Guidance for Industry and FDA Staff

Class II Special Controls Document: Oral Rinse to Reduce the Adhesion of Dental Plaque

Document issued on: September 20, 2005

For questions regarding this document contact Robert S. Betz, D.D.S. at 240-276-3700 or robert.betz@fda.hhs.gov

U.S. Department of Health and Human Services
Food and Drug Administration
Center for Devices and Radiological Health

Dental Devices Branch
Division of Anesthesia, General Hospital, Infection Control, and Dental Devices
Office of Device Evaluation

Preface

Public Comment

Written comments and suggestions may be submitted at any time for Agency consideration to Dockets Management Branch, Division of Management Systems and Policy, Office of Human Resources and Management Services, Food and Drug Administration, 5630 Fishers Lane, Room 1061, (HFA-305), Rockville, MD, 20852. Alternatively, electronic comments may be submitted to http://www.fda.gov/dockets/ecomments. Please identify your comments with the docket number listed in the notice of availability that publishes in the *Federal Register* announcing the availability of this guidance document. Comments may not be acted upon by the Agency until the document is next revised or updated.

Additional Copies

Additional copies are available from the Internet at: http://www.fda.gov/cdrh/ode/guidance/1559.pdf, or to receive this document via your fax machine, call the CDRH Facts-On-Demand system at 800-899-0381 or 301-827-0111 from a touch-tone telephone. Press 1 to enter the system. At the second voice prompt, press 1 to order a document. Enter the document number (**1559**) followed by the pound sign (#). Follow the remaining voice prompts to complete your request.

Table of Contents

Guidance for Industry and FDA Staff

Class II Special Controls Document: Oral Rinse to Reduce the Adhesion of Dental Plaque

This guidance represents the Food and Drug Administration's (FDA's) current thinking on this topic. It does not create or confer any rights for or on any person and does not operate to bind FDA or the public. You can use an alternative approach if the approach satisfies the requirements of the applicable statutes and regulations. If you want to discuss an alternative approach, contact the FDA staff responsible for implementing this guidance. If you cannot identify the appropriate FDA staff, call the appropriate number listed on the title page of this guidance.

1. Introduction

This guidance document was developed as a special controls guidance to support the classification of the device, oral rinse to reduce the adhesion of dental plaque, into Class II (special controls). This device is intended to reduce the presence of bacterial plaque on teeth and oral mucosal surfaces by physical means[1].

This guidance will be issued in conjunction with a Federal Register (FR) notice announcing the proposal to establish the classification of this device type. This guidance is issued in conjunction with a Federal Register notice announcing the classification of the device type, oral rinse to reduce the adhesion of dental plaque.

Following the effective date of the final rule classifying the device type, any firm submitting a 510(k) for oral rinse to reduce the adhesion of dental plaque will need to address the issues covered in the special control guidance. However, the firm need only show that its device meets the recommendations of the guidance or in some other way provides equivalent assurances of safety and effectiveness.

FDA's guidance documents, including this guidance, do not establish legally enforceable responsibilities. Instead, guidances describe the Agency's current thinking on a topic and

[1] Products that function by chemical means or as biological agents will not be considered within this document and are regulated elsewhere within the Food and Drug Administration.

should be viewed only as recommendations, unless specific regulatory or statutory requirements are cited. The use of the word *should* in Agency guidances means that something is suggested or recommended, but not required.

The Least Burdensome Approach

The issues identified in this guidance document represent those that we believe need to be addressed before your device can be marketed. In developing the guidance, we carefully considered the relevant statutory criteria for Agency decision-making. We also considered the burden that may be incurred in your attempt to follow the guidance and address the issues we have identified. We believe that we have considered the least burdensome approach to resolving the issues presented in the guidance document. If, however, you believe that there is a less burdensome way to address the issues, you should follow the procedures outlined in the "A Suggested Approach to Resolving Least Burdensome Issues" document. It is available on our Center web page at: http://www.fda.gov/cdrh/modact/leastburdensome.html.

2. Background

FDA believes that special controls, when combined with the general controls, will be sufficient to provide reasonable assurance of the safety and effectiveness of oral rinse to reduce the adhesion of dental plaque. Thus, a manufacturer who intends to market a device of this generic type should (1) conform to the general controls of the Federal Food, Drug, and Cosmetic Act (the Act), including the premarket notification requirements described in 21 CFR 807, Subpart E, (2) address the specific risks to health identified in this guidance, and (3) obtain a substantial equivalence determination from FDA prior to marketing the device.

This special controls guidance document identifies the proposed regulation and product code for the device, oral rinse to reduce the adhesion of dental plaque (refer to **4. Scope)**. In addition, other sections of this special controls guidance document list the risks to health identified by FDA and describe measures that, if followed by manufacturers and combined with the general controls, will generally address the risks associated with these devices and lead to a timely 510(k) review and clearance. This document supplements other FDA documents regarding the content requirements of a 510(k) submission. You should also refer to 21 CFR 807.87 and "**How to Prepare a 510(k) Submission**" on FDA Device Advice at http://www.fda.gov/cdrh/devadvice/314.html.

Under "**The New 510(k) Paradigm - Alternate Approaches to Demonstrating Substantial Equivalence in Premarket Notifications; Final Guidance**,"[2] a manufacturer may submit a Traditional 510(k) or an Abbreviated 510(k). FDA believes an Abbreviated

[2] http://www.fda.gov/cdrh/ode/parad510.html.

510(k) provides the least burdensome means of demonstrating substantial equivalence for a new device, particularly once a class II special controls guidance document has been issued. Additionally, manufacturers considering modifications to their own cleared devices may lessen the regulatory burden by submitting a Special 510(k).

3. The Content and Format of an Abbreviated 510(k) Submission

An Abbreviated 510(k) submission must include the required elements identified in 21 CFR 807.87, including the proposed labeling for the device sufficient to describe the device, its intended use, and the directions for its use. In an Abbreviated 510(k), FDA may consider the contents of a summary report to be appropriate supporting data within the meaning of 21 CFR 807.87(f) or (g); therefore, we recommend that you include a summary report. The report should describe how this special controls guidance document was used during the device development and testing and should briefly describe the methods or tests used and a summary of the test data or description of the acceptance criteria applied to address the risks identified in this document, as well as any additional risks specific to your device. This section suggests information to fulfill some of the requirements of section 807.87 as well as some other items that we recommend you include in an Abbreviated 510(k).

Coversheet

The coversheet should prominently identify the submission as an Abbreviated 510(k) and cite the title of this special controls guidance document.

Proposed Labeling

Proposed labeling should be sufficient to describe the device, its intended use, and the directions for its use. (Refer to **10. Labeling** for specific information that should be included in the labeling for devices of the type covered by this guidance document.)

Summary Report

We recommend that the summary report contain a:

Description of the device and its intended use

We recommend that the description include a complete discussion of the performance specifications and, when appropriate, detailed, labeled drawings of the device. (Refer to **5. Device Description** for specific information that we recommend you include in the device description for devices of the type covered by this guidance document.) You should also submit an "indications for use" enclosure.[3]

[3] Refer to http://www.fda.gov/cdrh/ode/indicate.html for the recommended format.

Description of Device Design

We recommend that you include a brief description of the device design requirements.

Identification of the Risk Analysis Method

We recommend that you identify the risk analysis method(s) used to assess the risk profile in general as well as the specific device's design and the results of this analysis. (Refer to **6. Risks to Health** for the risks to health generally associated with the use of this device that FDA has identified.)

Discussion of the Device Characteristics

We recommend that you discuss the device characteristics that address the risks identified in this class II special controls guidance document, as well as any additional risks identified in your risk analysis.

Description of Performance Aspects

We recommend that you include a brief description of the test method(s) you have used or intend to use to address each performance aspect identified in **Sections 7 through 9** of this Class II special controls guidance document. If you follow a suggested test method, you may cite the method rather than describing it. If you modify a suggested test method, you may cite the method but should provide sufficient information to explain the nature of and reason for the modification. For each test, you may either (1) briefly present the data resulting from the test in clear and concise form, such as a table, **or** (2) describe the acceptance criteria that you will apply to your test results.[4] (See also 21 CFR 820.30, Subpart C - Design Controls under the Quality System Regulation.)

Reliance on Standards

If you choose to rely on a recognized standard for any part of the device design or testing, you may include either a:

---

[4] If FDA makes a substantial equivalence determination based on acceptance criteria, the subject device should be tested and shown to meet these acceptance criteria before being introduced into interstate commerce. If the finished device does not meet the acceptance criteria and, thus, differs from the device described in the cleared 510(k), FDA recommends that submitters apply the same criteria used to assess modifications to legally marketed devices (21 CFR 807.81(a)(3)) to determine whether marketing of the finished device requires clearance of a new 510(k).

- statement that testing will be conducted and meet specified acceptance criteria before the device is marketed; or
- declaration of conformity to the standard.[5]

Because a declaration of conformity is based on results from testing, we believe you cannot properly submit a declaration of conformity until you have completed the testing the standard describes. For more information, please refer to section 514(c)(1)(B) of the Act and the FDA guidance, **Use of Standards in Substantial Equivalence Determinations**.[6]

If it is not clear how you have addressed the risks identified by FDA or additional risks identified through your risk analysis, we may request additional information about aspects of the device's performance characteristics. We may also request additional information if we need it to assess the adequacy of your acceptance criteria. (Under 21 CFR 807.87(l), we may request any additional information that is necessary to reach a determination regarding substantial equivalence.)

As an alternative to submitting an Abbreviated 510(k), you can submit a Traditional 510(k) that provides all of the information and data required under 21 CFR 807.87 and described in this guidance. A Traditional 510(k) should include all of your methods, data, acceptance criteria, and conclusions. Manufacturers considering modifications to their own cleared devices should consider submitting Special 510(k)s.

The general discussion above applies to any device subject to a special controls guidance document. The following is a specific discussion of how you should apply this special controls guidance document to a 510(k) submission for oral rinse to reduce the adhesion of dental plaque.

4. Scope

The scope of this document is limited to the devices described below.

Oral rinse to reduce the adhesion of dental plaque, 21 CFR § 872.5580, Class II (special controls), product code, NTO.

An oral rinse to reduce the adhesion of dental plaque is intended to reduce the presence of bacterial plaque on teeth and oral mucosal surfaces by physical means.

---

[5] See **Required Elements for a Declaration of Conformity to a Recognized Standard** (Screening Checklist for All Premarket Notification [510(K)] Submissions), http://www.fda.gov/cdrh/ode/reqrecstand.html.

[6] http://www.fda.gov/cdrh/ode/guidance/1131.html.

These devices include those that act by reducing the attachment and inhibiting the growth of bacteria.

The scope of this guidance does not include substances that function by chemical means, are metabolized by the body, or are biological agents.[7]

5. Device Description

We recommend that you identify your device by regulation number and product code, and include the following information:

- a description of the components of the device
- a description of any accessories used with the device system
- a description of how the device will be marketed
- the shelf life of the device.

We also recommend that you explain, in detail, the mechanism of action for your device.

6. Risks to Health

In the table below, FDA has identified the risks to health generally associated with the use of devices intended to reduce dental plaque in the oral cavity. The measures recommended to mitigate these identified risks are given in this guidance document, as shown in the table below. You should also conduct a risk analysis, before submitting your 510(k), to identify any other risks specific to your device. The 510(k) should describe the risk analysis method used and include the results of this analysis. If you elect to use an alternative approach to address a particular risk identified in this document, or have identified risks additional to those in this document, you should provide sufficient detail to support the approach you have used to address that risk.

Identified Risks	Recommended Mitigation Measures
Ineffective Plaque Reduction	Section 7. Material Characterization

[7] If you have questions, we recommend that you contact the FDA Office of Combination Products regarding a Request for Determination (RFD). You can find information about RFDs at: http://www.fda.gov/oc/ombudsman/part3&5.htm#request . The following FDA web site gives general information about the Office of Combination Products and related issues: http://www.fda.gov/oc/combination/.

	Section 8. Device Performance
Alteration of Oral Flora	Section 8. Device Performance
Adverse Tissue Reaction (hard and soft tissue)	Section 7. Material Characterization Section 8. Device Performance Section 9. Biocompatibility
Toxicity	Section 7. Material Characterization Section 10. Labeling
Improper Use	Section 10. Labeling

7. Material Characterization

The material characterization should identify the:

- complete chemical composition, summing to 100% by mass, including all additives
- Chemical Abstracts Service[8] (CAS®) registry number for each component.

We also recommend that you describe the composition, including an elemental analysis that identifies all trace impurities and residual solvents.

Because there is a risk of the device being swallowed, we recommend that you evaluate its absorption and distribution in human subjects. This evaluation should include information related to the metabolism and excretion of all components of your device and trace substances and breakdown products. We also recommend that you include these evaluations in your comparison to legally marketed devices of the same type.

If your device is derived from or contains any animal-source material, we recommend that you describe the species and tissue from which the animal material was derived, including the specific type of material used. See also the guidance entitled, **Medical Devices Containing Materials Derived from Animal Sources (Except In Vitro Diagnostic Devices)**.[9]

8. Device Performance

We recommend that you provide the information described below to show how your device is both similar to and different from the legally marketed device. We also recommend that

[8] http://www.cas.org/EO/regsys.html.

[9] http://www.fda.gov/cdrh/ode/88.html.

you describe how any differences may be clinically significant or affect the comparative safety of your device.

A. Optimum Concentration of the Active Ingredient

We recommend that you identify the optimum concentration of active ingredient in your device, describe the methods used to make this determination, and explain your rationale for selecting those methods.

B. Effect on Bacteria Present in the Oral Cavity

We recommend that you describe the effect of your device on changes in the bacteria present in the oral environment. This description should include information on the number of bacteria and proportion of different species for

- immediate changes
- short term changes (e.g., over days or weeks)
- long term changes (generally, 6 months or longer).

C. Shelf Life

We recommend that you submit testing results to establish the shelf life (i.e., expiration date). Accelerated test results should be supported by validated test information that demonstrates the device is as effective clinically at the end of its shelf life. Depending on the material, shelf life should also be supported by real time testing.

D. Animal Testing

If the composition of the material is sufficiently different from legally marketed devices of this type that it raises safety concerns, we recommend that you first conduct animal testing. We recommend that you select an animal model in which anatomical sites have been studied previously and recognized as:

- producing biological responses similar to those observed in human subjects
- having a natural disease history and response to medical treatments similar to as human subjects.

We also recommend that you explain the reasons for selecting a given animal model.

Animal testing should address study endpoints related to:

- hard and soft tissue reactions
- alterations in oral flora
- effectiveness, as demonstrated by the reduction of bacterial plaque.

F. Clinical Testing

In accordance with the least burdensome provisions of the aAct, the agency will rely upon well-designed bench and/or animal testing rather than requiring clinical studies for devices intended to reduce dental plaque unless there is a specific justification for asking for clinical information to support a determination of substantial equivalence. While clinical studies will not be needed for most device types, FDA may recommend that you collect clinical data for an oral rinse to reduce the adhesion of dental plaque in the following circumstances:

- formulation dissimilar from formulations previously cleared
- new technology, i.e., technology different from that used in legally marketed device of the same type
- indications for use dissimilar from devices of the same type.

FDA will always consider alternatives to clinical testing when the proposed alternatives are supported by an adequate scientific rationale.

In situations where we do recommend clinical studies for these devices, you should address the concerns we outline below. The Dental Devices Branch is also available to answer questions you may about clinical studies for these devices.

Control Device

We recommend that you use an appropriate device as your control. Generally, factors that lead to a control device being appropriate relate to whether its indication, technology, or performance are similar enough to make your comparison meaningful.

Positive and Negative Controls

The use of no-treatment controls may not be appropriate when there is a standard of care control available, or when a no-treatment control is unethical or otherwise not feasible. The control groups and control devices should reflect the indications for use of your device.

Study Endpoints

Clinical testing should address study endpoints related to:

- hard and soft tissue reactions
- alterations in oral flora
- effectiveness, as demonstrated by the reduction of bacterial plaque.

If a clinical study is needed to demonstrate substantial equivalence, the study must be conducted under the Investigational Device Exemptions (IDE) regulation, 21 CFR Part 812. FDA believes that the device, oral rinse to reduce the adhesion of dental plaque by physical means, that function by physical, addressed by this guidance document, generally is a significant risk device.[10] In addition to the requirement of having an FDA-approved IDE, sponsors of such trials must comply with the regulations governing institutional review boards (21 CFR Part 56) and informed consent (21 CFR Part 50).

If FDA determines that the device is substantially equivalent, clinical studies conducted in accordance with the indications reviewed in the 510(k), including clinical design validation studies conducted in accordance with the quality systems regulation, are exempt from the investigational device exemptions (IDE) requirements. However, such studies must be performed in conformance with 21 CFR Part 56 and 21 CFR Part 50**.**

9. Biocompatibility

We recommend that you submit the results of biocompatibility testing as described in the FDA-modified **Use of International Standard ISO-10993, Biological Evaluation of Medical Devices Part-1: Evaluation and Testing**[11] for limited contact (less than 24 hours) devices that contact breached or compromised surfaces and external (tissue/bone/dentin) communicating devices. Testing should include, but is not limited to cytotoxicity, irritation, sensitization, genotoxicity, implantation, chronic toxicity, and carcinogenicity.

If the material has been well-characterized chemically and physically, and has a well-established record of use in the scientific literature as an oral rinse to reduce the adhesion of dental plaque, FDA will consider published literature in lieu of biocompatibility testing. If you refer to any published literature in lieu of biocompatibility testing, we recommend that you submit reprints.

If *identical* materials are used in a predicate device with the same indication, same type of tissue, and same contact duration, you may identify the predicate device in lieu of biocompatibility testing.

10. Labeling

Your 510(k) submission should include labeling in sufficient detail to satisfy the requirements of 21 CFR 807.87(e). The following suggestions are aimed at assisting you in preparing labeling that satisfies the requirements of 21 CFR Part 801.[12]

---

[10] See http://www.fda.gov/oc/ohrt/irbs/devices.html#risk.

[11] http://www.fda.gov/cdrh/g951.html

[12] Although final labeling is not required for 510(k) clearance, final labeling must comply with the requirements of 21 CFR Part 801 before a medical device is introduced into

A. Instructions for Use

As a prescription device, under 21 CFR 801.109, the device is exempt from having adequate directions for lay use. Nevertheless, under 21 CFR 807.87(e), we recommend submitting clear and concise instructions that delineate the technological features of the specific device and how the device should be used.

We also recommend that the instructions for use of your device be written in sufficient detail to enable practitioners with minimal experience and patients to achieve the desired results. This should include instructions for:

- the frequency and duration of use, consistent with the intended use
- the treatment of adverse reactions, such as burning and altered taste sensations
- the treatment of accidentally swallowing significant amounts of the device.

B. Precautions

Labeling should include precautions if there is limited knowledge about the effects of the device when used:

- during pregnancy
- on pediatric patients
- in patients with specified preexisting diseases or conditions.

---

interstate commerce. In addition, final labeling for prescription medical devices must comply with 21 CFR 801.109. Labeling recommendations in this guidance are consistent with the requirements of Part 801.