



DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Part 880

[Docket No. FDA-2026-N-5199]

Medical Devices; General Hospital and Personal Use Devices; Classification of the Rigid Sterilization Container with Electronic Monitoring

AGENCY: Food and Drug Administration, HHS.

ACTION: Final amendment; final order.

SUMMARY: The Food and Drug Administration (FDA) is classifying the rigid sterilization container with electronic monitoring into class II (special controls). The special controls that apply to the device type are identified in this order and will be part of the codified language for classification of the rigid sterilization container with electronic monitoring. We are taking this action because we have determined that classifying the device into class II will provide a reasonable assurance of safety and effectiveness of the device. We believe this action will also enhance patients' access to beneficial innovative devices, in part by reducing regulatory burdens.

DATES: This order is effective [INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]. The classification was applicable on June 17, 2022.

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SUPPLEMENTARY INFORMATION:

I. Background

Upon request, FDA (the Agency or we) has classified the rigid sterilization container with electronic monitoring into class II (special controls), which we have determined will provide a reasonable assurance of safety and effectiveness of the device. In addition, we believe

this action will enhance patients' access to beneficial innovation, in part by reducing regulatory burdens by placing the device into a lower device class than the automatic class III assignment.

The automatic assignment of class III occurs by operation of law and without any action by FDA, regardless of the level of risk posed by the new device. Any device that was not in commercial distribution before May 28, 1976, is automatically classified into, and remains within, class III and requires premarket approval unless and until FDA takes an action to classify or reclassify the device (21 U.S.C. 360c(f)(1)). We refer to these devices as “postamendments devices” because they were not in commercial distribution prior to the date of enactment of the Medical Device Amendments of 1976, which amended the Federal Food, Drug, and Cosmetic Act (FD&C Act).

FDA may take a variety of actions in appropriate circumstances to classify or reclassify a device into class I or II. We may issue an order finding a new device to be substantially equivalent under section 513(i) of the FD&C Act (21 U.S.C. 360c(i)) to a predicate device that does not require premarket approval. We determine whether a new device is substantially equivalent to a predicate device by means of the procedures for premarket notification under section 510(k) of the FD&C Act (21 U.S.C. 360(k)) and part 807 (21 CFR part 807).

FDA may also classify a device through “De Novo” classification, a common name for the process authorized under section 513(f)(2) of the FD&C Act (see also part 860, subpart D (21 CFR part 860, subpart D)). Section 207 of the Food and Drug Administration Modernization Act of 1997 (Pub. L. 105-115) established the first procedure for De Novo classification. Section 607 of the Food and Drug Administration Safety and Innovation Act (Pub. L. 112-144) modified the De Novo classification process by adding a second procedure. A device sponsor may utilize either procedure for De Novo classification.

Under the first procedure, the person submits a premarket notification (510(k)) for a device that has not previously been classified. After receiving an order from FDA classifying the

device into class III under section 513(f)(1) of the FD&C Act, the person then requests a classification under section 513(f)(2).

Under the second procedure, rather than first submitting a 510(k) and then a request for classification, if the person determines that there is no legally marketed device upon which to base a determination of substantial equivalence, that person requests a classification under section 513(f)(2) of the FD&C Act.

Under either procedure for De Novo classification, FDA is required to classify the device by written order within 120 days. The classification will be according to the criteria under section 513(a)(1) of the FD&C Act. Although the device was automatically placed within class III, the De Novo classification is considered to be the initial classification of the device.

We believe this De Novo classification will enhance patients' access to beneficial innovation, in part by reducing regulatory burdens. When FDA classifies a device into class I or II via the De Novo process, the device can serve as a predicate for future devices of that type, including for 510(k)s (see section 513(f)(2)(B)(i) of the FD&C Act). As a result, other device sponsors do not have to submit a De Novo request or premarket approval application to market a substantially equivalent device (see section 513(i) of the FD&C Act, defining "substantial equivalence"). Instead, sponsors can use the less burdensome 510(k) process, when necessary, to market their device.

II. De Novo Classification

On February 16, 2021, FDA received Zuno Medical, Inc.'s request for De Novo classification of the Zuno Smart Sterilization Container. FDA reviewed the request in order to classify the device under the criteria for classification set forth in section 513(a)(1) of the FD&C Act.

We classify devices into class II if general controls by themselves are insufficient to provide reasonable assurance of safety and effectiveness of the device, but there is sufficient information to establish special controls that, in combination with the general controls, provide

reasonable assurance of the safety and effectiveness of the device for its intended use (see section 513(a)(1)(B) of the FD&C Act). After review of the information submitted in the request, we determined that the device can be classified into class II with the establishment of special controls. FDA has determined that these special controls, in addition to the general controls, will provide reasonable assurance of the safety and effectiveness of the device.

Therefore, on June 17, 2022, FDA issued an order to the requester classifying the device into class II. In this final order, FDA is codifying the classification of the device by adding 21 CFR 880.6855.¹ We have named the generic type of device “rigid sterilization container with electronic monitoring,” and it is identified as a device intended to be used to enclose medical devices that are to be sterilized by a health care provider. It is intended to allow sterilization of the enclosed medical devices and maintain sterility of the enclosed devices until used. The device provides sterility status of the enclosed medical devices via real time electronic monitoring.

FDA has identified the risks to health associated with this type of device and the measures required to mitigate these risks in table 1.

Table 1.--Risks to Health and Mitigation Measures for Rigid Sterilization Containers With Electronic Monitoring

Identified Risks to Health	Mitigation Measures
Infection resulting from exposure to unsterile instruments due to device failure or failure to properly interpret sterile barrier status	Sterilization validation; Software verification, validation, and hazard analysis; Reprocessing validation; Non-clinical performance testing; Labeling; and Human factors testing
Delayed or cancelled treatment due to device failure	Non-clinical performance testing
Adverse tissue reaction	Biocompatibility evaluation
Electric shock to user	Electrical safety testing; Electromagnetic compatibility testing; and Labeling

¹ FDA notes that the “ACTION” caption for this final order is styled as “Final amendment; final order,” rather than “Final order.” Beginning in December 2019, this editorial change was made to indicate that the document “amends” the Code of Federal Regulations. The change was made in accordance with the Office of Federal Register’s (OFR) interpretations of the Federal Register Act (44 U.S.C. chapter 15), its implementing regulations (1 CFR 5.9 and parts 21 and 22), and the Document Drafting Handbook.

FDA has determined that special controls, in combination with the general controls, address these risks to health and provide reasonable assurance of safety and effectiveness of the device. For a device to fall within this classification, and thus avoid automatic classification in class III, it would have to comply with the special controls named in this final order. The necessary special controls appear in the regulation codified by this final order.

Under the FD&C Act, submission of a premarket notification under section 510(k) is required to reasonably assure the safety and effectiveness of class II devices unless FDA determines that the device type should be exempt under section 510(m) of the FD&C Act. At this time FDA has not made this determination for rigid sterilization containers with electronic monitoring. This device is therefore subject to premarket notification requirements under section 510(k) of the FD&C Act.

III. Analysis of Environmental Impact

The Agency has determined under 21 CFR 25.34(b) that this action is of a type that does not normally have a significant effect on the human environment. Therefore, neither an environmental assessment nor an environmental impact statement is required.

IV. Paperwork Reduction Act of 1995

This final order establishes special controls that refer to previously approved collections of information found in other FDA regulations and guidance. These collections of information are subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501-3521). The collections of information in part 860, subpart D, regarding De Novo classification have been approved under OMB control number 0910-0844; the collections of information in 21 CFR part 814, subparts A through E, regarding premarket approval have been approved under OMB control number 0910-0231; the collections of information in part 807, subpart E, regarding premarket notification submissions have been approved under OMB control number 0910-0120; the collections of information in 21 CFR part 820 regarding quality management system regulation have been approved under OMB control

number 0910-0073; and the collections of information in 21 CFR part 801 regarding labeling have been approved under OMB control number 0910-0485.

List of Subjects in 21 CFR Part 880

Medical devices.

Therefore, under the Federal Food, Drug, and Cosmetic Act and under authority delegated to the Commissioner of Food and Drugs, 21 CFR part 880 is amended as follows:

PART 880--GENERAL HOSPITAL AND PERSONAL USE DEVICES

1. The authority citation for part 880 continues to read as follows:

Authority: 21 U.S.C. 351, 360, 360c, 360e, 360j, 360l, 371.

2. Add § 880.6855 to subpart G to read as follows:

§ 880.6855 Rigid sterilization container with electronic monitoring.

(a) *Identification.* A rigid sterilization container with electronic monitoring is a device intended to be used to enclose medical devices that are to be sterilized by a health care provider. It is intended to allow sterilization of the enclosed medical devices and maintain sterility of the enclosed devices until used. The device provides sterility status of the enclosed medical devices via real time electronic monitoring.

(b) *Classification.* Class II (special controls). The special controls for this device are:

(1) Non-clinical performance testing must demonstrate that the device performs as intended under anticipated conditions of use. The following performance characteristics must be evaluated to ensure device function and integrity during challenging use:

(i) Vent-to-volume testing must demonstrate adequate sterilant penetration.

(ii) Sterilization validation must demonstrate that the contents to be sterilized can adequately achieve the proposed Sterility Assurance Level (SAL).

(iii) Performance testing must demonstrate the device accurately informs the end-user of the sterile status of the contents.

(iv) Performance testing must demonstrate the device can maintain sterility of the enclosed medical products for a minimum 30-day storage period.

(v) Battery performance and shelf life testing must demonstrate the device maintains its function throughout its total use-life.

(vi) Battery performance and shelf life testing must demonstrate the device maintains its function during storage, throughout a minimum 30-day sterile storage period.

(vii) Moisture/sterilant ingress testing must support that the electronic components are adequately sealed and do not allow moisture/sterilant ingress.

(viii) Microbial barrier testing must support that the seals, gaskets, valves, etc. provide an adequate barrier to microbial ingress.

(ix) Seal integrity testing must demonstrate that an adequate seal is created and maintained throughout the sterile storage period.

(x) Mechanical functionality testing must demonstrate proper function of any valves, gaskets, or other components essential to the function of the device.

(xi) For devices with handles, handle strength testing must demonstrate the handles can withstand the maximum indicated load weight.

(xii) Corrosion resistance testing must demonstrate adequate function of any components susceptible to corrosion following the most challenging use.

(xiii) Dryness evaluation testing must demonstrate the contents to be sterilized are dry prior to storage.

(xiv) Simulated use testing must evaluate device performance (including maintenance of sterility and accurate sterility status monitoring) under real-world worst-case use conditions.

(2) Device components that may contact medical products must be demonstrated to be biocompatible.

(3) Performance data must validate the reprocessing instructions for the reusable components of the device.

(4) Software verification, validation, and hazard analysis must be performed.

(5) Human factors testing must be performed to demonstrate that end user(s) can safely and correctly use the device, based solely on the directions for use.

(6) Performance data must demonstrate the electromagnetic compatibility and electrical safety of the device.

(7) Labeling must include:

(i) Warnings, cautions, and limitations for safe use of the device including:

(A) A precaution that the lids/trays and any accessories should only be used with the sterilization container.

(B) A precaution that the use of nonabsorbent tray liners can cause condensate to pool.

(ii) Device operating procedures including:

(A) Instructions for closures, gaskets, type, sizes, and valve assembly weight as appropriate.

(B) Instructions for density and distribution of contents, stacking patterns, or any other recommendations pertaining to load configuration of the medical devices to be sterilized.

(iii) A description of the validated length of time sterility can be maintained.

(iv) Identification of any replaceable components, information about the expected life of these components, and instructions for procedures on replacement when needed.

(v) Identification of products intended for sterilization that are compatible for use with the device.

(vi) Description of the required preparation of products intended for sterilization in the device.

Grace R. Graham,

Deputy Commissioner for Policy, Legislation, and International Affairs.

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