GUIDANCE ON USE OF COVESTRO PRODUCTS IN A MEDICAL APPLICATION

1. Purpose

The purpose of this Guidance Document is to provide information regarding the use of Covestro products in a medical application.

2. Medical Application

As used in this Guidance Document, the term “Medical Application” means all applications of medical devices wherein the medical device is manufactured with a Covestro Product(s) and is intended under normal use to be brought into direct contact with the patient’s body (e.g., skin, body fluids or tissues), including indirect contact to blood. If the medical device has more than one part or component, the term “Medical Application” shall apply only to the part or component which is intended under normal use to be brought into direct contact to the patient’s body (e.g., skin, body fluids or tissues), including indirect contact to blood and is also manufactured with a Covestro Product(s). Medical devices implanted in the human body as well as components of drug delivery devices which are intended to be in direct contact with the drug are also included.

3. Covestro Products for a Medical Application

The Covestro products covered by this Guidance Document are fully reacted polymeric materials, reactive raw materials, dispersions, solutions, and non-reactive raw materials sold by Covestro (hereinafter **“Covestro Products”**). As used in this Guidance Document, the term **“Covestro Products”** does not include final end-use-products (e.g., medical devices) that are made from Covestro raw materials, reacted materials, dispersions, or solutions.

Covestro designates certain fully reacted Covestro polymeric materials (e.g. certain plastics, sheets, and films) as **“Medical Grade”**.

Other Covestro Products, such as reactive raw materials (e.g., diisocyanate and polyols), dispersions, solutions, and non-reactive raw materials (which typically are added to substrate) are not designated as “Medical Grade” and shall not be considered candidates for a Medical Application unless Covestro explicitly agrees, in writing, to sell such products for a Medical Application. Nonetheless any determination as to whether a Covestro product is appropriate for use in a Medical Application must be made solely by the purchaser of the Covestro product(s) without relying upon any representations by Covestro. In any event, Covestro makes no representations regarding the suitability of a Covestro Product for a particular medical Application or final end-use product, as further explained in Section 4 below. Moreover, with respect to reactive raw materials (e.g., diisocyanate and polyols), dispersions, solutions, and non-reactive raw materials, Covestro can make no representations regarding compliance with ISO Standard 10993-1 or other biocompatibility standards as such products must be reacted, have the solvent removed or be added to a substrate to form a solid or suitable material for an application as an article and therefore cannot be tested by themselves, or it is not appropriate to test them independent of the substrate, for meeting ISO Standard 10993-1 or other biocompatibility standards. It is the sole responsibility of the manufacturer of the final end-use-product to conduct all necessary tests (including biocompatibility tests) and inspections and to evaluate the final product under actual end use requirements.

Medical Grade

Covestro Products that are designated as “Medical Grade”, e.g., plastics, sheets, and films, meet certain biocompatibility test requirements of ISO Standard 10993-1: “Biological Evaluation of Medical Devices” for the categories including: (1) skin contact, (2) up to 24 hours contact with circulating blood, tissue, bone, and dentin, (3) up to 30 days contact with mucosal membranes, compromised surfaces, and blood path, indirect.

Covestro Products designated as “Medical Grade” shall not be considered candidates for the following types of Medical Applications unless Covestro explicitly agrees, in writing, to sell such products for such applications: (a) cosmetic, reconstructive, or reproductive implant applications; (b) any other bodily implant applications; (c) applications involving contact with or storage of human tissue, blood or other bodily fluids, for greater than 30 days; or (d) applications having greater than 24 hours contact with circulating blood, tissue, bone and dentin.

The biocompatibility testing referenced above cannot assure the biocompatibility of final or intermediate products made from Covestro Products or the suitability of such products for their use in a Medical Application, i.e., the test data cannot be used to conclude that any medical devices manufactured from the Covestro Products, meet the necessary requirements of ISO Standard 10993-1. It is the sole responsibility of the manufacturer of final end-use-product to conduct all necessary tests (including biocompatibility tests) and inspections and to evaluate the final product under actual end-use requirements.

The designation as “Medical Grade” does not mean that Covestro or anyone else has determined that the product is suitable for use in any particular Medical Application. Covestro makes no representations regarding the suitability of a Covestro Product for a particular Medical Application or final end-use product. A determination that the Covestro Product is suitable for use in a particular Medical Application or final end-use product can only be made by the purchaser of the Covestro product who utilizes it in a Medical Application and conduct all necessary testing and evaluation to support such a determination.

4. Appropriate Use of Covestro Products

Covestro has not performed clinical medical studies concerning the use of Covestro Products. Moreover, Covestro has neither sought nor received approval from the United States Food and Drug Administration (FDA) or other competent authorities from other regions for the use of Covestro Products in a Medical Application.

Covestro makes no representations or warranty regarding (and accepts no responsibility for determining) either: (a) the suitability of a Covestro Product for a particular Medical Application or final end-use product or (b) the adequacy of any warning relating to a Covestro Product or particular Medical Application or final end-use product. The suitability of Covestro Products in a given end-use environment is dependent upon various conditions including, without limitation, chemical compatibility, method of manufacture, temperature, part design, sterilization method, residual stresses, and external loads. It is the sole responsibility of the manufacturer of the final end-use product to determine the suitability (including biocompatibility) of all raw materials and components, including any Covestro Products, in order to ensure that the final product:

- meets relevant biocompatibility requirements and is otherwise safe for its end-use,
- performs or functions as intended
- is suitable for its intended use, and
- complies with all applicable FDA and other regulatory requirements.

It also is the sole responsibility of the manufacturer of the final end-use product to conduct all necessary tests and inspections and to evaluate the final product under actual end-use requirements and to adequately advise and warn purchasers, users, and/or learned intermediaries (such as physicians) of pertinent risks and fulfill any postmarket surveillance obligations.

Any decision regarding the appropriateness of a particular medical product in a particular clinical or Medical Application should be based on the judgment of the manufacturer, seller, the competent authority, and the treating physician. Covestro cannot weigh the benefits against the risks of a medical device and cannot offer a medical or legal judgment on the safety or efficacy of the use of a Covestro Product in a specific Medial Application.

5. Sterilization

The sterilization method and the number of sterilization cycles a medical device can withstand will vary depending upon type/grade of product, part design, processing parameters, sterilization temperature, and chemical environment. Therefore, the manufacturer of the end-use final product must evaluate each device to determine the sterilization method and the number of permissible sterilization cycles appropriate for actual end-use requirements and must adequately advise and warn purchasers, users, and/or learned intermediaries (such as physicians) of pertinent risks and limitations and must fulfill postmarket surveillance obligations.

During sterilization, through the use of steam autoclaving or boiling water techniques, polyurethane materials may hydrolyze to their corresponding precursor diamines (for example, aromatic polyurethane based on diphenylmethane diisocyanate (MDI) may hydrolyze and produce methylene dianiline (MDA), and aromatic polyurethane based on toluene diisocyanate (TDI) may hydrolyze and produce toluene diamine (TDA)).
This condition needs to be considered by the device manufacturer in defining sterilization conditions.

6. Test Data

Covestro may agree to provide existing test data and other information about its Medical Grade Covestro Products or to perform additional testing of Covestro Products. In so doing, Covestro does not assume any responsibility to determine the suitability of a Covestro Product for a particular Medical Application or final end-use product or to provide adequate warnings; moreover, any agreement by Covestro to provide such data and/or information does not relieve the manufacturer of its sole responsibility to properly evaluate its final end-use product under actual end-use requirements, nor does it relieve the manufacturer of any of its other responsibilities described in this Guidance Document.

7. Re-use of Medical Devices

Covestro does not warrant or represent that medical devices made from a Covestro Product (including a Medical Grade Covestro Product) are suitable for multiple uses. If the medical device is reprocessed and/or labeled for multiple uses, it is the responsibility of the manufacturer and/or reprocessor to determine the appropriate number of permissible uses by evaluating the device under actual sterilization, cleaning, and end-use conditions and to adequately advise and warn purchasers, users, and/or learned intermediaries (such as physicians) of pertinent risks and fulfill postmarket surveillance obligations.

8. FDA Master Files

If the FDA requires proprietary information about any Covestro Product as part of the 510(k) clearance or premarket application (PMA) approval process for the manufacturer's end-use final product, Covestro may establish a Drug or Device Master File and grant a right of reference to it, in order to allow the FDA to review such information without disclosing Covestros' proprietary information to the manufacturer.

9. Special Considerations

Only virgin Medical Grade Covestro Products have been tested according to certain tests under ISO 10993-1. Any use of regrind (for example, runners from mold flow channels or trim pieces) must be evaluated by the medical device manufacturer for suitability.

Over time, polyurethane materials may hydrolyze to their corresponding precursor diamines (for example, aromatic polyurethane based on diphenylmethane diisocyanate (MDI) may hydrolyze and produce methylene dianiline (MDA), and aromatic polyurethane based on toluene diisocyanate (TDI) may hydrolyze and produce toluene diamine (TDA)). This condition needs to be considered in any end-use application.

10. Risk or Failure

There is a risk of failure and adverse consequences with all Medical Applications and medical devices, including devices implanted in the human body and devices that are in contact with body fluids or tissues. There is also a risk of failure and adverse consequences for the use of Covestro products in connection with any Medical Application and medical device, including devices implanted in the human body.

11. Packaging and Labeling

The purchaser of Covestro Products shall be solely responsible for, or shall procure that the manufacturer and/or reprocesser of the medical device shall be responsible for (a) the design, production, assembly, packaging and labeling of the medical device which incorporates a Covestro Product and (b) assigning the purpose for which that Covestro Product is to be used. For the avoidance of doubt, Covestro is not the manufacturer of any of the medical devices for which the Covestro Products shall be sold and shall, to the extent permitted by law, not be liable as such.

12. Disclaimer of Warranty and Prohibition on Conflicting Oral Representations

1) To the extent permitted by law, COVESTRO MAKES NO REPRESENTATION, PROMISE, EXPRESS WARRANTY, IMPLIED WARRANTY OF MERCHANTABILITY, IMPLIED WARRANTY FOR A PARTICULAR PURPOSE, OR OTHER IMPLIED WARRANTY CONCERNING THE SUITABILITY OF ANY COVESTRO PRODUCT FOR USE IN ANY SPECIFIC MEDICAL DEVICE OR OTHER PRODUCT OR FOR ANY MEDICAL APPLICATION, AND

2) To the extent permitted by law, COVESTRO MAKES NO REPRESENTATION, PROMISE, EXPRESS WARRANTY, IMPLIED WARRANTY OF MERCHANTABILITY, IMPLIED WARRANTY FOR A PARTICULAR PURPOSE, OR OTHER IMPLIED WARRANTY CONCERNING SUITABILITY OF ANY MEDICAL DEVICE OR OTHER PRODUCT MADE, WHOLLY OR IN PART, FROM ANY COVESTRO PRODUCT.

   NO COVESTRO REPRESENTATIVE HAS THE AUTHORITY TO MAKE ANY ORAL PREPRESENTATION THAT CONFLICTS WITH ANY PORTION OF THIS GUIDANCE.

13. Responsibility to Forward This Guidance Document

If the purchaser of any Medical Grade Covestro Product is not the manufacturer of the final end-use product, it is the responsibility of the purchaser to forward this Guidance Document to such manufacturer.

14. Questions

In case of questions, please contact:

Within NAFTA
email: psra_nafta_customer_requests@covestro.com

Outside NAFTA
email: productsafety@covestro.com

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