



April 15, 2026

Advanced Sterilization Products, Inc.
Brandon Roberts
Senior Regulatory Affairs Specialist
33 Technology Drive
Irvine, California 92618

Re: K252843

Trade/Device Name: STERRAD 100NX Sterilization System with ALLClear Technology (10104)
Regulation Number: 21 CFR 880.6860
Regulation Name: Ethylene oxide gas sterilizer
Regulatory Class: Class II
Product Code: MLR
Dated: September 5, 2025
Received: September 8, 2025

Dear Brandon Roberts:

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 (the 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 available 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.

Additional information about changes that may require a new premarket notification are provided in the FDA guidance documents entitled "Deciding When to Submit a 510(k) for a Change to an Existing Device" (<https://www.fda.gov/media/99812/download>) and "Deciding When to Submit a 510(k) for a Software Change to an Existing Device" (<https://www.fda.gov/media/99785/download>).

Your device is also subject to, among other requirements, the Quality Management System Regulation (QMSR) (21 CFR Part 820), which includes, but is not limited to, ISO 13485 clause 7.3 (Design controls), ISO 13484 clause 8.3 (Nonconforming product), and ISO 13485 clause 8.5 (Corrective and preventative action). Please note that regardless of whether a change requires premarket review, the QMSR requires device manufacturers to review and approve changes to device design and production (ISO 13485 clause 7.3 and 21 CFR 820.70) and document changes and approvals in the device master record (21 CFR 820.181).

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 Part 803) for devices or postmarketing safety reporting (21 CFR Part 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 Management System Regulation (QMSR) (21 CFR Part 820) for devices or current good manufacturing practices (21 CFR Part 4, Subpart A) for combination products; and, if applicable, the electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR Parts 1000-1050.

All medical devices, including Class I and unclassified devices and combination product device constituent parts are required to be in compliance with the final Unique Device Identification System rule ("UDI Rule"). The UDI Rule requires, among other things, that a device bear a unique device identifier (UDI) on its label and package (21 CFR 801.20(a)) unless an exception or alternative applies (21 CFR 801.20(b)) and that the dates on the device label be formatted in accordance with 21 CFR 801.18. The UDI Rule (21 CFR 830.300(a) and 830.320(b)) also requires that certain information be submitted to the Global Unique Device Identification Database (GUDID) (21 CFR Part 830 Subpart E). For additional information on these requirements, please see the UDI System webpage at <https://www.fda.gov/medical-devices/device-advice-comprehensive-regulatory-assistance/unique-device-identification-system-udi-system>.

Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21 CFR 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,

STEPHEN A. Digitally signed by
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Date: 2026.04.15
17:04:41 -04'00'

Stephen Anisko
Acting Assistant Director
DHT4C: Division of Infection
Control 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)
K252843

Device Name
STERRAD 100NX Sterilization System with ALLClear Technology (10104)

Indications for Use (Describe)

The STERRAD 100NX Sterilizer with ALLClear Technology is designed for sterilization of both metal and nonmetal medical devices at low temperatures. The STERRAD sterilization process is a multiphase sterilization process that utilizes a combination of exposure to hydrogen peroxide vapor and plasma to safely sterilize medical instruments and materials without leaving toxic residue.

The STERRAD 100NX Sterilizer can sterilize instruments which have diffusion-restricted spaces, such as the hinged portion of forceps and scissors.

Medical devices with the following materials and dimensions can be processed in the STERRAD 100NX Sterilizer STANDARD cycle:

- Single channel stainless steel lumens with an inside diameter of 0.7 mm or larger and a length of 500 mm or shorter. A maximum of ten single channel stainless steel lumens, five per tray per sterilization cycle.

Medical devices, including most flexible endoscopes, with the following materials and dimensions can be processed in the STERRAD 100NX Sterilizer FLEX Scope cycle:

- Single channel polyethylene and Teflon (polytetrafluoroethylene) flexible endoscopes with an inside diameter of 1 mm or larger and length of 1065 mm or shorter. A maximum of two flexible endoscopes, one per tray per sterilization cycle. No additional load.

Note: With the exception of the 1 x 1065 mm flexible endoscopes, the validation studies were performed using a validation load consisting of two instrument trays each weighing 10.7 lbs. The 1 x 1065 mm flexible endoscopes were validated without any additional load.

The STERRAD 100NX EXPRESS Cycle is designed for surface sterilization of both metal and nonmetal medical devices at low temperatures.

- It can sterilize instrument surfaces and instruments having diffusion-restricted spaces, such as the hinged portion of forceps and scissors
- It can sterilize rigid and semi-rigid endoscopes without lumens.

Note: The validation studies for EXPRESS Cycle were performed using a validation load consisting of two trays weighing a total of 50 lbs (2 x 25 lbs.).

The STERRAD 100NX DUO Cycle is designed for sterilization of medical devices including most flexible endoscopes, with the following materials and dimensions:

- Single channel polyethylene and Teflon (polytetrafluoroethylene) flexible endoscopes with an inside diameter of 1 mm or larger and a length of 875 mm or shorter

- o Accessory devices that are normally connected to a flexible endoscope during use
- o Flexible endoscopes without lumens

Note 1: The validation studies for DUO Cycle were performed using a validation load consisting of two flexible endoscopes with their accessory devices weighing a total of 13.2 lbs.

- One Dual channel flexible endoscope with two polyethylene and Teflon (polytetrafluoroethylene) lumens that each have an inside diameter of 1 mm or larger and a length of 885 mm or shorter.

Note 2: The validation studies for DUO Cycle was performed using a validation load consisting of 1 dual channel endoscope with 1 mm diameter x 885 mm long and 2.2 mm diameter x 835 mm long PTFE/PE lumens, and 1 dual channel endoscope with 1 mm diameter x 670 mm long and 2.2 mm diameter x 845 mm long PTFE/PE lumens.

The STERRAD 100NX Sterilizer ULTRA GI Cycle is designed for sterilization of the following:

- Hydrogen peroxide compatible flexible multi-channel duodenoscopes, with no more than 4 channels, with lumen dimensions having an inside diameter (ID) of ≥ 1 mm x ≤ 1500 mm in length, or ≥ 2 mm ID x ≤ 1630 mm in length.

- One flexible duodenoscope per tray, and no more than two flexible duodenoscope per cycle

Note 1: The STERRAD 100NX Sterilizer ULTRA GI Cycle was validated using a load weight of 15.4 lbs (2 x 7.7 lbs),

one endoscope per shelf.

Note 2: Only duodenoscopes that have been cleared as compatible with vaporized hydrogen peroxide are acceptable. Check STERRAD Sterilizer Cycle Selection table for ULTRA GI Cycle compatible duodenoscopes

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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Advanced Sterilization Products, Inc.

510(k) Summary for K252843
Advanced Sterilization Products, Inc.
STERRAD™ 100NX Sterilizer with ALLClear™ Technology

This summary of 510(k) Safety and effectiveness information is being submitted in accordance with the requirements of 21 CFR 807.92.

General Information

Submitter Name: Advanced Sterilization Products, Inc.

Address: 33 Technology Drive
Irvine, CA 92618

Contact Person: Brandon Roberts
Senior Regulatory Affairs Specialist
Tel: 323 590-4214
Email: brandon.roberts@asp.com

Date Prepared: April 14, 2026

Device Name

Proprietary Name: STERRAD™ 100NX Sterilizer with ALLClear™ Technology (10104)
Common Name: Hydrogen Peroxide Gas Plasma Sterilization System
Classification Name: Ethylene Oxide Gas Sterilizer
Device Class: Class II
Product Code: MLR
CFR Section: 21 CFR 880.6860

Predicate Device

STERRAD™ 100NX Sterilizer with ALLClear™ Technology cleared under 510(k) K250802 on April 14, 2025.

Device Description

The STERRAD 100NX Sterilization System with ALLClear Technology is a self-contained stand-alone system of hardware and software designed to sterilize medical instruments and devices using a patented hydrogen peroxide gas plasma process. Hydrogen peroxide vapor is generated by injecting aqueous hydrogen peroxide into the vaporizer where the solution is heated and vaporized, introducing the vapor into the chamber under sub-ambient pressure and transforming the vapor into a gas plasma using electrical energy. The sterilization process is a multiphase process that utilizes a combination of exposure to hydrogen peroxide vapor and plasma to achieve sterilization. The hardware for the STERRAD 100NX Sterilizer consists of a sterilizer chamber and a variety of instruments and components which are housed in a covered frame. The sterilizer also uses accessories such as reusable instrument trays, biological indicator, chemical indicator products and sterilant cassettes.

The STERRAD 100NX Sterilizer has five cleared sterilization cycles: STANDARD, FLEX, EXPRESS, DUO and ULTRA GI Cycles.

The STERRAD 100NX Sterilizer with ALLClear Technology described within this submission expands the indications of the EXPRESS Cycle of the STERRAD 100NX Sterilizer to include a validation of up to 25 lbs per shelf and up to 50 lbs per cycle.

Intended Use/Indications For Use

The intended use of the subject STERRAD 100NX Sterilizer with ALLClear Technology and EXPRESS Cycle has not changed as a result of expanded indications for EXPRESS Cycle. Refer to Table 1 below for a comparison of intended use and indications for use of the predicate and proposed devices.

Technological Characteristics

The technological characteristics associated with the sterilization process for the proposed STERRAD 100NX Sterilizer with ALLClear Technology with expanded indications for the EXPRESS Cycle are equivalent to those of the previously cleared STERRAD 100NX Sterilizer with ALLClear Technology and DUO Cycle; there are no modifications being introduced to alter existing sterilization cycles and other physical features of the subject device with the exception of the EXPRESS Cycle.

The predicate device continues to have the same technological characteristics, sterilization performance, and physical traits as the predicate device, STERRAD 100NX Sterilizer with ALLClear Technology with EXPRESS Cycle.

Table 1: Comparison of Technological Characteristics

	<u>Subject Device</u>	<u>Predicate Device</u>
<u>Device Characteristics</u>	STERRAD™ 100NX Sterilizer with ALLClear Technology EXPRESS Cycle claims expansion K252843	STERRAD™ 100NX Sterilizer with ALLClear Technology K250802
<u>Intended Use</u>	Designed for sterilization of both metal and nonmetal medical devices at low temperatures. Because the cycle operates within a dry environment and at low temperatures, it is especially suitable for instruments sensitive to heat and moisture.	Identical
<u>Indications for Use</u>	The STERRAD 100NX Sterilizer with ALLClear Technology is designed for sterilization of both metal and nonmetal medical devices at low temperatures. The STERRAD sterilization process is a multiphase sterilization process that	The STERRAD 100NX Sterilizer with ALLClear Technology is designed for sterilization of both metal and nonmetal medical devices at low temperatures. The STERRAD sterilization process is a multiphase sterilization process that utilizes a combination of exposure to hydrogen peroxide vapor and plasma to

<u>Device Characteristics</u>	<u>Subject Device</u>	<u>Predicate Device</u>
		<p>STERRAD™ 100NX Sterilizer with ALLClear Technology EXPRESS Cycle claims expansion K252843</p>
	<p>utilizes a combination of exposure to hydrogen peroxide vapor and plasma to safely sterilize medical instruments and materials without leaving toxic residue. The STERRAD 100NX Sterilizer can sterilize instruments which have diffusion-restricted spaces, such as the hinged portion of forceps and scissors.</p> <p>Medical devices with the following materials and dimensions can be processed in the STERRAD 100NX Sterilizer STANDARD cycle:</p> <p>Single channel stainless steel lumens with an inside diameter of 0.7 mm or larger and a length of 500 mm or shorter. A maximum of ten single channel stainless steel lumens, five per tray per sterilization cycle.</p> <p>Medical devices, including most flexible endoscopes, with the following materials and dimensions can be processed in the STERRAD 100NX Sterilizer FLEX Scope cycle:</p>	<p>safely sterilize medical instruments and materials without leaving toxic residue. The STERRAD 100NX Sterilizer can sterilize instruments which have diffusion-restricted spaces, such as the hinged portion of forceps and scissors. Medical devices with the following materials and dimensions can be processed in the STERRAD 100NX Sterilizer STANDARD cycle:</p> <p>Single channel stainless steel lumens with an inside diameter of 0.7 mm or larger and a length of 500 mm or shorter. A maximum of ten single channel stainless steel lumens, five per tray per sterilization cycle. Medical devices, including most flexible endoscopes, with the following materials and dimensions can be processed in the STERRAD 100NX Sterilizer FLEX Scope cycle:</p> <p>Single channel polyethylene and Teflon (polytetrafluoroethylene) flexible endoscopes with an inside diameter of 1 mm or larger and length of 1065 mm or shorter. A maximum of two flexible endoscopes, one per tray per sterilization cycle. No additional load. Note: With the exception of the 1 x 1065 mm flexible endoscopes, the validation studies were performed using a validation load consisting of two instrument trays each weighing 10.7 lbs. The 1 x 1065 mm flexible endoscopes were validated without any additional load.</p>

<u>Device Characteristics</u>	<u>Subject Device</u>	<u>Predicate Device</u>
		<p>STERRAD™ 100NX Sterilizer with ALLClear Technology EXPRESS Cycle claims expansion K252843</p> <p>Single channel polyethylene and Teflon (polytetrafluoroethylene) flexible endoscopes with an inside diameter of 1 mm or larger and length of 1065 mm or shorter. A maximum of two flexible endoscopes, one per tray per sterilization cycle. No additional load. Note: With the exception of the 1 x 1065 mm flexible endoscopes, the validation studies were performed using a validation load consisting of two instrument trays each weighing 10.7 lbs. The 1 x 1065 mm flexible endoscopes were validated without any additional load.</p> <p>The STERRAD 100NX EXPRESS Cycle is designed for surface sterilization of both metal and nonmetal medical devices at low temperatures. It can sterilize instrument surfaces and instruments having diffusion-restricted spaces, such as the hinged portion of forceps and scissors. It can sterilize rigid and semi-rigid endoscopes without lumens.</p>

<u>Device Characteristics</u>	<u>Subject Device</u>	<u>Predicate Device</u>
		<p>STERRAD™ 100NX Sterilizer with ALLClear Technology EXPRESS Cycle claims expansion K252843</p> <p>Note: The validation studies for EXPRESS Cycle were performed using a validation load consisting of two trays weighing a total of 50 lbs (2 x 25 lbs.).</p> <p>The STERRAD 100NX DUO Cycle is designed for sterilization of medical devices including most flexible endoscopes, with the following materials and dimensions:</p> <p>Single channel polyethylene and Teflon (polytetrafluoroethylene) flexible endoscopes with an inside diameter of 1 mm or larger and a length of 875 mm or shorter Accessory devices that are normally connected to a flexible endoscope during use Flexible endoscopes without lumens.</p> <p>Note 1: The validation studies for DUO Cycle were performed using a validation load consisting of two flexible endoscopes with their accessory devices weighing a total of 13.2 lbs.</p>

<u>Device Characteristics</u>	<u>Subject Device</u>	<u>Predicate Device</u>
		<p>STERRAD™ 100NX Sterilizer with ALLClear Technology EXPRESS Cycle claims expansion K252843</p> <p>One Dual channel flexible endoscope with two polyethylene and Teflon (polytetrafluoroethylene) lumens that each have an inside diameter of 1 mm or larger and a length of 885 mm or shorter.</p> <p>Note 2: The validation studies for DUO Cycle was performed using a validation load consisting of 1 dual channel endoscope with 1 mm diameter x 885 mm long and 2.2 mm diameter x 835 mm long PTFE/PE lumens, and 1 dual channel endoscope with 1 mm diameter x 670 mm long and 2.2 mm diameter x 845 mm long PTFE/PE lumens.</p> <p>The STERRAD 100NX Sterilizer ULTRA GI Cycle is designed for sterilization of the following: Hydrogen peroxide compatible flexible multi-channel duodenoscopes, with no more than 4 channels, with lumen dimensions having an inside diameter (ID) of $\geq 1\text{mm}$ x $\leq 1500\text{mm}$ in length, or $\geq 2\text{mm}$ ID x $\leq 1630\text{mm}$ in length.</p>

<u>Device Characteristics</u>	<u>Subject Device</u>	<u>Predicate Device</u>
		<p>STERRAD™ 100NX Sterilizer with ALLClear Technology EXPRESS Cycle claims expansion K252843</p>
	<p>One flexible duodenoscope per tray, and no more than two flexible duodenoscope per cycle</p> <p>Note 1: The STERRAD 100NX Sterilizer ULTRA GI Cycle was validated using a load weight of 15.4 lbs (2 x 7.7 lbs), one endoscope per shelf.</p> <p>Note 2: Only duodenoscopes that have been cleared as compatible with vaporized hydrogen peroxide are acceptable. Check STERRAD Sterilizer Cycle Selection table for ULTRA GI Cycle compatible duodenoscopes</p>	
<u>Sterilization Cycles</u>	<p>ULTRA GI STANDARD FLEX EXPRESS DUO</p>	<p>Identical</p>
<u>Dimensions</u>	<p>One Door: 30.5" W x 70.9" H x 41.5" D (775 mm x 1800 mm x 1055 mm) Two Door: 30.5" W x 70.9" H x 43.1" D</p>	<p>Identical</p>

<u>Device Characteristics</u>	<u>Subject Device</u>	<u>Predicate Device</u>
	STERRAD™ 100NX Sterilizer with ALLClear Technology EXPRESS Cycle claims expansion K252843	STERRAD™ 100NX Sterilizer with ALLClear Technology K250802
	(775 mm x 1800 mm x 1095 mm)	
<u>H₂O₂ Concentration by Weight</u>	59-94% Depending on Cycle	Identical
<u>Number of Half Cycles</u>	2	Identical
<u>Chamber Volume</u>	152L	Identical
<u>Key Critical Process Parameters</u>	Pressure, temperature and H ₂ O ₂ concentration, H ₂ O ₂ Does & Exposure Time	Identical
<u>Use of Pre-Conditioning Step</u>	Yes	Identical
<u>Use of Secondary Step to Remove Residual H₂O₂ (technology)</u>	Yes (plasma)	Identical

Table 2: Summary of Non-Clinical Testing

<u>Performance Testing</u>	<u>Acceptance Criteria</u>	<u>Pass/Fail</u>
Sterilization Verification	SAL of 10 ⁻⁶ shall be demonstrated.	Pass
Surface Sterilization	All test samples show no growth.	Pass
Growth Inhibition	No growth inhibition shall be indicated for processed samples.	Pass
In Use Test	Cycle performance shall be validated using scopes under in use conditions.	Pass
Simulated Use Test	Microbial performance should be demonstrated under simulated conditions.	Pass
Final Process Qualification	The critical process parameter values shall conform to the specifications for the STERRAD™ 100NX Sterilizer Express Cycle.	Pass
Usability	System must demonstrate it can be used safely and effectively by the intended users, under the expected conditions, without producing hazardous situations or unacceptable use errors.	Pass

Cycle Clinical Testing

No clinical data was generated in support of this submission.

Summary

The subject device, STERRAD 100NX Sterilizer with ALLClear Technology with EXPRESS Cycle claims expansion, and its predicate device utilize the same technology, sterilization cycles, and sterilization validation methods to sterilize medical devices. Based on the results of the performance testing, the change to the indications of the EXPRESS Cycle does not raise any new questions of safety or effectiveness. ASP believes the subject STERRAD 100NX Sterilizer with

Advanced Sterilization Products, Inc.

ALLClear Technology with EXPRESS Cycle claims expansion, to be as safe and effective as the predicate device and reference devices.

Conclusion

Based on the intended use, technological characteristics, and non-clinical performance data, the subject device, STERRAD 100NX with ALLClear Technology with EXPRESS Cycle claims expansion is as safe, as effective, and performs as well as the existing legally marketed predicate device, K250802.