

**510(k) Summary per SMDA 1990
and 21 CFR 807.92
AnnuloFlo™ System**

JUL 25 1997

Sulzer Carbomedics Inc.

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Date of Summary: May 2, 1997

Classification Name: Annuloplasty Ring

Common Name: Annuloplasty Ring

Proprietary Name: AnnuloFlo™ System

Predicate Device: Carpentier-Edwards Classic™ Annuloplasty Ring

Statement of Intended Use: The AnnuloFlo™ System is intended for use in the repair of the human cardiac valve.

Statement of Indications for Use: The AnnuloFlo™ annuloplasty ring is indicated as a reinforcement for repair of the human cardiac mitral valve damaged by acquired or congenital disease, or as a replacement for a previously implanted annuloplasty ring. The annuloplasty ring should be used only in cases where visual inspection confirms that the valve is repairable and does not require replacement.

Description of Device: The AnnuloFlo™ System consists of an annuloplasty ring, and a complete set of instrumentation provided in a tray to properly size the annulus and implant the annuloplasty ring. The annuloplasty ring is designed to reinforce the native annulus while retaining the native valve apparatus.

Materials: The AnnuloFlo™ annuloplasty ring employs materials with a long and satisfactory history of use in cardiovascular applications, including materials used in the CarboMedics® Prosthetic Heart Valve (CPHV). All materials are non-ferrous, have extensive history in implants and do not present a significant risk during Magnetic Resonance Imaging (MRI). The annuloplasty ring consists of an ASTM (Ti-6Al-4V) titanium stiffener ring enclosed in a sewing ring of silicone elastomer tubing purchased from a major U.S. manufacturer, and knitted polyester fabric (VP1200) manufactured by Sulzer Vascutek Ltd. The sewing ring is coated with Biolite® carbon, manufactured by Sulzer Carbomedics Inc.

Design: The mitral AnnuloFlo™ annuloplasty ring is kidney shaped. The curved posterior segment of the ring corresponds to the native posterior leaflet. The open segment of the ring corresponds to the anterior leaflet.

Testing: The AnnuloFlo™ annuloplasty ring uses materials common to the CPHV, including titanium, polyester fabric, polyester suture, and Biolite® Carbon coating. Material biocompatibility testing has been completed that supports that these materials are non-toxic, non-hemolytic, and non pyrogenic. Mechanical testing for the AnnuloFlo™ annuloplasty ring includes suture retention testing to demonstrate that the sewing ring fabric is comparable to fabrics used in other vascular prostheses. The AnnuloFlo™ annuloplasty ring shares the same packaging as the CPHV, and is sterilized in the same sterilizers, and utilizes the same sterilization cycle as the CPHV. Package integrity testing to validate a five year shelf life has been conducted on this package.

Technological Comparison: The AnnuloFlo™ annuloplasty ring intended use, design, function, and composition are similar to the Classic™ Annuloplasty Ring with the addition of Biolite®, a low temperature isotropic carbon coating, on the sewing ring of the AnnuloFlo™ annuloplasty ring. Biolite® has a long and successful history of use in cardiovascular applications, including the CPHV.



Food and Drug Administration
9200 Corporate Boulevard
Rockville MD 20850

Mr. Michael C. Morton
Manager, Regulatory Affairs
Sulzer Carbomedics, Inc.
1300 East Anderson Lane
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JUL 25 1997

Re: K970375
AnnuloFlo™ System, Mitral Model AR700
Regulatory Class: III (Three)
Product Code: KRH
Dated: January 31, 1997
Received: February 3, 1997

Dear Mr. Morton:

We have reviewed your Section 510(k) notification of intent to market the device referenced above and we have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments. You may, therefore, market the device, subject to the general controls provisions of the Federal Food, Drug, and Cosmetic Act (act). The general controls provisions of the act include requirements for registration, listing of devices, good manufacturing practices, and labeling, and prohibitions against misbranding and adulteration.

If your device is classified (see above) into either class II (Special Controls) or class III (Premarket Approval) it may be subject to such additional controls. Existing major regulations affecting your device can be found in the Code of Federal Regulations, Title 21, Parts 800 to 895. A substantially equivalent determination assumes compliance with the Good Manufacturing Practice for Medical Devices: General (GMP) regulation (21 CFR Part 820) and that, through periodic GMP inspections, FDA will verify such assumptions. Failure to comply with the GMP regulation may result in regulatory action. In addition, the Food and Drug Administration (FDA) may publish further announcements concerning your device in the Federal Register. Please note: this response to your premarket notification submission does not affect any obligation you might have under section 531 through 542 of the Act for devices under the Electronic Product Radiation Control provisions, or other Federal laws or regulation.

Under Section 522(a) of the act, manufacturers of certain types of devices identified by the Act or designated by FDA are required to conduct postmarket surveillance studies. FDA has identified under Section 522(a)(1)(A) the device cleared for marketing by this letter as requiring postmarket surveillance.

Within thirty (30) days of first introduction or delivery for introduction of this device into interstate commerce you are required to submit to FDA certification of the date of introduction into interstate commerce, a detailed protocol which describes the postmarket surveillance study, and a detailed profile of the study's principal investigator that clearly establishes the qualifications and experience of the individual to conduct the proposed study. For your information, general guidance on preparing a protocol for a postmarket surveillance study is enclosed.

Submit five (5) copies to:

Center for Devices and Radiological Health
Postmarket Surveillance Studies Document Center
Room 3083 (HFZ-544)
1350 Piccard Drive
Rockville, Maryland 20850

Within sixty (60) days of receipt of your protocol, FDA will either approve or disapprove it and notify you of the Agency's action in writing. You should not begin your postmarket surveillance study of this device until the protocol has been approved. Data generated under an unapproved protocol may not satisfy your obligation under section 522. Please note that you must continue to collect and report data needed to maintain compliance with Medical Device Reporting regulations (21 CFR 803).

Failure to certify accurately the date of initial introduction of your device into interstate commerce, to submit timely an acceptable protocol, or to undertake and complete an FDA approved postmarket surveillance study consistent with the protocol will be considered violations of section 522. In accordance with the Medical Device Amendments of 1992, failure of a manufacturer to meet its obligations under section 522 is a prohibited act under section 301(q)(1)(C) of the Act (21 U.S.C. 331 (q)(1)(C)). Further, under section 502(t)(3) of the act (21 U.S.C. 352(t)(3)), a device is misbranded if there is a failure or refusal to comply with any requirement under section 522 of the act. Violations of sections 301 or 502 may lead to regulatory actions including seizure of your product, injunction, prosecution, or civil money penalties.

If you have questions specifically concerning postmarket surveillance study requirements, contact the Postmarket Surveillance Studies Branch at (301) 594-0639.

In addition, on August 16, 1993, the Final Rule for Device Tracking was published in the Federal Register, pages 43442-43455 (copy enclosed). Be advised that under Section 519(e) of the Act as amended by the Safe Medical Devices Act of 1990, FDA has identified the above device as a device which requires tracking. Because the device is subject to tracking, you are required to adopt a method of tracking that follows the devices through the distribution chain and then identifies and follows the patients who receive them. The specific

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requirement of the regulation are found in 21 CFR 821 as described in the August 16, 1993 Federal Register beginning on page 43447.

This letter will allow you to begin marketing your device as described in your 510(k) premarket notification. The FDA finding of substantial equivalence of your device to a legally marketed predicate device results in a classification for your device and thus, permits your device to proceed to the market.

If you desire specific advice for your device on our labeling regulation (21 CFR Part 801 and additionally 809.10 for in vitro diagnostic devices), please contact the Office of Compliance at (301) 594-4648. Additionally, for questions on the promotion and advertising of your device, please contact the Office of Compliance at (301) 594-4639. Other general information on your responsibilities under the act may be obtained from the Division of Small Manufacturers Assistance at its toll free number (800) 638-2041 or (301) 443-6597, or at its internet address "<http://www.fda.gov/cdrh/dsmamain.html>."

Sincerely yours,

for 

Thomas J. Callahan, Ph.D.
Director
Division of Cardiovascular, Respiratory,
and Neurological Devices
Office of Device Evaluation
Center for Devices and
Radiological Health

Enclosures

"INDICATIONS FOR USE" STATEMENT

510(K) Number: Unknown

Device Name: AnnuloFlo™ System

Indications for Use: The AnnuloFlo™ annuloplasty ring is indicated as a reinforcement for repair of the human cardiac mitral valve damaged by acquired or congenital disease, or as a replacement for a previously implanted annuloplasty ring. The annuloplasty ring should be used only in cases where visual inspection confirms that the valve is repairable and does not require replacement.

(PLEASE DO NOT WRITE BELOW THIS LINE - CONTINUE ON ANOTHER PAGE IF NECESSARY)

Concurrence of CDRH, Office of Device Evaluation (ODE)

Prescription Use
 (Per 21 CFR 801.109)

OR

Over-The-Counter Use

(Optional Format 1-2-96)

Lisa Kennell for BLU
(Division Sign-Off)
Division of Cardiovascular, Respiratory,
and Neurological Devices
510(k) Number K970375