD* PURPLE NITRILE – XTRA* Powder-Free Exam Gloves are 12” in length, a disposable device intended for medical purposes that is worn on the examiner's hand and finger to prevent contamination between patient and examiner.	The Kimberly-Clark Purple Nitrile- XTRA Powder-Free Exam Glove tested for use with chemotherapy drugs -12” Length is a disposable device intended for medical purposes that is worn on the examiner's hand or finger to prevent contamination between patient and examiner.	Yes
Technological Characteristics	Purple colored, chlorinated, nitrile, powder-free, textured fingertip, ambidextrous, non - sterile patient examination glove.	Purple colored, chlorinated, nitrile, powder-free, textured fingertip, ambidextrous, non- sterile patient examination glove.	Yes
Performance Data			
ASTM D6978-05 Standard Practice for Assessment of Resistance of Medical Gloves to Permeation by Chemotherapy Drugs	Acceptance criteria: No signs of breakthrough after 4 hours. Carmustine showed no signs of breakthrough after 80.4 minutes Result: No breakthrough observed. Meets acceptance criteria. PASS	Acceptance criteria: No signs of breakthrough after 4 hours. Carmustine showed no signs of breakthrough after 30.7 minutes Result: No breakthrough observed. Meets acceptance criteria. PASS	Yes
ASTM D5151-06 Standard Test Method for Detection of Holes in Medical Gloves	Testing of the subject device shows it meets the 2.5% AQL requirement in the standards for leakage. The device meets the acceptance criteria of the standard. PASS	Testing of the subject device shows it meets the 2.5% AQL requirement in the standards for leakage. The device meets the acceptance criteria of the standard. PASS	Yes
ASTM D6124-06 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	Yes

Halyard Health
510(k) for the HALYARD* PURPLE NITRILE – XTRA* Powder-Free Exam Gloves`

	Subject Device	Predicate Device K113423	Substantially Equivalent																																																																				
Performance Data ASTM D6319-10 Standard Specification for Nitrile Examination Gloves for Medical Applications	The physical dimensions of the subject device are within the limits of the standard and the physical properties of the subject device meet the requirements for tensile strength and elongation in the standard. Therefore the device meets the acceptance criteria of the standard. PASS	The physical dimensions of the subject device are within the limits of the standard and the physical properties of the subject device meet the requirements for tensile strength and elongation in the standard. Therefore the device meets the acceptance criteria of the standard. PASS	Yes																																																																				
				<table><tr><th>Property</th><th>ASTM</th><th>Halyard Specification</th></tr><tr><td>Holes</td><td>AQL 2.5%</td><td>AQL 1.0%</td></tr><tr><td>Length</td><td>≥230 mm</td><td>295-325 mm</td></tr><tr><td>Width</td><td>85-105mm</td><td>85-105mm</td></tr><tr><td>Finger Thickness</td><td>≥0.05mm</td><td>0.11- 0.19mm</td></tr><tr><td>Palm Thickness</td><td>≥0.05mm</td><td>0.11 -0.16mm</td></tr><tr><td>Unaged Tensile</td><td>≥14 MPa</td><td>≥14 MPa</td></tr><tr><td>Unaged Elongation</td><td>≥500%</td><td>≥500%</td></tr><tr><td>Aged Tensile</td><td>≥14 MPa</td><td>≥14 MPa</td></tr><tr><td>Aged Elongation</td><td>≥400%</td><td>≥500%</td></tr><tr><td>Powder</td><td>≤2mg/glove</td><td>≤2mg/glove</td></tr></table>	Property	ASTM	Halyard Specification	Holes	AQL 2.5%	AQL 1.0%	Length	≥230 mm	295-325 mm	Width	85-105mm	85-105mm	Finger Thickness	≥0.05mm	0.11- 0.19mm	Palm Thickness	≥0.05mm	0.11 -0.16mm	Unaged Tensile	≥14 MPa	≥14 MPa	Unaged Elongation	≥500%	≥500%	Aged Tensile	≥14 MPa	≥14 MPa	Aged Elongation	≥400%	≥500%	Powder	≤2mg/glove	≤2mg/glove	<table><tr><th>Property</th><th>ASTM</th><th>Kimberly Clark Specification</th></tr><tr><td>Holes</td><td>AQL 2.5%</td><td>AQL 1.0%</td></tr><tr><td>Length</td><td>≥230 mm</td><td>295 -325 mm</td></tr><tr><td>Width</td><td>85-105mm</td><td>85-105mm</td></tr><tr><td>Finger Thickness</td><td>≥0.05mm</td><td>0.10- 0.19mm</td></tr><tr><td>Palm Thickness</td><td>≥0.05mm</td><td>0.10 -0.16mm</td></tr><tr><td>Unaged Tensile</td><td>≥14 MPa</td><td>≥14 MPa</td></tr><tr><td>Unaged Elongation</td><td>≥500%</td><td>≥500%</td></tr><tr><td>Aged Tensile</td><td>≥14 MPa</td><td>≥14 MPa</td></tr><tr><td>Aged Elongation</td><td>≥400%</td><td>≥500%</td></tr><tr><td>Powder</td><td>≤2mg/glove</td><td>≤2mg/glove</td></tr></table>	Property	ASTM	Kimberly Clark Specification	Holes	AQL 2.5%	AQL 1.0%	Length	≥230 mm	295 -325 mm	Width	85-105mm	85-105mm	Finger Thickness	≥0.05mm	0.10- 0.19mm	Palm Thickness	≥0.05mm	0.10 -0.16mm	Unaged Tensile	≥14 MPa	≥14 MPa	Unaged Elongation	≥500%	≥500%	Aged Tensile	≥14 MPa	≥14 MPa	Aged Elongation	≥400%	≥500%	Powder	≤2mg/glove	≤2mg/glove
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ISO 10993-10 Biological evaluation of medical devices -Tests for Irritation	Based on an evaluation according to ISO 10993-1, it was determined that no additional testing on the subject glove was needed.	The Kimberly Clark specifications listed above conform to or exceed the ASTM D6319 Standard Specification.	Acceptance criteria: No erythema/ edema up to 72 hours post exposure. Result: Erythema/edema was negligible. Meets acceptance criteria. PASS																																																																				
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																																																																			
ISO 10993-11 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																																																																			
Conclusion	The performance data support the conclusion that the subject device is as safe, as effective, and performs as well as the legally marketed device that was submitted and cleared under K113423.																																																																						

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510(k) for the HALYARD* PURPLE NITRILE – XTRA* Powder-Free Exam Gloves`

The HALYARD* PURPLE NITRILE – XTRA* Powder-Free Exam Gloves were tested for use with the following drug concentrations per ASTM D6978-05. All study results were acceptable.

The following drugs had NO breakthrough detected up to 240 minutes:

Additional Chemotherapeutic Drugs tested	Drug Concentration	Chemotherapeutic Drugs Listed on Predicate labeling	Drug Concentration
Arsenic Trioxide	1 mg/ml	Bleomycin sulfate	15 mg/ml
Azacitidine (Vidaza)	25 mg/ml	Busulfan	6 mg/ml
Bendamustine	5 mg/ml	Carboplatin	10 mg/ml
Bortezomib (Velcade)	1 mg/ml	Cisplatin	1 mg/ml
Carfilzomib	2 mg/ml	Cyclophosphamide	20 mg/ml
Cetuximab (Erbix)	2 mg/ml	Cytarabine HCl	100 mg/ml
Cytovene	10 mg/ml	Dacarbazine	10 mg/ml
Decitabine	5 mg/ml	Daunorubicin Hcl	5 mg/ml
Eribulin Mesylate	0.5 mg/ml	Docetaxel	10 mg/ml
Fulvestrant	50 mg/ml	Doxorubicin HCl	2 mg/ml
Oxaliplatin	2mg/ml	Ellence	2 mg/ml
Paraplatin	10 mg/ml	Etoposide	20 mg/ml
Pemetrexed	25 mg/ml	Fludarabine	25 mg/ml
Pertuzumab	30 mg/ml	Fluorouracil	50 mg/ml
Raltitrexed	0.5 mg/ml	Gemcitabine	38 mg/ml
Retrovir	10 mg/ml	Idarubicin	1 mg/ml
Temsirolimus	25 mg/ml	Ifosfamide	50 mg/ml
Topotecan HCl	1 mg/ml	Irinotecan	20 mg/ml
Trastuzumab	21 mg/ml	Mechlorethamine HCl	1 mg/ml
Triclosan	1 mg/ml	Melphalan	5 mg/ml
Vinblastine	1 mg/ml	Methotrexate	25 mg/ml
Vinorelbine	10 mg/ml	Mitomycin	0.5 mg/ml
Zoledronic Acid	0.8 mg/ml	Mitoxantrone	2 mg/ml
		Paclitaxel	6 mg/ml
		Rituximab	10 mg/ml
		ThioTEPA	10 mg/ml
		Trisenox	0.1 mg/ml
		Vincristine Sulfate	1 mg/ml

Carmustine was retested on the subject device with breakthrough detected in 80.4 minutes at a concentration of 3.3 mg/ml. The predicate device had breakthrough detected at 30.7 minutes.

Technological Characteristics and Substantial Equivalence:

The HALYARD* PURPLE NITRILE – XTRA* Powder-Free Exam Gloves is substantially equivalent to the predicate device, Kimberly-Clark Purple Nitrile-XTRA Powder-Free Exam Gloves tested for use with chemotherapy drugs (K113423). We are submitting this 510(k) for clearance of expanded chemotherapy drug claim on the product labeling based on testing in accordance with ASTM D6978-05 for chemical permeation to twenty three (23) additional chemotherapy drugs with improved permeation to Carmustine. The test results demonstrate no new issues of safety and efficacy.

Summary of Testing:

These gloves have been tested for conformance to the applicable sections of the following standards:

ASTM D6978-05 Standard Practice for Assessment of Resistance of Medical Gloves to Permeation by Chemotherapy Drugs

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

ALL RESULTS OF TESTING MET ACCEPTANCE CRITERIA.

Brief Description of Clinical Tests:

No new clinical tests were required to support this 510(k) notification.

Conclusion:

The performance data support the conclusion that the subject device is as safe, as effective, and performs as well as the legally marketed device that was submitted and cleared under K113423.