Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.

NOV 1 2 2004

510(k) Summary

Submitter: Biocompatibles UK Ltd.
Weydon Lane
Chapman House
Weydon Lane, Farnham, Surrey
+44 1252732732

Contact: Dr. Alistair Taylor

510(k) Numbers and Product Codes of equivalent devices.

Biocure, Inc,
GelSpheres™ Microspheres
510K Number: #K023089
Product Code: HCG
CFR Section: 882.5950

Biocompatibles UK Ltd.
GelSpheres™ Microspheres
Bead Block™ Compressible Microspheres
510K Number: #K033761
Product Code: HCG
CFR Section: 882.5950

Indications for Use and Intended Population

"GelSpheres™/Bead Block™ Compressible Microspheres are indicated for Embolization of hypervascular tumors and arteriovenous malformations (AVM's).

Device Description

GelSpheres™ and Bead Block™ Compressible Microspheres are preformed soft, deformable microspheres that occlude arteries for the purpose of blocking the blood flow to a target tissue, such as a hypervascular tumor or arteriovenous malformations (AVM's). GelSpheres™ and Bead Block ™ Compressible Microspheres consist of a macromer derived from polyvinyl alcohol (PVA). The fully polymerized microsphere is approximately 90% water and is compressible to approximately 20-30% by diameter. Bead Block™ Compressible Microspheres is dyed blue (GelSpheres™ are

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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K047231
2/3

available in natural color) to aid in the visualization of the microspheres in the delivery syringe. The microspheres can be delivered through typical microcatheters in the 1.8-5Fr range.

GelSpheres™ Microspheres is supplied sterile and packaged in sealed glass vials. Bead Block™ Compressible Microspheres is supplied sterile and packaged in a polycarbonate syringe. Two quantities will be available in a vial: (1) 1.0 mL GelSpheres™ /Bead Block™ Compressible Microspheres in sterile physiologic buffered saline (PBS) to a volume of 8 mL, and (2) 2.0mL GelSpheres™/Bead Block™ Compressible Microspheres in sterile PBS to a volume of 8 mL.

GelSpheres™ and Bead Block Compressible Microspheres are supplied in several unit sizes covering the range from 100μm to 1200μm diameter. At the time of use, GelSpheres™/Bead Block™ Compressible Microspheres is mixed with a nonionic contrast agent, e.g. Omnipaque, to make a 30-50% by weight solution. The bolus of contrast agent elutes from the vascular bed to leave a radiolucent, embolized vessel.

Similarities and Differences to Predicates

The Intended Use of GelSpheres™ /Bead Block™ Compressible Microspheres and the predicate device are the same and unchanged other than product names. This pre-market notification addresses the change of the final packager from BioCure, inc to Biocompatibles UK LTD.

There are more similarities than differences when comparing Biocompatibles, GelSpheres™/Bead Block™ to the predicate devices.

Performance Standards

GelSpheres™/BeadBlock Compressible Microspheres meet the following Performance Standards:

- Guidance For Industry; 2004: FDA Guidance for Neurological Embolization Products
- ISO/EN 10993-1; 1997 Biological Evaluation of Medical Devices, Part I: Evaluation and Testing
- ISO/EN 10993-3; 1993 Biological Evaluation of Medical Devices, Part 3: Tests for genotoxicity, carcinogenicity and reproductive toxicity.
- ISO/EN 10993-4; 1993 Biological Evaluation of Medical Devices, Part 4: Selection of tests for interaction with blood.

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- ISO/EN 10993-6; 1995 Biological Evaluation of Medical Devices, Part 6: Test for local effects after implantation.
- ISO/EN 10993-10; 1995 Biological Evaluation of Medical Devices, Part 10: Tests for Irritation and Sensitization.
- ISO/EN 10993-11; 1993 Biological Evaluation of Medical Devices, Part 11: Tests for Systemic Toxicity.
- ISO/EN 10993-13; 1995 Biological Evaluation of Medical Devices, Part 13: Identification and Quantification of potential degradation products from polymers.
- ISO/EN 11607; 1997 – Packaging for terminally sterilized products.
- AAMI TIR 22;1998 – Guidance for application of EN 11607, Packaging for terminally sterilized products
- AAMI 11134; 1993 – Sterilization of Health Care Products – Requirements for validation and routine control – Industrial moist heat sterilization 2nd edition.
- ANSI/AAMI/ISO 14937; 2000 – Sterilization of Health Care Products – Characterization of a Sterilizing Agent and the Development, Validation and Routine Control of a Sterilization Process for Medical Devices.
- EN 554: Sterilization of Medical Devices – validation and Routine Control of Sterilization by Moist Heat

Conclusion

There are more similarities than differences between the predicate device and the Biocompatibles GelSpheres™/Bead Block™ Compressible Microspheres. The product, manufacturing and primary packaging are unchanged from K023089/K033761. The predicate device and GelSpheres™/Bead Block™ Compressible Microspheres have the same intended use, warnings and contraindications. The predicate device and GelSpheres™/Bead Block™ Compressible Microspheres are identical in design, and unchanged from K023089. When used in accordance with the instructions for use, by qualified personnel, the Biocompatibles GelSpheres™/Bead Block™ Compressible Microspheres are safe and effective, as indicated, for the intended use.

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration
9200 Corporate Boulevard
Rockville MD 20850

NOV 1 2 2004

Biocompatibles U.K. Ltd.
C/o John Greenbaum
Generic Devices Consulting, Inc.
20310 SW 48th Street
Ft. Lauderdale, Florida 33332

Re: K042231
Trade/Device Name: GelSpheres™ Microspheres
Bead Block™ Compressible Microspheres
Regulation Number: 21 CFR 882.5950
Regulation Name: Artificial embolization device
Regulatory Class: III
Product Code: HCG
Dated: August 14, 2004
Received: August 17, 2004

Dear Mr. Greenbaum:

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 (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. 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.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), 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 898. In addition, FDA may publish further announcements concerning your device in the Federal Register.

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); good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820); and if applicable, the electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR 1000-1050.

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.

This letter will allow you to begin marketing your device as described in your Section 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), please contact the Office of Compliance at (240) 276-0115. Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21CFR Part 807.97). You may obtain other general information on your responsibilities under the Act from the Division of Small Manufacturers, International and Consumer Assistance at its toll-free number (800) 638-2041 or (301) 443-6597 or at its Internet address http://www.fda.gov/cdrh/dsma/dsmamain.html

Sincerely yours,

for Miriam C. Provost

Celia M. Witten, Ph.D., M.D.
Director
Division of General, Restorative
and Neurological Devices
Office of Device Evaluation
Center for Devices and
Radiological Health

Enclosure

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

Records processed under FOIA Request #2015-859; Released by CDRH on 07/11/2016 K042231

007

510(k) Number(if known):_____

Device Name: GelSpheres™ Microspheres
Bead Block™ Compressible Microspheres

Indications For Use:

"GelSpheres™ Microspheres & Bead Block™ Compressible Microspheres is intended for embolization of hypervascular tumors and arteriovenous malformations."

Miriam C. Provost
(Division Sign-Off)
Division of General, Restorative, and Neurological Devices

510(k) Number K042231

Prescription Use_X_ OR Over-The-Counter Use___
(Per 21 CRF 801.109)

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

Concurrence of CDRH, Office of Device Evaluation (ODE)

(Optional Format 1-2-96)

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration
9200 Corporate Boulevard
Rockville MD 20850

NOV 1 2 2004

Biocompatibles U.K. Ltd.
C/o John Greenbaum
Generic Devices Consulting, Inc.
20310 SW 48th Street
Ft. Lauderdale, Florida 33332

Re: K042231
Trade/Device Name: GelSpheres™ Microspheres
Bead Block™ Compressible Microspheres
Regulation Number: 21 CFR 882.5950
Regulation Name: Artificial embolization device
Regulatory Class: III
Product Code: HCG
Dated: August 14, 2004
Received: August 17, 2004

Dear Mr. Greenbaum:

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 (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. 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.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), 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 898. In addition, FDA may publish further announcements concerning your device in the Federal Register.

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Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.

This letter will allow you to begin marketing your device as described in your Section 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.

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Sincerely yours,

for Miriam C. Provost

Celia M. Witten, Ph.D., M.D.
Director
Division of General, Restorative
and Neurological Devices
Office of Device Evaluation
Center for Devices and
Radiological Health

Enclosure

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016 K042231

007

510(k) Number(if known):_____

Device Name: GelSpheres™ Microspheres
Bead Block™ Compressible Microspheres

Indications For Use:

"GelSpheres™ Microspheres & Bead Block™ Compressible Microspheres is intended for embolization of hypervascular tumors and arteriovenous malformations."

Miriam C. Provost

(Division Sign-Off)
Division of General, Restorative, and Neurological Devices

510(k) Number K042231

Prescription Use_X_ OR Over-The-Counter Use___
(Per 21 CRF 801.109)

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

Concurrence of CDRH, Office of Device Evaluation (ODE)

(Optional Format 1-2-96)

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DEPARTMENT OF HEALTH AND HUMAN SERVICES Public Health Service

Food and Drug Administration
Center for Devices and
Radiological Health
Office of Device Evaluation
Document Mail Center (HFZ-401)
9200 Corporate Blvd.
Rockville, Maryland 20850

August 17, 2004

BIOCOMPATIBLES U.K. LIMITED
C/O GENERIC DEVICES CONSULTING, INC
20310 SW 48TH STREET
FT. LAUDERDALE, FL 33332
ATTN: JOHN GREENBAUM

510(k) Number: K042231
Received: 17-AUG-2004
Product: GELSPHERES MICROSPHERES AND BEAD BLOCK COMPRESSIBLE

The Food and Drug Administration (FDA), Center for Devices and Radiological Health (CDRH), has received the Premarket Notification you submitted in accordance with Section 510(k) of the Federal Food, Drug, and Cosmetic Act(Act) for the above referenced product. We have assigned your submission a unique 510(k) number that is cited above. Please refer prominently to this 510(k) number in any future correspondence that relates to this submission. We will notify you when the processing of your premarket notification has been completed or if any additional information is required. YOU MAY NOT PLACE THIS DEVICE INTO COMMERCIAL DISTRIBUTION UNTIL YOU RECEIVE A LETTER FROM FDA ALLOWING YOU TO DO SO.

On May 21, 2004, FDA issued a Guidance for Industry and FDA Staff entitled, "FDA and Industry Actions on Premarket Notification (510(k)) Submissions: Effect on FDA Review Clock and Performance Assessment". The purpose of this document is to assist agency staff and the device industry in understanding how various FDA and industry actions that may be taken on 510(k)s should affect the review clock for purposes of meeting the Medical Device User Fee and Modernization Act. Please review this document at http://www.fda.gov/cdrh/mdufma/guidance/1219.html.

Please remember that all correspondence concerning your submission MUST be sent to the Document Mail Center (DMC)(HFZ-401) at the above letterhead address. Correspondence sent to any address other than the one above will not be considered as part of your official premarket notification submission. Also, please note the new Blue Book Memorandum regarding Fax and E-mail Policy entitled, "Fax and E-Mail Communication with Industry about Premarket Files Under Review". Please refer to this guidance for information on current fax and e-mail practices at www.fda.gov/cdrh/ode/a02-01.html.

You should be familiar with the regulatory requirements for medical device available at Device Advice http://www.fda.gov/cdrh/devadvice/". If you have other procedural or policy questions, or want information on how to check on the status of your submission, please contact DSMICA at (301) 443-6597 or its toll-free number (800) 638-2041, or at their Internet address http://www.fda.gov/cdrh/dsmamain.html or me at (301)594-1190.

Sincerely yours,

Marjorie Shulman
Supervisory Consumer Safety Officer
Office of Device Evaluation
Center for Devices and Radiological Health

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.

K042231

John Greenbaum
Generic Devices Consulting, Inc.

20310 SW 48th Street
Ft. Lauderdale, FL. 33332

Fax (954) 680-0161
Phone (954) 680-2548
Mobile (954) 309-6715
Email johngreenbaum@Compuserve.com

August 14,2004

Office of Device Evaluation
Document Mail Center (HFZ-401)
Center for Devices and Radiological Health
Food and Drug Administration
9200 Corporate Blvd.
Rockville, Maryland 20850

Dear Sir/Madam,

Please find enclosed, a Pre-market Notification for GelSpheres™/Bead Block™ Compressible Microspheres in Behalf of Biocompatibles UK Ltd.

Biocompatibles is the primary distributor for GelSpheres™/Bead Block™ Compressible Microspheres, manufactured by Biocure, Inc.

In this Pre-market Notification, Biocompatibles UK Ltd. becomes a initial manufacturer of GelSpheres™ and Bead Block™ at their facilities in Farnham, UK.

Generic Devices Consulting (John Greenbaum) is the U.S. Foreign Agent for Biocompatibles UK. Ltd. and is the official correspondent for this pre-market notification. Biocompatibles has a payment account established and a check for the filing fee for this pre-market notification has been sent concurrently with the filing.

Please do not hesitate to call if you have any questions or need additional information.

Sincerely,

John Greenbaum

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II

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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[redacted]

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Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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Form Approved:OMB No. 0910-0511. Expiration Date: August 31, 2006. See instructions for OMB Statement.

DEPARTMENT OF HEALTH AND HUMAN SERVICES
FOOD AND DRUG ADMINISTRATION
MEDICAL DEVICE USER FEE COVER SHEET

PAYMENT IDENTIFICATION NUMBER: (b)(4) [redacted]
Write the Payment Identification Number on your check.

A completed Cover Sheet must accompany each original application or supplement subject to fees. The following actions must be taken to properly submit your application and fee payment:

1. Electronically submit the completed Cover Sheet to the Food and Drug Administration (FDA) before payment is sent.
2. Include a printed copy of this completed Cover Sheet with a check made payable to the Food and Drug Administration. Remember that the Payment Identification Number must be written on the check.
3. Mail Check and Cover Sheet to the US Bank Lock Box, FDA Account, P.O. Box 956733, St. Louis, MO 63195-6733. (*Note: In no case should payment be submitted with the application.*)
4. If you prefer to send a check by a courier, the courier may deliver the check and Cover Sheet to: US Bank, Attn: Government Lockbox 956733, 1005 Convention Plaza, St. Louis, MO 63101. (Note: This address is for courier delivery only. Contact the US Bank at 314-418-4821 if you have any questions concerning courier delivery.)
5. For Wire Transfer Payment Procedures, please refer to the MDUFMA Fee Payment Instructions at the following URL: http://www.fda.gov/cdrh/mdufma/faqs.html#3a. You are responsible for paying all fees associated with wire transfers.
6. Include a copy of the completed Cover Sheet in volume one of the application when submitting to the FDA at either the CBER or CDRH Document Mail Center.

1. COMPANY NAME AND ADDRESS (Include name, street address, city, state, country, and post office code)

BIOCOMPATIBLES UK LTD
CHAPMAN HOUSE
FARNHAM BUSINESS PARK
WEYDON LANE
FARNHAM, GU9 8QL
UNITED KINGDOM

1.1 EMPLOYER IDENTIFICATION NUMBER (EIN)

2. CONTACT NAME
John Greenbaum JOHN GREENBAUM

2.1 E-MAIL ADDRESS
johngreenbaum@compuserve.com

2.2 TELEPHONE NUMBER (Include Area Code)
954-610-0178

2.3 FACSIMILE (FAX) NUMBER (Include Area Code)
954-680-0161

3. TYPE OF PREMARKET APPLICATION (Select one of the following in each column; if you are unsure, please refer to the application descriptions at the following web site: http://www.fda.gov/oc/mdufma

Select an application type:

- [x] Premarket notification (510(k)): except for third party reviews
- [ ] Biologics License Application (BLA)
- [ ] Premarket Approval Application (PMA)
- [ ] Modular PMA
- [ ] Product Development Protocol (PDP)
- [ ] Premarket Report (PMR)

3.1 Select one of the types below:

- [x] Original Application

Supplement Types:

- [ ] Efficacy (BLA)
- [ ] Panel Track (PMA, PMR, PDP)
- [ ] Real-Time (PMA, PMR, PDP)
- [ ] 180-day (PMA, PMR, PDP)

4. ARE YOU A SMALL BUSINESS? (See the instructions for more information on determining this status.)

- [ ] YES, I meet the small business criteria and have submitted the required qualifying documents to FDA
- [x] NO, I am not a small business

4.1 If Yes, please enter your Small Business Decision Number:

5. IS THIS PREMARKET APPLICATION COVERED BY ANY OF THE FOLLOWING USER FEE **EXCEPTIONS**? IF SO, CHECK THE APPLICABLE EXCEPTION

- [ ] This application is the first PMA submitted by a qualified small business, including any affiliates, parents, and partner firms
- [ ] This biologics application is submitted under section 351 of the Public Health Service Act for a product licensed for further manufacturing use only
- [ ] The sole purpose of the application is to support conditions of use for a pediatric population
- [ ] The application is submitted by a state or federal government entity for a device that is not to be distributed commercially

6. IS THIS A SUPPLEMENT TO A PREMARKET APPLICATION FOR WHICH FEES WERE WAIVED DUE TO SOLE USE IN A PEDIATRIC POPULATION THAT NOW PROPOSES CONDITION OF USE FOR ANY ADULT POPULATION? (If so, the application is subject to the fee that applies for an original premarket approval application (PMA).)

- [ ] YES
- [x] NO

7. USER FEE PAYMENT AMOUNT SUBMITTED FOR THIS PREMARKET APPLICATION (FOR FISCAL YEAR 2004)

(b)(4) [redacted]

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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100

CENTER FOR DEVICES AND RADIOLOGICAL HEALTH

Premarket Submission Cover Sheet

Date of Submission: **08/13/2003**	FDA Document Number:

Section A — Type of Submission

PMA
- ☐ Original Submission
- ☐ Modular Submission
- ☐ Amendment
- ☐ Report
- ☐ Report Amendment

PMA Supplement
- ☐ Regular
- ☐ Special
- ☐ Panel Track
- ☐ 30-day Supplement
- ☐ 30-day Notice
- ☐ 135-day Supplement
- ☐ Real-time Review
- ☐ Amendment to PMA Supplement

PDP
- ☐ Presubmission
- ☐ Original PDP
- ☐ Notice of intent to start clinical trials
- ☐ Intention to submit Notice of Completion
- ☐ Notice of Completion
- ☐ Amendment to PDP
- ☐ Report

510(k)
- ■ Original Submission:
- ■ Traditional
  - ☐ Special
  - ☐ Abbreviated
- ☐ Additional information:
  - ☐ Traditional
  - ☐ Special
  - ☐ Abbreviated

Meeting
- ☐ Pre-IDE meeting
- ☐ Pre-PMA meeting
- ☐ Pre-PDP meeting
- ☐ 180-day meeting
- ☐ Other (specify):

IDE
- ☐ Original Submission
- ☐ Amendment
- ☐ Supplement

Humanitarian Device Exemption
- ☐ Original Submission
- ☐ Amendment
- ☐ Supplement
- ☐ Report

Class II Exemption
- ☐ Original Submission
- ☐ Additional information

Evaluation of Automatic Class III Designation
- ☐ Original Submission
- ☐ Additional information

Other Submission

Describe Submission:

Section B — Applicant or Sponsor

Company/Institution Name: **Biocompatibles UK Ltd.**	Establishment Registration Number: **3002124545**
Division Name (if applicable):	Phone Number (include area code): **+44 (0) 1252 732732**
Street Address: **Chapman House, Farnham Business Park , Weydon Lane**	FAX Number (include area code): **+44 (0) 1252 732888**

City:	State/Province:	Country:
Farnham	**Surrey GU9 8QL, U.K.**	**England, United Kingdom**

Contact Name: **Dr. Alistair Taylor**	
Contact Title: **Director of Regulatory Affairs**	Contact e-mail address: **alistair.taylor@biocompatibles.com**

Section C — Submission Correspondent (if different from above)

Company/Institution Name: **Generic Devices Consulting, Inc.**	Establishment Registration Number: **N/A**
Division Name (if applicable):	Phone Number (include area code): **954-680-0161 or 954-610-0178**
Street Address: **20310 SW 48th Street**	FAX Number (include area code): **954-680-0161**

City:	State/Province:	Country:
Ft. Lauderdale	**Florida 33332**	**USA**

Contact Name: **John Greenbaum**	
Contact Title: **Consultant**	Contact e-mail address: **Johngreenbaum@compuserve.com**

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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Section D1 — Reason for Submission – PMA, PDP, or HDE

- ☐ New Device
- ☐ Withdrawal
- ☐ Additional or expanded indications
- ☐ Licensing Agreement
- ☐ Process Change
  - ☐ Manufacturing
  - ☐ Sterilization
  - ☐ Packaging
  - ☐ Other (specify below)
- ☐ Response to FDA Correspondence:
  - ☐ Request for applicant hold
  - ☐ Request for removal of applicant hold
  - ☐ Request for extension
  - ☐ Request to remove or add manufacturing site
- ☐ Other reason (specify):
- ☐ Change in design, component, or specification:
  - ☐ Software
  - ☐ Color Additive
  - ☐ Material
  - ☐ Specification
  - ☐ Other (specify below)
- ☐ Labeling Change:
  - ☐ Indications
  - ☐ Instructions
  - ☐ Performance Characteristics
  - ☐ Shelf Life
  - ☐ Trade Name
  - ☐ Other (specify below)
- ☐ Location Change:
  - ☐ Manufacturer
  - ☐ Sterilizer
  - ☐ Packager
  - ☐ Distributor
- ☐ Report Submission:
  - ☐ Annual or periodic
  - ☐ Post-approval Study
  - ☐ Adverse Reaction
  - ☐ Device Defect
  - ☐ Amendment
- ☐ Change in ownership
- ☐ Change in correspondent

Section D2 — Reason for Submission – IDE

- ☐ New Device
- ☐ Addition of institution
- ☐ Expansion/extension of study
- ☐ IRB Certification
- ☐ Request hearing
- ☐ Request waiver
- ☐ Termination of Study
- ☐ Withdrawal of application
- ☐ Unanticipated adverse effect
- ☐ Notification of Emergency Use
- ☐ Compassionate use request
- ☐ Treatment IDE
- ☐ Continuing availability request
- ☐ Other reason (specify):
- ☐ Change in:
  - ☐ Correspondent
  - ☐ Design
  - ☐ Informed consent
  - ☐ Manufacturer
  - ☐ Manufacturing process
  - ☐ Protocol – feasibility
  - ☐ Protocol Other
  - ☐ Sponsor
- ☐ Report Submission:
  - ☐ Current investigator
  - ☐ Annual Progress
  - ☐ Site waiver limit reached
  - ☐ Final
- ☐ Response to FDA letter concerning:
  - ☐ Conditional approval
  - ☐ Deemed approved
  - ☐ Deficient final report
  - ☐ Deficient progress report
  - ☐ Deficient investigator report
  - ☐ Disapproval
  - ☐ Request extension of time to respond to FDA
  - ☐ Request meeting

Section D3 — Reason for Submission – 510(k)

- ☐ New Device
- ☐ Additional or expanded indications
- ■ Other (specify): **New Manufacturing Site**
- ☐ Change in Technology
- ☐ Change in Design
- ☐ Change in Materials
- ☐ Change in Manufacturing process

Section E — Additional Information on 510(k) Submissions

Product codes of devices to which substantial equivalence is claimed:

1	**HCG**	2		3		4		5		6	
7		8		9		10		11		12	

Summary of, or statement concerning, safety and effectiveness date:

- ■ 510(k) summary attached
- ☐ 510(k) statement

Information on devices to which substantial equivalence is claimed:

510(k) Number	Trade or proprietary or model name	Manufacturer
1 **K023089**	1 **GelSpheres™ Embolic Agent**	1 **BioCure, Inc.**
2 **K033761**	2 **Gelspheres™ /Bead Block™ Compressible Microspheres**	2 **Biocompatibles UK Ltd.**
3	3	3
4	4	4
5	5	5
6	6	6

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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Section F — Product Information – Applicable to All Applications

Common or usual name or classification name:

Artificial Embolization Device

	Trade or proprietary or model name		Model Number
1	GelSpheres™ Microspheres	1	Various
2	Bead Block™ Compressible Microspheres	2	Various
3		3	
4		4	
5		5	

FDA document numbers of all prior related submissions (regardless of outcome):

1	K023089	2	K033761	3		4		5	6
7		8		9		10		11	12

Data included in submission: ■ Laboratory Testing ☐ Animal Trials ☐ Human Trials

Section G — Product Classification – Applicable to All Applications

Product Code: **HCG**

C.F.R. Section: **882.5950**

Device Class: ☐ Class I ■ Class II ☐ Class III ☐ Unclassified

Classification Panel: **Neurological**

Indications (from labeling):

GelSpheres™ and Bead Block™ Compressible Microspheres (Artificial Embolization Agent) are indicated for Embolization of hypervascular tumors and arteriovenous malformations (AVM's).

Note: Submission of this information does not affect the need to submit a 2891 or 2891a Device Establishment Registration form.

FDA Document Number:

Section H — Manufacturing / Packaging / Sterilization Sites

■ Original ☐ Add ☐ Delete

FDA establishment registration number: **3002124545**

■ Manufacturer ☐ Contract Sterilizer ☐ Contract Manufacturer ☐ Repackager/Relabeler

Company / Institution Name: **Biocompatibles UK Ltd.**

Establishment Registration Number: **3002124545**

Division Name (if applicable):

Phone Number (include area code): **+44 (0) 1252 732732**

Street Address: **Chapman House, Farnham Business Park , Weydon Lane**

FAX Number (include area code): **+44 (0) 1252 732888**

City: **Farnham**

State/Province: **Surrey**

Country: **England**

Zip/Postal Code: **Surrey GU9 8QL**

Contact Name: **Dr. Alistair Taylor**

Contact Title: **Director, Regulatory affairs**

Contact e-mail address: **alistair.taylor@biocompatibles.com**

■ Original ☐ Add ☐ Delete

FDA establishment registration number: **NA**

☐ Manufacturer ☐ Contract Manufacturer ■ Contract Sterilizer ☐ Repackager/Relabeler

Company / Institution Name: **Trust Sterile Services**

Establishment Registration Number: **N/A**

(b)(4)

[redacted]

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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2.0 General Information

2.1 General Information

Biocompatibles UK Ltd. distributes the GelSpheres™ Microspheres and Bead Block™ Compressible Microspheres (artificial Embolization Agent) manufactured by BioCure, Inc. GelSpheres™ & Bead Block are calibrated microspheres intended for the embolization of hypervascular tumors and arteriovenous malformations. GelSpheres™ and Bead Block™ require use by a qualified clinician (interventional radiologist) who has the appropriate training and expertise to use embolic products.

It is the intent of Biocompatibles UK Ltd., in this pre-market notification, to market the GelSpheres™ and Bead Block™, manufactured at the facilities of Biocompatibles UK Ltd. This is a change in manufacturing location. (b)(4) [redacted] (b)(4) [redacted]

2.2 Legally Marketed Device:

a. Trade / Proprietary Name: GelSpheres™ Microspheres

Bead Block™ Compressible Microspheres

b. Classification Name / code Common Name:

Artificial embolization device
(HCG) Embolic Agent

c. Establishment Registration: # 3002124545

c. Manufacturing Facility: **Biocompatibles UK Ltd.**
Chapman House
Farnham Business Park
Weydon Lane
Farnham, Surrey,
England GU9 8QL

e. Classification: Class II

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Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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f. Reason for 510(k): Change in manufacturing site

g. Equivalent Devices: GelSpheres™ and Bead Block™ is substantially equivalent to:

- GelSpheres™ Microspheres BioCure, Inc, (K023089)
- Gelspheres™ Microspheres Bead Block™ Compressible Microspheres Biocompatibles UK Ltd. (K033761)

h. Standards / Special Controls:

Artificial embolization devices have no special controls as published by FDA in 2004. Biocompatibles UK Ltd. meets the requirements of the Guidance for Neurological embolization devices (Feb 2004). Biocompatibles UK Ltd. GelSpheres™ conform to the following recognized standards.

- 21CFR820; 1996: Quality System Regulation
- Guidance For Industry; 2004: FDA Guidance for Neurological Embolization Products
- ISO/EN 10993-1; 1997 Biological Evaluation of Medical Devices, Part I: Evaluation and Testing
- ISO/EN 10993-3; 1993 Biological Evaluation of Medical Devices, Part 3: Tests for genotoxicity, carcinogenicity and reproductive toxicity.
- ISO/EN 10993-4; 1993 Biological Evaluation of Medical Devices, Part 4: Selection of tests for interaction with blood.
- ISO/EN 10993-6; 1995 Biological Evaluation of Medical Devices, Part 6: Test for local effects after implantation.
- ISO/EN 10993-10; 1995 Biological Evaluation of Medical Devices, Part 10: Tests for Irritation and Sensitization.

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- ISO/EN 10993-11; 1993 Biological Evaluation of Medical Devices, Part 11: Tests for Systemic Toxicity.
- ISO/EN 10993-13; 1995 Biological Evaluation of Medical Devices, Part 13: Identification and Quantification of potential degradation products from polymers.
- ISO/EN 11607; 1997 – Packaging for terminally sterilized products.
- AAMI TIR 22;1998 – Guidance for application of EN 11607, Packaging for terminally sterilized products
- AAMI 11134; 1993 – Sterilization of Health Care Products – Requirements for validation and routine control – Industrial moist heat sterilization 2nd edition.
- ANSI/AAMI/ISO 14937; 2000 – Sterilization of Health Care Products – Characterization of a Sterilizing Agent and the Development, Validation and Routine Control of a Sterilization Process for Medical Devices.

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Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.

510(k) Number(if known):_____

Device Name: GelSpheres™ Microspheres
Bead Block™ Compressible Microspheres

Indications For Use:

"GelSpheres™ Microspheres & Bead Block™ Compressible Microspheres is intended for embolization of hypervascular tumors and arteriovenous malformations."

Prescription Use_X_ OR Over-The-Counter Use___
(Per 21 CRF 801.109)

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

Concurrence of CDRH, Office of Device Evaluation (ODE)

(Optional Format 1-2-96)

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.

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Certification Statement

PREMARKET NOTIFICATION
TRUTHFUL AND ACCURATE STATEMENT
(As Required by 21 CFR 807.87(j))

I certify, that in my capacity as Director, Regulatory Affairs of Biocompatibles UK Ltd. that I believe to the best of my knowledge, that all data and information submitted on this premarket notification are truthful and accurate and that no material fact has been omitted.

Alistair Taylor, Director, Regulatory Affairs, Biocompatibles UK Ltd.

29 July 2004
Date

Gelspheres™/Bead Block™ Compressible Microspheres
510(k) Pre-market Notification Title

510(k) Pre-market Notification Number

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016

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Certification Statement

PREMARKET NOTIFICATION
CONFORMITY TO APPLICABLE STANDARDS

I certify that in my capacity as Director, Regulatory Affairs of Biocompatibles UK Ltd. that I believe to the best of my knowledge, that the GelSpheres™ Microspheres and Beadblock™ Compressible Microspheres (Artificial Embolization Agent) conforms to the requirements of the following standards as applicable:

- Tripartite Guidance – 1987 (G87-1)
- FDA Guidance on Validation of LAL as End Product Endotoxin Test for Human and Animal Parenteral Drugs and Medical Devices; (1997)
- FDA Guidance for Neurological Embolization Devices (2000)
- FDA ORDB 510K Sterility Review Guidance (07/1997)
- ISO 10993 Parts 1-13 as applicable
- ANSI/AAMI 14937 – Sterilization of Health Care products (2000)
- AAMI/ISO 11134 - Requirements for Validation and routine control-Industrial moist heat Sterilization 2nd Ed
- EN 554 – Sterilization of Medical Devices – Validation and Routine Control of Sterilization by Moist Heat
- ISO/EN 11607 – Packaging for terminally Sterilized devices
- ISO 14971 - Medical devices – Risk management – Part 1: Application of risk analysis

Alistair Taylor, Director, Regulatory Affairs, Biocompatibles UK Ltd.

29 July 2004.
Date

GelSpheres™ /Beadblock Compressible Microspheres
510(k) Premarket Notification Title

510(k) Premarket Notification Number

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.

510(k) Summary

Submitter: Biocompatibles UK Ltd.
Weydon Lane
Chapman House
Weydon Lane, Farnham, Surrey
+44 1252732732

Contact: Dr. Alistair Taylor

510(k) Numbers and Product Codes of equivalent devices.

Biocure, Inc,
GelSpheres™ Microspheres
510K Number: #K023089
Product Code: HCG
CFR Section: 882.5950

Biocompatibles UK Ltd.
GelSpheres™ Microspheres
Bead Block™ Compressible Microspheres
510K Number: #K033761
Product Code: HCG
CFR Section: 882.5950

Indications for Use and Intended Population

"GelSpheres™/Bead Block™ Compressible Microspheres are indicated for Embolization of hypervascular tumors and arteriovenous malformations (AVM's).

Device Description

GelSpheres™ and Bead Block™ Compressible Microspheres are preformed soft, deformable microspheres that occlude arteries for the purpose of blocking the blood flow to a target tissue, such as a hypervascular tumor or arteriovenous malformations (AVM's). GelSpheres™ and Bead Block ™ Compressible Microspheres consist of a macromer derived from polyvinyl alcohol (PVA). The fully polymerized microsphere is approximately 90% water and is compressible to approximately 20-30% by diameter. Bead Block™ Compressible Microspheres is dyed blue (GelSpheres™ are

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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available in natural color) to aid in the visualization of the microspheres in the delivery syringe. The microspheres can be delivered through typical microcatheters in the 1.8-5Fr range.

GelSpheres™ Microspheres is supplied sterile and packaged in sealed glass vials. Bead Block™ Compressible Microspheres is supplied sterile and packaged in a polycarbonate syringe. Two quantities will be available in a vial: (1) 1.0 mL GelSpheres™ /Bead Block™ Compressible Microspheres in sterile physiologic buffered saline (PBS) to a volume of 8 mL, and (2) 2.0mL GelSpheres™/Bead Block™ Compressible Microspheres in sterile PBS to a volume of 8 mL.

GelSpheres™ and Bead Block Compressible Microspheres are supplied in several unit sizes covering the range from 100μm to 1200μm diameter. At the time of use, GelSpheres™/Bead Block™ Compressible Microspheres is mixed with a nonionic contrast agent, e.g. Omnipaque, to make a 30-50% by weight solution. The bolus of contrast agent elutes from the vascular bed to leave a radiolucent, embolized vessel.

Similarities and Differences to Predicates

The Intended Use of GelSpheres™ /Bead Block™ Compressible Microspheres and the predicate device are the same and unchanged other than product names. This pre-market notification addresses the change of the final packager from BioCure, inc to Biocompatibles UK LTD.

There are more similarities than differences when comparing Biocompatibles, GelSpheres™/Bead Block™ to the predicate devices.

Performance Standards

GelSpheres™/BeadBlock Compressible Microspheres meet the following Performance Standards:

- Guidance For Industry; 2004: FDA Guidance for Neurological Embolization Products
- ISO/EN 10993-1; 1997 Biological Evaluation of Medical Devices, Part I: Evaluation and Testing
- ISO/EN 10993-3; 1993 Biological Evaluation of Medical Devices, Part 3: Tests for genotoxicity, carcinogenicity and reproductive toxicity.
- ISO/EN 10993-4; 1993 Biological Evaluation of Medical Devices, Part 4: Selection of tests for interaction with blood.

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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- ISO/EN 10993-6; 1995 Biological Evaluation of Medical Devices, Part 6: Test for local effects after implantation.
- ISO/EN 10993-10; 1995 Biological Evaluation of Medical Devices, Part 10: Tests for Irritation and Sensitization.
- ISO/EN 10993-11; 1993 Biological Evaluation of Medical Devices, Part 11: Tests for Systemic Toxicity.
- ISO/EN 10993-13; 1995 Biological Evaluation of Medical Devices, Part 13: Identification and Quantification of potential degradation products from polymers.
- ISO/EN 11607; 1997 – Packaging for terminally sterilized products.
- AAMI TIR 22;1998 – Guidance for application of EN 11607, Packaging for terminally sterilized products
- AAMI 11134; 1993 – Sterilization of Health Care Products – Requirements for validation and routine control – Industrial moist heat sterilization 2nd edition.
- ANSI/AAMI/ISO 14937; 2000 – Sterilization of Health Care Products – Characterization of a Sterilizing Agent and the Development, Validation and Routine Control of a Sterilization Process for Medical Devices.
- EN 554: Sterilization of Medical Devices – validation and Routine Control of Sterilization by Moist Heat

Conclusion

There are more similarities than differences between the predicate device and the Biocompatibles GelSpheres™/Bead Block™ Compressible Microspheres. The product, manufacturing and primary packaging are unchanged from K023089/K033761. The predicate device and GelSpheres™/Bead Block™ Compressible Microspheres have the same intended use, warnings and contraindications. The predicate device and GelSpheres™/Bead Block™ Compressible Microspheres are identical in design, and unchanged from K023089. When used in accordance with the instructions for use, by qualified personnel, the Biocompatibles GelSpheres™/Bead Block™ Compressible Microspheres are safe and effective, as indicated, for the intended use.

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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5.0 Device Description

5.1 General Device Description

GelSpheres™ Microspheres and Bead Block™ Compressible Microspheres (Artificial Embolization Agent) are preformed soft, deformable microspheres that occlude arteries for the purpose of blocking the blood flow to a target tissue, such as a fibroid or a cancerous tumor. GelSpheres™ Microspheres and Bead Block™ Compressible Microspheres consists of a macromer derived from polyvinyl alcohol (PVA). The fully polymerized microsphere is approximately 85% water and is compressible to approximately 30% by diameter. Bead Block™ Compressible Microspheres is dyed blue to aid in the visualization of the microspheres in the delivery syringe. GelSpheres™ are either un-dyed and in a natural color or dyed blue. The microspheres can be delivered through typical microcatheters in the 1.5-5Fr range.

The product will be supplied sterile and packaged in sealed glass bottles (GelSpheres™) or pre-filled syringes (Bead Block™).

Two quantities will be available in vials:

(1) 1.0 mL GelSpheres™ Microspheres in sterile physiologic buffered saline (PBS) to a volume of 8 mL.

(2) 2.0mL GelSpheres™ Microspheres in sterile PBS to a volume of 8 mL.

Two quantities will be available in pre-filled syringes:

(1) 1.0 mL Bead Block™ Compressible Microspheres in syringes to a volume of 5 mL.

(2) 2.0mL Bead Block™ Compressible Microspheres in syringes to a volume of 5 mL.

The shelf life of GelSpheres™ Microspheres and Bead Block™ Compressible Microspheres is 2 years minimally.

Undyed GelSpheres™ Model numbers beginning with the letters UB are provided in vials and contain 11% AMPS co-monomer. Blue dyed GelSpheres™ beginning with the letters VE are provided in vials and contain (b)(4) [redacted] co-monomer. Bead Block™ Compressible Microspheres Model numbers beginning with the letters EB series are provided in a pre-filled syringe and contain (b)(4) [redacted] and are dyed Blue as described below. There are no other differences between the GelSpheres™ Microspheres and Bead Block™ Compressible Microspheres. Detailed discussion of GelSpheres™ Microspheres and Bead Block™ Compressible Microspheres chemistry is provided later in this section.

GelSpheres™ Microspheres and Bead Block™ Compressible Microspheres is supplied in several units covering the range from 100μm to 1200μm diameter. The product size ranges are listed below:

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100-300μm
300-500μm
500-700μm
700-900μm
900-1200μm

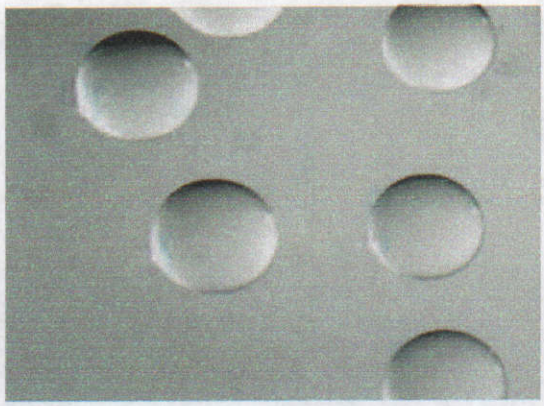

Figure 5-1: GelSpheres™ Embolic Agent (ca. 500μm diameter)

At the time of use, GelSpheres™ Microspheres and Bead Block™ Compressible Microspheres is mixed with a nonionic contrast agent, e.g. Omnipaque, to make a 30-50% by weight solution. The bolus of contrast agent elutes from the vascular bed to leave a radiolucent, embolized vessel.

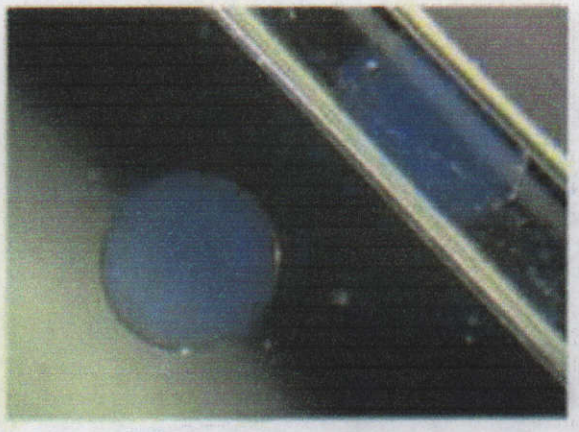

Figure 5-2: Bead Block™ geometry and appearance in Catheter Lumen

The vial containing GelSpheres™ Microspheres is, packaged in a cardboard box. The GelSpheres™ are contained in a sealed glass vial. The vial contains the GelSpheres™ in a solution of [redacted] PBS. The vial contents are sealed using a rubber stopper with metal retaining ring, and is provided 'STERILE' (vial contents are sterile) by moist heat sterilization. GelSpheres™ are labeled as "NON PYROGENIC". The GelSpheres™ Microspheres is for single-use only. Vial stopper caps are color coded according to the size of the GelSpheres™ contained in the vial.

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Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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Pre-filled syringes with Bead Block™ are packaged in a polycarbonate tray with Tyvek® lid stock. The syringe is made of polycarbonate with a silicone rubber bung.

Bead Block™ Compressible Microspheres is available in the following configurations:

Product Code	Size Range	Quantity Bead Block	Quantity Saline
EB1S103	100-300μm	1ml	4ml
EB1S305	300-500μm	1ml	4ml
EB1S507	500-700μm	1ml	4ml
EB1S709	700-900μm	1ml	4ml
EB1S912	900-1200μm	1ml	4ml
EB2S103	100-300μm	2ml	3ml
EB2S305	300-500μm	2ml	3ml
EB2S507	500-700μm	2ml	3ml
EB2S709	700-900μm	2ml	3ml
EB2S912	900-1200μm	2ml	3ml

GelSpheres™ Microspheres™ is available in the following configurations:

Product Code	Size Range	Quantity Bead Block	Quantity Saline
UB1V103	100-300μm	1ml	7ml
UB1V305	300-500μm	1ml	7ml
UB1V507	500-700μm	1ml	7ml
UB1V709	700-900μm	1ml	7ml
UB1V912	900-1200μm	1ml	7ml
UB2V103	100-300μm	2ml	7ml
UB2V305	300-500μm	2ml	7ml
UB2V507	500-700μm	2ml	7ml
UB2V709	700-900μm	2ml	7ml
UB2V912	900-1200μm	2ml	7ml

GelSpheres™ Microspheres™ dyed blue is available in the following configurations:

Product Code	Size Range	Quantity Bead Block	Quantity Saline
VE210GS	100-300μm	1ml	7ml
VE410GS	300-500μm	1ml	7ml
VE610GS	500-700μm	1ml	7ml
VE810GS	700-900μm	1ml	7ml
VE1010GS	900-1200μm	1ml	7ml
VE220GS	100-300μm	2ml	7ml
VE420GS	300-500μm	2ml	7ml
VE620GS	500-700μm	2ml	7ml
VE820GS	700-900μm	2ml	7ml
VE1020GS	900-1200μm	2ml	7ml

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Figure 5-3: GelSpheres in Vial

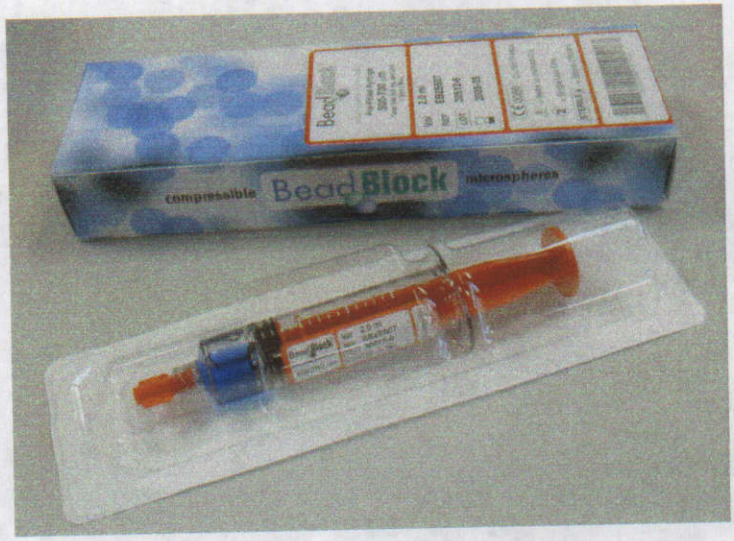

Figure 5-4 Bead Block™ in Syringe

5.2 Indication for Use and Intended Population

5.2.1 Indication for use Statement

Although Biocompatibles UK Ltd. believes that GelSpheres™ Microspheres and Bead Block™ Compressible Microspheres may have several clinical uses, the indication for use is the following:

" GelSpheres™ Microspheres and Bead Block™ Compressible Microspheres is intended for embolization of hypervascular tumors and arteriovenous malformations."

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The Indications For Use Statement in the prescribed format is provided in Section 3.0

5.2.2 Intended Use Population

Hypervascular tumors are the most widely embolized vascular tissues. According to literature searches conducted in two prominent peer review journals, *Radiology* and *Journal of Vascular and Interventional Radiology* on publications during the past ten years, hypervascular tumors represent a broad range of tissues as shown below: (**Note**: Biocompatibles UK Ltd. does not plan to use the specific list below for the product labeling or for the Indications for Use. This information is provided to present to the reviewer examples of Hypervascular Tumors)

- Liver cancer (hepatocellular carcinoma)
- Kidney cancer (renal cell carcinoma)
- Pancreatic cancer
- Bladder cancer
- Splenic cancer
- Spinal tumors
- Biliary cancer
- Peripheral and Neurovascular AVM's

The company intends to make no references to uterine fibroid embolization under this pre-market notification.

The common feature of these hypervascular tumors is that their blood supply usually originates from small arteries that can be accessed via selective catheterization. The arteries leading to these hypervascular tumors range from mid-size arteries (1708μm) to very small arterioles (100μm). The general procedure involves accessing the tumor site by a feeder artery with a catheter of appropriate size followed by injection of the embolic agent into the arterial stream. In all cases, the embolic effect involves the blockage of these small arteries with particulate or liquid embolic agents. To date, hypervascular tumors have been embolized by several embolic agents, including polyvinyl alcohol (PVA) particles (e.g. Contour PVA), gelatin sponges, ethanol, compressible microspheres (Embosphere® microspheres), n-butyl cyanoacrylate (TruFill® nBCA), and ethylene vinyl acetate in DMSO (Onyx™). Although these agents block blood supply to the hypervascular tumors resulting ischemia of the tissue, some clinicians also use adjunctive agents with the embolic agents, including ethiodized oils, particularly for hepatocellular carcinoma. The embolization of these hypervascular tumors can also take place prior to surgical removal of the cancerous tissue, such as in the pre-surgical devascularization of a liver or a kidney tumor.

Arteriovenous malformations are abnormal blood vessels which may exist in the brain and other anatomical locations. AVM's develop when there are abnormal communications that directly connect relatively large arteries to veins. The blood is exchanged at a relatively higher pressure with greater blood flow to the vein. The anatomy of the vein is not designed to take arterial pressure and/or flow rate thus. In the presence of an AVM the vein expands and pushes against the normal brain tissue. This may have a variety of neurological effects. Often there is a rupture in the

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supplying arteries, the AVM itself, or the enlarged veins which results in an intracranial hemorrhage. AVM's in other parts of the anatomy will have a similar effect to the associated veins and resulting complications. AVM's have been embolized using several embolic agents, including polyvinyl alcohol (PVA) particles (e.g. Contour PVA), gelatin sponges, ethanol, compressible microspheres (Embosphere® microspheres), n-butyl cyanoacrylate (TruFill® nBCA).

5.2.3 Contraindications

The Contraindications listed below is included in the GelSpheres™ Microspheres and Bead Block™ Compressible Microspheres Instructions for Use (see Section 7.0 – Device Labeling).

- Patients intolerant to occlusion procedures
- Vascular anatomy or blood that precludes catheter placement or emboli injection
- Presence or likely onset of vasospasm
- Presence or likely onset of hemorrhage
- Presence of severe atheromatous disease
- Presence of feeding arteries smaller than distal branches from which they emerge
- Presence of patent extra-to-intracranial anastomoses or shunts
- Presence of collateral vessel pathways potentially endangering normal territories during embolization
- Presence of end arteries leading directly to cranial nerves
- Presence of arteries supplying the lesion not large enough to accept GelSpheres™ Microspheres and Bead Block™ Compressible Microspheres
- Vascular resistance peripheral to the feeding arteries precluding passage of GelSpheres™ Microspheres and Bead Block™ Compressible Microspheres into the lesion
- Do not use GelSpheres™ Microspheres and Bead Block™ Compressible Microspheres in the following applications:
    - Embolization of large diameter arteriovenous shunts (i.e. where the blood does not pass through the arterial / capillary / venous transition but directly from artery to vein
    - The pulmonary arterial vasculature
    - Use in any vasculature where the use of GelSpheres™ Microspheres and Bead Block™ Compressible Microspheres could pass directly into the internal carotid artery or the above listed vessels.

5.2.4 Warnings

The Warning statement below is included in the GelSpheres™ Microspheres and

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Bead Block™ Compressible Microspheres Instructions for Use (see Section 7.0 – Device Labeling)

> *"WARNING: Studies have shown that GelSpheres™ Microspheres and Bead Block™ Compressible Microspheres do not form aggregates and, as a result, penetrate deeper into the vasculature as compared to similarly sized PVA particles. Care must be taken to choose a larger sized GelSpheres™ Embolic Agent when embolizing arteriovenous malformations with large shunts to avoid passage of the particles into the pulmonary or coronary circulation."*

5.3 Device Operation

The method of application of GelSpheres™ Microspheres and Bead Block™ Compressible Microspheres and the predicate devices is the same. All devices are intended to be delivered to selected sites through catheters with a diameter appropriate for the vascular target and the size of the emboli. Accurate placement of all of the embolization devices is assured through visualization of the embolization process using radiographic imaging. All of the devices are mixed with a radiopacity agent prior to injection to permit visualization. GelSpheres™ Microspheres and Bead Block™ Compressible Microspheres, like the predicate device are available in a range of sizes to permit selection of the most appropriate size for target vessels.

5.4 Device Manufacturing

The manufacturing process used by Biocompatibles UK Ltd. is nearly identical to the processes used by BioCure, Inc. as described in K023089. Biocompatibles purchased the rights to GelSpheres™ Embolic Agent in September of 2003. A copy of the letter of accession to use K023089 is attached in Appendix I.

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[redacted]

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[redacted]

Schematic of Beadblock cleanroom water purification system

Figure 5-5: A schematic of the water purification system used in manufacturing GelSpheres™ and Bead Block™

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Water quality is monitored with a total organic count (TOC) monitor and a resistance meter which measures water de-ionization levels, the system typically operates at 18 MΩ.

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Water quality is additionally monitored by regular endotoxin and bioburden determination performed at external regulated testing facilities, (b)(4) [redacted] (b)(4) [redacted]

5.4.1.4 Manufacturing Flow

The manufacturing process of GelSpheres™ and Bead Block™ consists of essentially (b)(4) [redacted] s™ [redacted] (b)(4) [redacted]

(b)(4) [redacted]

An outline of the synthetic pathway of GelSpheres™ and Bead Block™ is provided in K023089 along with a tabulated summary of the individual materials used in production and their role in the synthetic process. The general chemical characteristics of each material is presented below. All chemicals are used as received after incoming inspection.

5.4.1.4.1 (b)(4) [redacted] macromer synthesis (step 1)

Polyvinyl alcohol (PVA) (Figure 5-6) is widely used industrial and medical polymer. The applications of PVA are as diverse as clothing fibers, thickening agents, emulsion stabilizers and wet adhesives to embolic agents and contact lenses

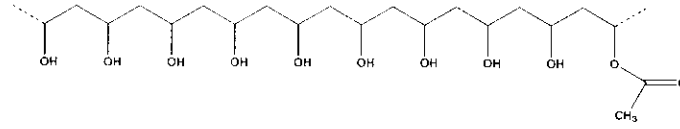

Figure 5-6: Chemical structure of PVA

PVA is a water soluble polymer made from the polymerization of vinyl acetate monomers. Polyvinyl acetate is very hydrophobic and therefore not water soluble. Alcoholysis or saponification of the polyvinyl acetate in ethanol or methanol with a alkaline or acidic catalyst causes cleavage of the pendant acetate groups to form pendant hydroxyl groups resulting in the formation of PVA *(ref. Billmyer, p.391-5)* Typically some acetate groups remain on the PVA chain. PVA can be purchased in a wide variety of molecular weights and acetate content.

This water solubility and the presence of pendant hydroxyl groups offers the flexibility for a wide range of modifications, example hydrophobic modification

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with butyraldehyde for the production of safety glass *(ref. Billmyer, p.391-5)* or the addition of monomers to form water soluble polymerisable PVA macromers for manufacturing hydrogel contact lens (Muller B. Crosslinked Polymers, US 5,932,674. 1999). Embolic agents have also been prepared with PVA by crosslinking the pendant hydroxyl groups with gluteraldehyde to form tough, water insoluble particles (*Billmeyer, F.W. Jr; 'Textbook of Polymer Science', John Wiley & Son, Inc. Singapore, 1984)*

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5.4.1.4.8 Sterilization

GelSpheres™ and Bead Block™ are labeled as "Sterile". SAL is 10^{-6} and in accordance with AAMI/ANSI/ISO 11134: Sterilization of health care products-Requirements for validation and routine control-Industrial moist heat sterilization, 2ed.. Sterilization is performed in accordance with EN 554: Sterilization of Medical Devices – validation and Routine Control of Sterilization by Moist Heat. (b)(4) [redacted]

(b)(4) [redacted]

The Company certifies that Validation and routine sterilization is in conformance with recognized standards ANSI/AAMI/ISO 11134 and EN 554 and EN 556. The sterilization process is validated for parametric release. The data on validation of sterilization cycles used for GelSpheres™ and Bead Block™ is on file at Biocompatibles UK Ltd. Validation reports are included in Appendix II

The certification that sterilization is in accordance with the recognized standards is included in Section 3.0 .

5.4.1.5 Extractables

(b)(4) [redacted]

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5.4.1.6 Pyrogenicity

GelSpheres™ and Bead Block™ are labeled as "Non-Pyrogenic". Pyrogenicity and presence of endotoxins are determined using the Kinetic-Chromogenic LAL method. Endotoxin testing is performed by Cambrex, Belgium. Test methods are validated by Cambrex. Each lot of GelSpheres™ and/or Bead Block™ is tested to meet the requirement of <0.06 EU/ML in accordance with the requirements of the FDA 1987 Guidance Document: Guideline on Validation of Limulus Amebocyte Lysate Test as an End Product Endotoxin Test for Human and Animal Parenteral Drugs, Biological Products and Medical Devices.

5.5 Packaging Materials

5.5.1 Vial Description

The vials used with GelSpheres™ are 10ml made of borosilicate clear glass. (b)(4)
(b)(4)
[redacted]

5.5.2 Syringe Description

The syringes used with Bead Block™ are 20ml with clear polycarbonate barrel and colored polycarbonate plunger and white printing of graduation marks. (b)(4)
(b)(4)
[redacted]

5.5.3 External Packaging

5.5.3.1 External Packaging for Vials

Vials containing GelSpheres™ are packaged in a cardboard box. There is no sterile barrier between the box and the outside surface of the vial. Package labeling is provided in section 7.0 of this pre-market notification.

5.5.3.2 External Packaging for Syringes

Syringes containing Bead Block™ are packaged in a molded polycarbonate tray with

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Tyvek® lid stock. The syringe and contents are sterile. The Tyvek® lid stock serves as a sterile barrier. Package labeling is provided in section 7.0 of this pre-market notification.

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2) Dyeing Step and Preparation for Storage

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5.7. Device Interfaces

5.7.1 Catheter Delivery

GelSpheres™ and Bead Block™ have been tested for compatibility with a variety of commonly used Microcatheters. A copy of the protocol used for this testing was included in K033761. The compatibility testing protocol includes evaluation of the following properties:

- Aggregation of the embolic agent in the syringe
- Catheter clogging
- Ease of delivery
- Shape of the embolic agent after injection

Catheter I.D. (in/micron)	Micro-Catheter	GelSphere Bead Block Model	Compatible GelSphere™/Bead Block™ Size(s)				
			100-300	300-500	500-700	700-900	900-1200
0.024/610 and up	5Fr. AngioDynamics	S Series					
		V Series					
	FasTracker® 325	S Series					
	5Fr. AngioDynamics	V Series					
0.021/540	FasTracker® 18	S Series					
	Cook 3.0 Fr.	V Series					
0.016/420	Prowler® 14	S Series					
		V Series					
0.013/330	Spinnaker Elite1.8	S Series					
		V Series					

Table 5-3 Catheter Compatibility

Biocompatibles does not intend to make recommendations for the use of GelSpheres™ or Bead Block™ with specific catheter models. The above information will be provided to customers as a guide to which delivery catheters have been tested for compatibility by Biocompatibles.

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6.0 DEVICE MODIFICATIONS & COMPARATIVE INFORMATION

6.1 Predicate Devices

6.1.1 510(k) Numbers and Product Codes of Equivalent Devices

BioCure, Inc,
GelSpheres™ Microspheres Embolic Agent
510K Number: #K023089
Product Code: HCG
CFR Section: 882.5950

Biocompatibles, UK Ltd.,
GelSpheres™ Microspheres
BeadBlock™ Compressible Microspheres
510K Number: #K033761
Product Code: HCG
CFR Section: 882.5950

6.2 Discussion of Similarities and Differences between GelSpheres™ and predicate devices

6.2.1 Indications for Use

GelSpheres™ Microspheres Embolic Agent, and BeadBlock™ have the same indications for use.

"..... Embolic Agent is intended for embolization of hypervascular tumors and arteriovenous malformations."

6.2.2 Target Population

The clinical application of GelSpheres™ Microspheres, BeadBlock™ Compressible Microspheres and the predicate devices is the same, treatment of hypervascular tumors and arteriovenous malformations (AVM's). GelSpheres™/BeadBlock and the predicate devices are intended to be delivered to selected sites through catheters with a diameter appropriate for the vascular target and the size of the emboli. Accurate placement of all of all embolic agents is assured through visualization of the embolization process using radiographic imaging. Both GelSpheres™, BeadBlock™ and the predicate devices are mixed with a radio opaque contrast agent prior to injection to permit visualization. GelSpheres™, BeadBlock™ and the predicate devices are available in a range of sizes to permit selection of the most appropriate size for target vessels. GelSpheres™, BeadBlock™ and the predicate devices are intended for single use and are supplied sterile and non-Pyrogenic.

This pre-market notification is for a change of manufacturing sites. BioCure, Inc. is a contract manufacturer to Biocompatibles UK Ltd.. Biocompatibles acquired the rights to manufacture GelSpheres™ and subsequent products in September 2003. A copy of the accession letter was included in K033761 where Biocompatibles UK Ltd was cleared as a repackager and distributor of GelSpheres™ and BeadBlock™ (Appendix I).

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6.2.3 Product Labeling

The Labeling for GelSpheres™ and Bead Block™ is included in Section 7.0 of this pre-market notification. The Labeling is unchanged from K033761. Indications, warnings and contraindications for GelSpheres™/Bead Block™ is the same as for the predicate devices.

6.2.4 Packaging

GelSpheres™ and Bead Block™ are supplied in glass vials and syringes respectively, there are no changes to package materials. The same packaging processes and equipment are used as the predicates.

6.2.5 Technical Characteristics

Technical characteristic and specifications are identical to the predicate devices.

6.2.6 Physical Characteristics

Physical and chemical characteristics are identical to the predicate devices.

6.2.6.1 Catheter Delivery

Catheter delivery performance is unchanged from K033761

6.2.7 Performance Testing

FDA published Special controls for Neurological Embolization devices in February 2004. GelSpheres™ and Bead Block™ compressible Microspheres conform to these requirements (see design controls – Section 8.0 and appendices with Validation data)

6.2.8 Safety Characteristics

The technical characteristics (physical characteristics, biocompatibility, sterility, endotoxin, etc) are the same for GelSpheres™ and Bead Block™ with the predicate devices. No new characteristics are added with GelSpheres™ or Bead Block™ in the addition of the Biocompatibles manufacturing process which would have an effect on product safety, effectiveness or the ability of the product to meet the relevant standards or specifications as in K023098 and K033761.

6.3 Discussion on GelSpheres™ and BeadBlock™ clinical testing

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6.5 Comparison Table

	GelSpheres™ Microspheres UV Series (New)	GelSpheres™ Microspheres VE Series (New)	BeadBlock™ Compressible Microspheres EB Series (New)	GelSpheres™ Embolic Agent – V Series (K023089) (K033761)	GelSpheres™ Embolic Agent – S Series (K023089) (K033761)
Device Description	Calibrated microspheres for embolization Undyed	Calibrated microspheres for embolization Blue dyed	Calibrated microspheres for embolization Blue Dyed	Calibrated microspheres for embolization Blue Dyed	Calibrated microspheres for embolization Blue Dyed
Safety & Standards	Guidance For Industry; 2004: FDA Guidance for Neurological Embolization Products ISO/EN 10993-1; 1997 Biological Evaluation of Medical Devices, Part I: Evaluation and Testing ISO/EN 10993-3; 1993 Biological Evaluation of Medical Devices, Part 3: Tests for genotoxicity, carcinogenicity and reproductive toxicity. ISO/EN 10993-4; 1993 Biological Evaluation of Medical Devices, Part 4: Selection of tests for interaction with blood. ISO/EN 10993-6; 1995 Biological Evaluation of Medical Devices, Part 6: Test for local effects after implantation. ISO/EN 10993-10; 1995 Biological Evaluation of Medical Devices, Part 10: Tests for Irritation and Sensitization. ISO/EN 10993-11; 1993 Biological Evaluation of Medical Devices, Part 11: Tests for Systemic Toxicity. ISO/EN 10993-13; 1995	Guidance For Industry; 2004: FDA Guidance for Neurological Embolization Products ISO/EN 10993-1; 1997 Biological Evaluation of Medical Devices, Part I: Evaluation and Testing ISO/EN 10993-3; 1993 Biological Evaluation of Medical Devices, Part 3: Tests for genotoxicity, carcinogenicity and reproductive toxicity. ISO/EN 10993-4; 1993 Biological Evaluation of Medical Devices, Part 4: Selection of tests for interaction with blood. ISO/EN 10993-6; 1995 Biological Evaluation of Medical Devices, Part 6: Test for local effects after implantation. ISO/EN 10993-10; 1995 Biological Evaluation of Medical Devices, Part 10: Tests for Irritation and Sensitization. ISO/EN 10993-11; 1993 Biological Evaluation of Medical Devices, Part 11: Tests for Systemic Toxicity. ISO/EN 10993-13; 1995	Guidance For Industry; 2004: FDA Guidance for Neurological Embolization Products ISO/EN 10993-1; 1997 Biological Evaluation of Medical Devices, Part I: Evaluation and Testing ISO/EN 10993-3; 1993 Biological Evaluation of Medical Devices, Part 3: Tests for genotoxicity, carcinogenicity and reproductive toxicity. ISO/EN 10993-4; 1993 Biological Evaluation of Medical Devices, Part 4: Selection of tests for interaction with blood. ISO/EN 10993-6; 1995 Biological Evaluation of Medical Devices, Part 6: Test for local effects after implantation. ISO/EN 10993-10; 1995 Biological Evaluation of Medical Devices, Part 10: Tests for Irritation and Sensitization. ISO/EN 10993-11; 1993 Biological Evaluation of Medical Devices, Part 11: Tests for Systemic Toxicity. ISO/EN 10993-13; 1995	Guidance For Industry; 2000: FDA Guidance for Neurological Embolization Products ISO/EN 10993-1; 1997 Biological Evaluation of Medical Devices, Part I: Evaluation and Testing ISO/EN 10993-3; 1993 Biological Evaluation of Medical Devices, Part 3: Tests for genotoxicity, carcinogenicity and reproductive toxicity. ISO/EN 10993-4; 1993 Biological Evaluation of Medical Devices, Part 4: Selection of tests for interaction with blood. ISO/EN 10993-6; 1995 Biological Evaluation of Medical Devices, Part 6: Test for local effects after implantation. ISO/EN 10993-10; 1995 Biological Evaluation of Medical Devices, Part 10: Tests for Irritation and Sensitization. ISO/EN 10993-11; 1993 Biological Evaluation of Medical Devices, Part 11: Tests for Systemic Toxicity. ISO/EN 10993-13; 1995 Biological Evaluation of Medical Devices, Part 13: Identification and Quantification of potential degradation products from polymers.	Guidance For Industry; 2000: FDA Guidance for Neurological Embolization Products ISO/EN 10993-1; 1997 Biological Evaluation of Medical Devices, Part I: Evaluation and Testing ISO/EN 10993-3; 1993 Biological Evaluation of Medical Devices, Part 3: Tests for genotoxicity, carcinogenicity and reproductive toxicity. ISO/EN 10993-4; 1993 Biological Evaluation of Medical Devices, Part 4: Selection of tests for interaction with blood. ISO/EN 10993-6; 1995 Biological Evaluation of Medical Devices, Part 6: Test for local effects after implantation. ISO/EN 10993-10; 1995 Biological Evaluation of Medical Devices, Part 10: Tests for Irritation and Sensitization. ISO/EN 10993-11; 1993 Biological Evaluation of Medical Devices, Part 11: Tests for Systemic Toxicity. ISO/EN 10993-13; 1995

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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	GelSpheres™ Microspheres UV Series (New)	GelSpheres™ Microspheres VE Series (New)	BeadBlock™ Compressible Microspheres EB Series (New)	GelSpheres™ Embolic Agent – V Series (K023089) (K033761)	GelSpheres™ Embolic Agent – S Series (K023089) (K033761)
	Biological Evaluation of Medical Devices, Part 13: Identification and Quantification of potential degradation products from polymers. ISO/EN 11607; 1997 – Packaging for terminally sterilized products. AAMI TIR 22;1998 – Guidance for application of EN 11607, Packaging for terminally sterilized products AAMI 11134; 1993 – Sterilization of Health Care Products – Requirements for validation and routine control – Industrial moist heat sterilization 2nd edition. ANSI/AAMI/ISO 14937; 2000 – Sterilization of Health Care Products – Characterization of a Sterilizing Agent and the Development, Validation and Routine Control of a Sterilization Process for Medical Devices. EN 554: Sterilization of Medical Devices – validation and Routine Control of Sterilization by Moist Heat	Biological Evaluation of Medical Devices, Part 13: Identification and Quantification of potential degradation products from polymers. ISO/EN 11607; 1997 – Packaging for terminally sterilized products. AAMI TIR 22;1998 – Guidance for application of EN 11607, Packaging for terminally sterilized products AAMI 11134; 1993 – Sterilization of Health Care Products – Requirements for validation and routine control – Industrial moist heat sterilization 2nd edition. ANSI/AAMI/ISO 14937; 2000 – Sterilization of Health Care Products – Characterization of a Sterilizing Agent and the Development, Validation and Routine Control of a Sterilization Process for Medical Devices. EN 554: Sterilization of Medical Devices – validation and Routine Control of Sterilization by Moist Heat	Biological Evaluation of Medical Devices, Part 13: Identification and Quantification of potential degradation products from polymers. ISO/EN 11607; 1997 – Packaging for terminally sterilized products. AAMI TIR 22;1998 – Guidance for application of EN 11607, Packaging for terminally sterilized products AAMI 11134; 1993 – Sterilization of Health Care Products – Requirements for validation and routine control – Industrial moist heat sterilization 2nd edition. ANSI/AAMI/ISO 14937; 2000 – Sterilization of Health Care Products – Characterization of a Sterilizing Agent and the Development, Validation and Routine Control of a Sterilization Process for Medical Devices. EN 554: Sterilization of Medical Devices – validation and Routine Control of Sterilization by Moist Heat	ISO/EN 11607; 1997 – Packaging for terminally sterilized products. AAMI TIR 22;1998 – Guidance for application of EN 11607, Packaging for terminally sterilized products AAMI 11134; 1993 – Sterilization of Health Care Products – Requirements for validation and routine control – Industrial moist heat sterilization 2nd edition. ANSI/AAMI/ISO 14937; 2000 – Sterilization of Health Care Products – Characterization of a Sterilizing Agent and the Development, Validation and Routine Control of a Sterilization Process for Medical Devices. EN 554: Sterilization of Medical Devices – validation and Routine Control of Sterilization by Moist Heat	Biological Evaluation of Medical Devices, Part 13: Identification and Quantification of potential degradation products from polymers. AAMI 11134; 1993 – Sterilization of Health Care Products – Requirements for validation and routine control – Industrial moist heat sterilization 2nd edition.
Indications for Use	"GelSpheres™ and BeadBlock™ Compressible Microspheres is intended for embolization of hypervascular tumors and arteriovenous malformations."	"GelSpheres™ and BeadBlock™ Compressible Microspheres is intended for embolization of hypervascular tumors and arteriovenous malformations."	"GelSpheres™ and BeadBlock™ Compressible Microspheres is intended for embolization of hypervascular tumors and arteriovenous malformations."	"GelSpheres™ and BeadBlock™ Compressible Microspheres is intended for embolization of hypervascular tumors and arteriovenous malformations."	"GelSpheres™ and BeadBlock™ Compressible Microspheres is intended for embolization of hypervascular tumors and arteriovenous malformations."
Expiration	2 years	2 years	2 years	2 years	1 year
Size Range	5 size ranges up to 1200μm	5 size ranges up to 1200μm	5 size ranges up to 1200μm	5 size ranges up to 1200μm	5 size ranges up to

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Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

	GelSpheres™ Microspheres UV Series (New)	GelSpheres™ Microspheres VE Series (New)	BeadBlock™ Compressible Microspheres EB Series (New)	GelSpheres™ Embolic Agent – V Series (K023089) (K033761)	GelSpheres™ Embolic Agent – S Series (K023089) (K033761)
					1200μm
Sterility	SAL 10^{-6}; Steam	SAL 10^{-6}; Steam	SAL 10^{-6}; Steam	SAL 10^{-6}; Steam	SAL 10^{-6}; Steam
Packaging	Vial, non sterile package	Vial, non sterile package	Syringe, sterile package	Vial, non sterile package	Syringe, sterile package
Composition	PVA, buffered Saline	PVA, Reactive Blue Dye #4, buffered Saline	PVA, Reactive Blue Dye #4, buffered Saline	PVA, Reactive Blue Dye #4, buffered Saline	PVA, Reactive Blue Dye #4, buffered Saline
USE	Single Use Only	Single Use Only	Single Use Only	Single Use Only	Single Use Only
Delivery Method	Intravascular catheter	Intravascular catheter	Intravascular catheter	Intravascular catheter	Intravascular catheter

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052

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration
9200 Corporate Boulevard
Rockville MD 20850

DEC 1 6 2002

BioCure, Inc.
c/o Mr. John Greenbaum
Generic Devices Consulting, Inc.
20310 SW 48th Street
Fort Lauderdale, Florida 33332

Re: K023089
Trade/Device Name: GelSpheres Embolic Agent
Regulation Number: 21 CFR 882.5950; 21 CFR 870.3300
Regulation Name: Artificial embolization device; Arterial Embolization Device
Regulatory Class: III
Product Code: HCG; KRD
Dated: September 13, 2002
Received: September 17, 2002

Dear Mr. Greenbaum:

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 (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. 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.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), 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 898. In addition, FDA may publish further announcements concerning your device in the Federal Register.

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); good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820); and if applicable, the electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR 1000-1050.
This letter will allow you to begin marketing your device as described in your Section 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.

80

Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.

If you desire specific advice for your device on our labeling regulation (21 CFR Part 801), please contact the Office of Compliance at (301) 594-4659. Additionally, for questions on the promotion and advertising of your device, please contact the Office of Compliance at (301) 594-4639. Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21CFR Part 807.97). Other general information on your responsibilities under the Act may be obtained from the Division of Small Manufacturers, International and Consumer Assistance at its toll-free number (800) 638-2041 or (301) 443-6597 or at its Internet address http://www.fda.gov/cdrh/dsma/dsmamain.html

Sincerely yours,

Miriam C. Provost
for Celia M. Witten, Ph.D., M.D.
Director
Division of General, Restorative
and Neurological Devices
Office of Device Evaluation
Center for Devices and
Radiological Health

Enclosure

Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.

K023089 054

510(k) Number(if known):_____

Device Name: GelSpheres™ Embolic Agent

Indications For Use:

"GelSpheres™ Embolic Agent is intended for embolization of hypervascular tumors and arteriovenous malformations."

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

Concurrence of CDRH, Office of Device Evaluation (ODE)

Prescription Use_X_ OR Over-The-Counter Use___
(Per 21 CRF 801.109)

(Optional Format 1-2-96)

Miriam C. Provost
(Division Sign-Off)
Division of General, Restorative
and Neurological Devices

510(k) Number K023089

82

[redacted]

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055

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration
9200 Corporate Boulevard
Rockville MD 20850

FEB - 4 2004

Biocompatibles U.K. Ltd
c/o Mr. John Greenbaum
Generic Devices Consulting
20310 SW 48th Street
Ft. Lauderdale, Florida 33332

Re: K033761
Trade/Device Name: Gelspheres™ Embolic Agent/Beadlock™ Embolic Agent
Regulation Number: 21 CFR 882.5950
Regulation Name: Artificial Embolization Device
Regulatory Class: III
Product Code: HCG
Dated: November 28, 2003
Received: December 8, 2003

Dear Mr. Greenbaum:

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 (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. 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.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), 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 898. In addition, FDA may publish further announcements concerning your device in the Federal Register.

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); good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820); and if applicable, the electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR 1000-1050.

Questions?-Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

83

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056

This letter will allow you to begin marketing your device as described in your Section 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), please contact the Office of Compliance at (301) 594-4659. Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21CFR Part 807.97). You may obtain other general information on your responsibilities under the Act from the Division of Small Manufacturers, International and Consumer Assistance at its toll-free number (800) 638-2041 or (301) 443-6597 or at its Internet address http://www.fda.gov/cdrh/dsma/dsmamain.html

Sincerely yours,

Miriam C. Provost

for Celia M. Witten, Ph.D., M.D.
Director
Division of General, Restorative
and Neurological Devices
Office of Device Evaluation
Center for Devices and Radiological Health

Enclosure

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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057

K033761

Indications for Use

510(k) Number (if known): K033761

Device Name: Gelspheres™ Embolic Agent/Beadlock™ Embolic Agent

Indications For Use: GelSpheres™ Compressible Microsphere and BeadBlock™ Compressible Microspheres are intended for embolization of hypervascular tumors and arteriovenous malformations.

Prescription Use ✓ (Part 21 CFR 801 Subpart D) AND/OR Over-The-Counter Use _____ (21 CFR 807 Subpart C)

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

Concurrence of CDRH, Office of Device Evaluation (ODE)

Miriam C. Provost
(Division Sign-Off)
Division of General, Restorative and Neurological Devices

Page 1 of 1

510(k) Number K033761

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

85

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7.0 Proposed Labeling

GelSpheres™ Microspheres and Bead Block™ Compressible Microspheres labeling are updated to reflect proprietary name changes which were made to differentiate the different versions of the products.

Other than cosmetic changes and model numbers there are no differences from the labeling provided in K033761.

Sample labels for all versions of GelSpheres™ and Bead Block are on the pages which follow.

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7.1 Package Labels

7.1.1 Sample Label for Vial

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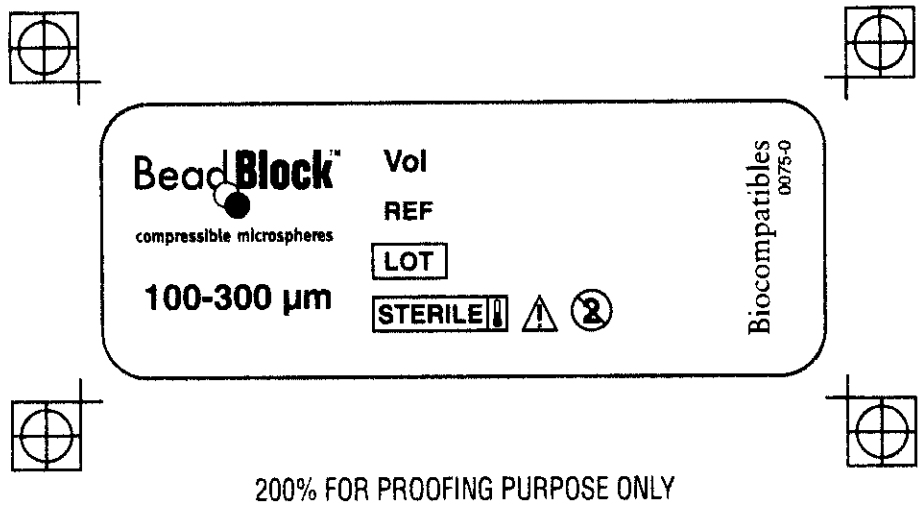
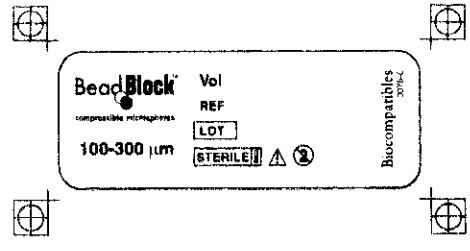
060



200% FOR PROOFING PURPOSE ONLY



(b)(4)

[redacted]

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88

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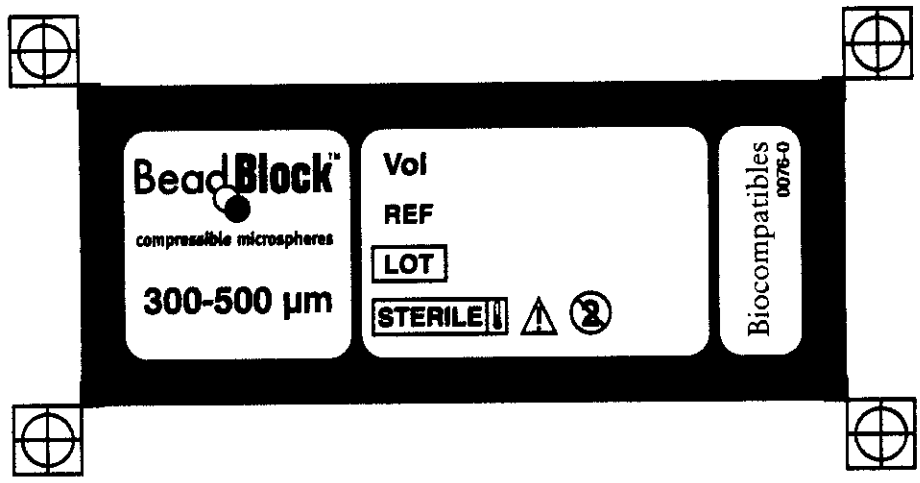
061



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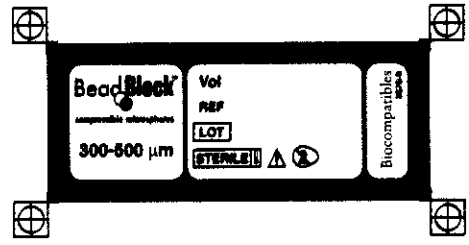

(b)(4)

[redacted]

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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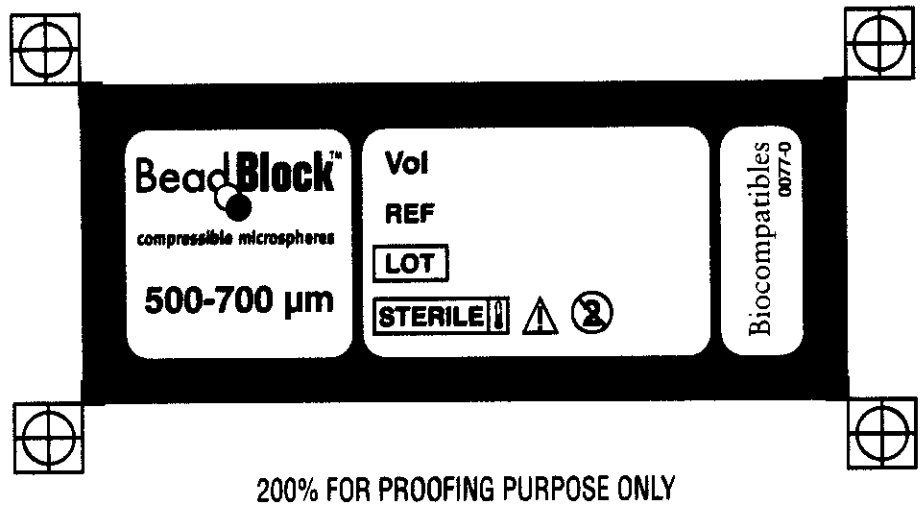
062



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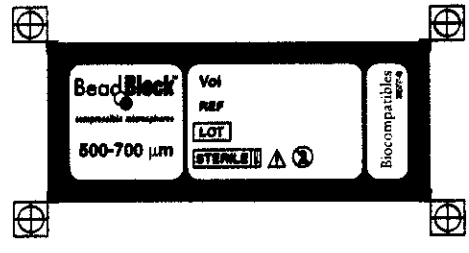

(b)(4)

[redacted]

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

90

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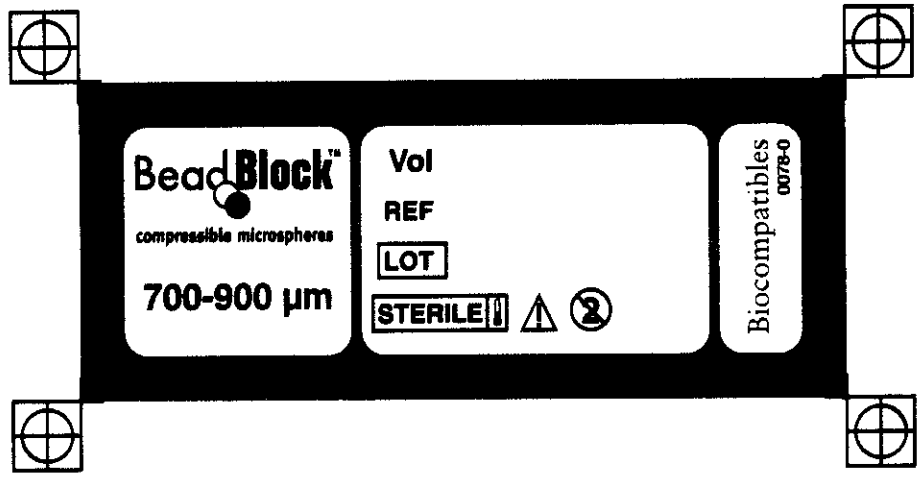
063



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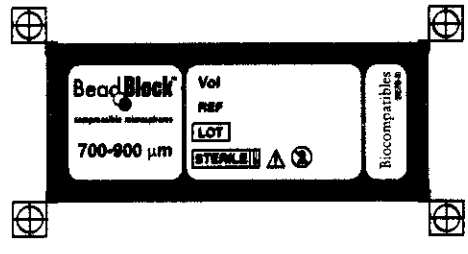

(b)(4)

[redacted]

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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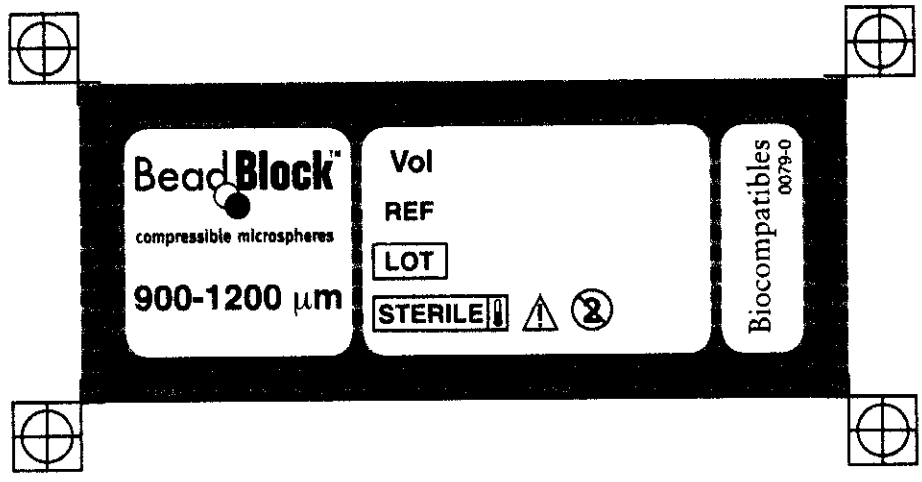
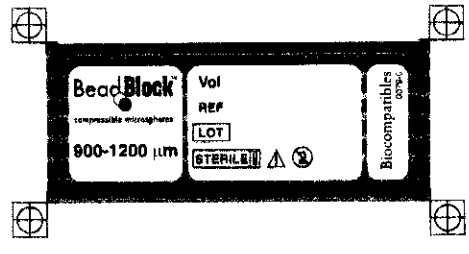
064



200% FOR PROOFING PURPOSE ONLY



(b)(4)

[redacted]

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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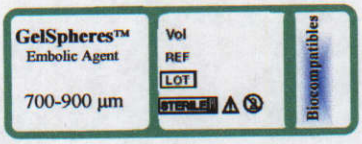
Draft Label for Vial, 1 or 2mL, 2 color (black & border color)

065

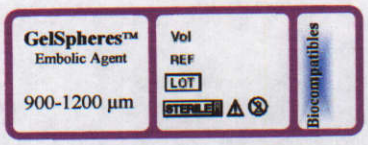
- Yellow

- Blue

- Red



- Green



- Purple

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.

Manufactured by:

Biocompatibles UK Ltd
Chapman House
Farnham Business Park
Weydon Lane
Farnham
Surrey GU9 8QT
UK
Tel: +44(0)1252 733 733
Fax: +44(0)1252 732 777
www.biocompatibles.com

(b)(4)

[redacted]

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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7.1.2 Sample Label for Syringe

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BIOCURE 237195

068

Bead C

Pre-Filled Syringes
100-300 µm
Total Vol. 5.0 mL per Unit
10 Units / Box

Vol

REF

LOT

CE 0086 Do Not Freeze

= Refer to Instructions

= Single Use Only

STERILE = Sterile (Steam)

Biocompatibles

0219-0

(b)(4)

[redacted]

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Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.

BIOCURE 237196

069

Bead

Pre-Filled Syringes
300-500 µm
Total Vol. 5.0 mL per Unit
10 Units / Box

Vol

REF

LOT

CE 0086 Do Not Freeze

= Refer to Instructions

= Single Use Only

STERILE = Sterile (Steam)

Biocompatibles

0220-0

(b)(4)

[redacted]

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.

BIOCURE 237197

070

Bead

Pre-Filled Syringes
500-700 µm
Total Vol. 5.0 mL per Unit
10 Units / Box

Vol

REF

LOT

CE 0086 Do Not Freeze

⚠ = Refer to Instructions

② = Single Use Only

STERILE = Sterile (Steam)

Biocompatibles

0221-0

(b)(4)

[redacted]

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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BIOCURE 237198

071

Bead C

Pre-Filled Syringes
700-900 µm
Total Vol. 5.0 mL per Unit
10 Units / Box

Vol

REF

LOT

CE 0086 Do Not Freeze

⚠ = Refer to Instructions

② = Single Use Only

STERILE = Sterile (Steam)

Biocompatibles

0222-0

(b)(4)

[redacted]

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.

BIOCURE 237199

072

Bead

Pre-Filled Syringes
900-1200 µm
Total Vol. 5.0 mL per Unit
10 Units / Box

Vol

REF

LOT

CE 0086 Do Not Freeze

= Refer to Instructions

= Single Use Only

STERILE = Sterile (Steam)

Biocompatibles

0223-0

(b)(4)

[redacted]

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

100

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073

7.2 Instructions For Use

7.2.1 IFU for Vial

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English

CE 0086

GelSpheres™ Embolic Agent

INSTRUCTIONS FOR USE

STERILE
SINGLE USE ONLY
NON-PYROGENIC

Sterilised by steam
Do not use if the package is opened or damaged

DESCRIPTION:

GelSpheres comprises a range of hydrogel microspheres that are biocompatible, hydrophilic, nonresorbable and precisely calibrated. GelSpheres microspheres are produced from polyvinyl alcohol and are available in the following size ranges:

Size	Label Colour
100 – 300 µm	Yellow
300 – 500 µm	Blue
500 – 700 µm	Red
700 – 900 µm	Green
900 – 1200 µm	Purple

PRESENTATION:

Syringe

- Syringe of 20 ml.
- Syringe is presented in a sterile, sealed pre-formed Tyvek® peel-away tray with a label colored to denote the specific size range.
- Each syringe contains approximately 1 ml or 2 ml of GelSpheres microspheres in non-pyrogenic, sterile, physiological buffered saline. Total volume of saline and GelSpheres microspheres is 5 ml.
- Each syringe is intended for single patient use only. Do not resterilise. Discard any unused material.

Vial

- Glass vial of 10 ml.
- Stopper sealed by an aluminum cap equipped with a colored cap.
- Each vial contains approximately 1 ml or 2 ml of GelSpheres microspheres in a non-pyrogenic, sterile, physiological buffered saline. Total volume of saline and GelSpheres microspheres is 8ml.
- Each vial is intended for single patient use only. Do not resterilize. Discard any unused material.

INDICATIONS:

GelSpheres microspheres are intended to be used for the embolization of hypervascular tumors and arteriovenous malformations (AVMs).

CLINICAL APPLICATIONS:

The scientific literature provides extensive documentation of embolization procedures using a wide variety of artificial agents in both neurological and peripheral vascular systems, including the head, neck, spine, liver, genitourinary tract, uterus, gastrointestinal system, limbs and lungs. A representative bibliography is provided following these instructions for use.

CONTRAINDICATIONS:

1. Patients intolerant to occlusion procedures.
2. Vascular anatomy or blood flow that precludes catheter placement or emboli injection.
3. Presence or likely onset of vasospasm.
4. Presence or likely onset of hemorrhage.

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5. Presence of severe atheromatous disease.
6. Presence of feeding arteries smaller than distal branches from which they emerge.
7. Presence of patent extra-to-intracranial anastomoses or shunts.
8. Presence of collateral vessel pathways potentially endangering normal territories during embolization.
9. Presence of end arteries leading directly to cranial nerves.
10. Presence of arteries supplying the lesion not large enough to accept GelSpheres microspheres.
11. Vascular resistance peripheral to the feeding arteries precluding passage of GelSpheres microspheres into the lesion.
12. Do not use GelSpheres microspheres in the following applications:
    i. Embolization of large diameter arteriovenous shunts (ie. where the blood does not pass through the arterial/capillary/venous transition but directly from artery to vein.
    ii. The pulmonary arterial vasculature.
    iii. Any vasculature where the use of GelSpheres Embolic Agent could pass directly into the internal carotid artery or the above listed vessels.

WARNING: Studies have shown that GelSpheres microspheres do not form aggregates and, as a result, penetrate deeper into the vasculature as compared to similarly sized PVA particles. Care must be taken to choose a larger sized GelSpheres Embolic Agent when embolizing arteriovenous malformations with large shunts to avoid passage of the microspheres into the pulmonary or coronary circulation.

The colour of the GelSpheres microspheres could be visible through the skin if injected into arteries feeding superficial tissues.

CAUTIONS:

- Do not use if the syringe, vial or packaging appear damaged.
- Sterile and single use product. Do not reuse.
- Select the size and quantity of GelSpheres microspheres appropriate for the pathology to be treated.
- Embolization with GelSpheres microspheres should only be performed by physicians who have received appropriate interventional occlusion training in the region intended to be embolized.

CAUTION:
Federal (USA) law restricts this device to sale by or on order of a physician.

POTENTIAL COMPLICATIONS:

1. Undesirable reflux or passage of GelSpheres microspheres into normal arteries adjacent to the targeted lesion or through the lesion into other arteries or arterial beds, such as the internal carotid artery, pulmonary, or coronary circulations.
2. Pulmonary embolization.
3. Ischemia at an undesirable location.
4. Capillary bed saturation and tissue damage.
5. Ischemic stroke or ischemic infarction.
6. Vessel or lesion rupture and hemorrhage.
7. Neurological deficits including cranial nerve palsies.
8. Vasospasm.
9. Death.
10. Recanalization.
11. Foreign body reactions necessitating medical intervention.
12. Infection necessitating medical intervention.

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13. Clot formation at the tip of the catheter and subsequent dislodgement.

CONSERVATION AND STORAGE:

- GelSpheres microspheres must be stored in a cool, dry and dark place in its original packaging.
- Use by the date indicated on the syringe/vial label.
- Do not freeze.

INSTRUCTIONS FOR USE:

- Carefully evaluate the vascular network associated with the lesion using high resolution imaging prior to beginning the embolization procedure.
- GelSpheres microspheres are available in a range of sizes. Care should be taken to choose the appropriate size GelSpheres microspheres that best matches the pathology (ie. vascular target/vessel size) and provides the desired clinical outcome.
- When embolizing arteriovenous malformations, choose a particle size that will occlude the nidus without passing through the AVM.
- Choose a delivery catheter based on the size of the target vessel. GelSpheres microspheres can tolerate temporary compression of 20% to 30% in order to facilitate passage through the delivery catheter.
- Introduce the delivery catheter into the target vessel according to standard techniques. Position the catheter tip as close as possible to the treatment site to avoid inadvertent occlusion of normal vessels.
- GelSpheres microspheres are not radio-opaque. It is recommended to monitor the embolization under fluoroscopic visualization by adding the desired amount of contrast medium to the physiologic suspension fluid.
- To deliver GelSpheres microspheres.

Pre-Filled Syringe:
Directly aspirate 5 ml of contrast medium into the syringe to obtain an approximate 50% contrast and approximate 50% saline solution mix. Remove all air from the syringe. To evenly suspend the GelSpheres microspheres/contrast solution, gently invert the 20 ml syringe several times. Attach the 20 ml syringe to one port of the luer-lock 3-way stopcock; and, if desired, a delivery catheter may be attached to the remaining port on the stopcock. Wait several minutes to allow the GelSpheres microspheres to suspend properly. Draw the GelSpheres microspheres/contrast solution into the injection syringe slowly and gently to minimize the potential of introducing air into the system. Purge all air from the system prior to injection. Inject the GelSpheres microspheres/contrast solution from the injection syringe under fluoroscopic visualization using a slow pulsatile action, while observing the contrast flow rate. If there is no effect on the flow rate, repeat the delivery process with additional injections of GelSpheres microspheres/contrast solution or larger sized GelSpheres microspheres may be considered. If the GelSpheres microspheres/contrast solution requires re-suspension, gently invert the 20 ml syringe several times. Exercise conservative judgment in determining the embolization endpoint.

Vial:
After shaking the bottle containing the GelSpheres microspheres, dilute the GelSpheres microspheres with contrast medium either in metallic / stainless steel cup or directly in the syringe. Take care to ensure proper suspension of the particles

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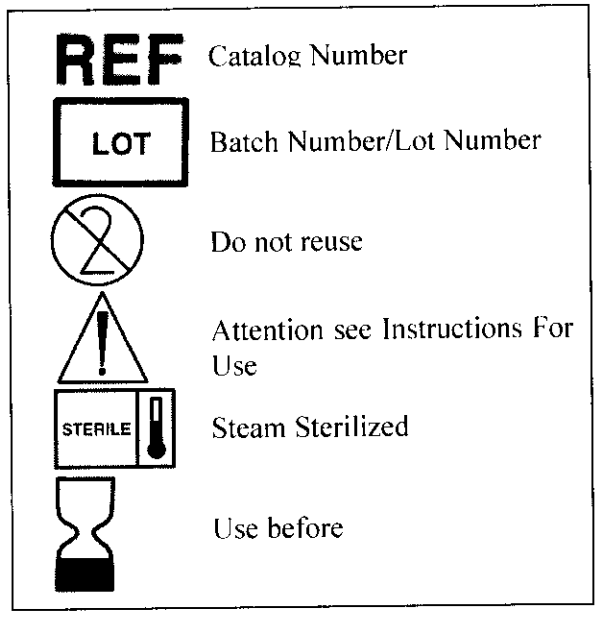
in the contrast medium to enhance particle distribution during injection. Draw the GelSpheres microspheres into a syringe needle of a size greater than or equal to 19 gauge (1.07 mm). Slowly inject GelSpheres microspheres into the delivery catheter under fluoroscopic visualization while observing the contrast flow rate. If there is no effect on the flow rate, choose a larger size particle and repeat the delivery process. Exercise conservative judgment in determining the embolization endpoint.

- Upon completion of the treatment, remove the catheter while maintaining gentle suction so as not to dislodge GelSpheres microspheres still within the catheter lumen.
- Discard any open, unused GelSpheres microspheres in the Pre-Filled Syringe or Vial.

PACKAGE LABEL:



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2. Ajani JA, Carrasco CH, Wallace S: Neuroendocrine tumors metastatic to the liver: Vascular occlusion therapy. *Ann NY Acad Sci,* 733: 479-487, Sep 1994.
3. Beaujeux R, Laurent A, Wassef M et al: Trysacryl gelatin microspheres for therapeutic embolization, II: Preliminary clinical evaluation in tumors and arteriovenous malformations. *AJNR,* 17: 541-548, March 1996.
4. Bendszus M, Klein R, Burger R, et al: Efficacy of trisacryl gelatin microspheres and polyvinylalcohol (PVA) particles in the preoperative embolization of meningiomas. Presented at the ASNR 36th Annual Meeting, May 17-21, 1998.
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6. Clouse ME: Hepatic artery embolization for bleeding and tumors. *Surg Clin N Am,* 69(2): 419-432, Apr 1989.
7. Derdyn C, Graves, V, Salamat M, Rappe A: Collagen-coated acrylic microspheres for embolotherapy: In vivo and in vitro characteristics. *AJNR,* 18:647-653, April 1997.
8. Deveikis JP: Endovascular therapy of intracranial arteriovenous malformations: materials and techniques. *Neuroimaging Clin of N Am,* 8(2):401-424, 1998.
9. Encarnacion CE, Kadir S, Beam CA, Payne CS: Gastrointestinal bleeding: Treatment with gastrointestinal arterial embolization. *Radiol,* 183(2):505-508, May 1992.
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11. Laurent A, Beaujeux R, Wassef M, et al: Trisacryl gelatin microspheres for therapeutic embolization, I: Development and

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in vitro evaluation. *AJNR*, 17:533-540, March 1996.

12. Rose SC: Transcatheter occlusion of injured extremity and pelvic arteries. In: Peripheral Vascular Intervention.
13. Bendszus M, Klein R, Burger R, et al: Efficacy of trisacryl gelatin microspheres versus polyvinyl alcohol particles in the preoperative embolization of meningiomas. *AJNR*, 21(2):255-261, Feb 2000.

Manufactured by:

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Fax +44 (0) 1252 732 777
http://www.biocompatibles.com

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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7.2.2 IFU for Syringe

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080

CE 0086

Patents

US 5,583,163
Other patents pending

Bead

Bead Block™ Embolic Agent

INSTRUCTIONS FOR USE

STERILE
SINGLE USE ONLY
NON-PYROGENIC

Sterilised by steam

Do not use if the package is opened or damaged

0316-1 08 2003

02-6-1 06 2003

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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2. Ajani JA, Carrasco CH, Wallace S: Neuroendocrine tumors metastatic to the liver: Vascular occlusion therapy. Ann NY Acad Sci, 733: 479-487, Sep 1994.
3. Beaujeux R, Laurent A, Wassef M et al: Trysacryl gelatin microspheres for therapeutic embolization, II: Preliminary clinical evaluation in tumors and arteriovenous malformations. AJNR, 17: 541-548, March 1996.
4. Bendszus M, Klein R, Burger R, et al: Efficacy of trisacryl gelatin microspheres and polyvinylalcohol (PVA) particles in the preoperative embolization of meningiomas. Presented at the ASNR 36th Annual Meeting, May 17-21, 1998.
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8. Deveikis JP: Endovascular therapy of intracranial arteriovenous malformations: materials and techniques. Neuroimaging Clin of N Am, 8(2):401-424, 1998.
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10. Frizzel RT, Fisher WS:Cure, morbidity, and mortality associated with embolization of brain arteriovenous malformations: A review of 1246 patients in 32 series over a 35-year period. Neurosurg, 37(6):1031-1040, Dec 1995.
11. Laurent A, Beaujeux R, Wassef M, et al: Trisacryl gelatin microspheres for therapeutic embolization, I: Development and in vitro evaluation. AJNR, 17:533-540, March 1996.
12. Rose SC: Transcatheter occlusion of injured extremity and pelvic arteries. In: Peripheral Vascular Intervention.
13. Bendszus M, Klein R, Burger R, et al: Efficacy of trisacryl gelatin microspheres versus polyvinyl alcohol particles in the preoperative embolization of meningiomas. AJNR, 21(2):255-261, Feb 2000.

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STERILE SINGLE USE ONLY - NON-PYROGENIC
Sterilised by steam
Do not use if the package is opened or damaged

DESCRIPTION

Bead Block comprises a range of hydrogel microspheres that are biocompatible, hydrophilic, nonresorbable and precisely calibrated. Bead Block microspheres are produced from polyvinyl alcohol and are available in the following size ranges:

Size	Label Colour
100 – 300 µm	Yellow
300 - 500 µm	Blue
500 – 700 µm	Red
700 – 900 µm	Green
900 - 1200 µm	Purple

PRESENTATION

Syringe

- Syringe of 20 ml.
- Syringe is presented in a sterile, sealed pre-formed Tyvek , peel-away tray with a label coloured to denote the specific size range.
- Each syringe contains approximately 1 ml or 2 ml of Bead Block microspheres in non-pyrogenic, sterile, physiological buffered saline. Total volume of saline and Bead Block microspheres is 5 ml.
- Each syringe is intended for single patient use only. Do not resterilise. Discard any unused material.

Vial

- Glass vial of 10 ml.
- Stopper sealed by an aluminum cap equipped with a coloured cap.
- Each vial contains approximately 1 ml or 2 ml of Bead Block microspheres in a non-pyrogenic, sterile, physiological buffered saline. Total volume of saline and Bead Block microspheres is 8ml.
- Each vial is intended for single patient use only. Do not resterilise. Discard any unused material.

INDICATIONS

Bead Block microspheres are intended to be used for the embolisation of hypervascular tumours and arteriovenous malformations (AVMs).

CLINICAL APPLICATIONS

The scientific literature provides extensive documentation of embolisation procedures using a wide variety of artificial agents in both neurological and peripheral vascular systems, including the head, neck, spine, liver, genitourinary tract, uterus, gastrointestinal system, limbs and lungs. A representative bibliography is provided following these instructions for use.

CONTRAINDICATIONS

1. Patients intolerant to occlusion procedures.
2. Vascular anatomy or blood flow that precludes catheter placement or emboli injection.
3. Presence or likely onset of vasospasm.
4. Presence or likely onset of haemorrhage.
5. Presence of severe atheromatous disease.
6. Presence of feeding arteries smaller than distal branches from which they emerge.
7. Presence of patent extra-to-intracranial anastomoses or shunts.
8. Presence of collateral vessel pathways potentially endangering normal territories during embolisation.
9. Presence of end arteries leading directly to cranial nerves.
10. Presence of arteries supplying the lesion not large enough to accept Bead Block microspheres.

C316-1 08 2003

C316-1 08 2003

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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11. Vascular resistance peripheral to the feeding arteries precluding passage of Bead Block microspheres into the lesion.
12. Do not use Bead Block microspheres in the following applications:
    i. Embolisation of large diameter arteriovenous shunts (ie. where the blood does not pass through the arterial/capillary/venous transition but directly from artery to vein.
    ii. The pulmonary arterial vasculature.
    iii. Any vasculature where the use of Bead Block Embolic Agent could pass directly into the internal carotid artery or the above listed vessels.

WARNING: Studies have shown that Bead Block microspheres do not form aggregates and, as a result, penetrate deeper into the vasculature as compared to similarly sized PVA particles. Care must be taken to choose a larger sized Bead Block Embolic Agent when embolising arteriovenous malformations with large shunts to avoid passage of the microspheres into the pulmonary or coronary circulation.

The colour of the Bead Block microspheres could be visible through the skin if injected into arteries feeding superficial tissues.

CAUTION

- Do not use if the syringe, vial or packaging appear damaged.
- Sterile and single use product. Do not reuse.
- Select the size and quantity of Bead Block microspheres appropriate for the pathology to be treated.
- Embolisation with Bead Block microspheres should only be performed by physicians who have received appropriate interventional occlusion training in the region intended to be embolised.

CAUTION:
Federal (USA) law restricts this device to sale by or on order of a physician.

POTENTIAL COMPLICATIONS

1. Undesirable reflux or passage of Bead Block microspheres into normal arteries adjacent to the targeted lesion or through the lesion into other arteries or arterial beds, such as the internal carotid artery, pulmonary, or coronary circulations.
2. Pulmonary embolisation.
3. Ischaemia at an undesirable location.
4. Capillary bed saturation and tissue damage.
5. Ischaemic stroke or ischaemic infarction.
6. Vessel or lesion rupture and haemorrhage.
7. Neurological deficits including cranial nerve palsies.
8. Vasospasm.
9. Death.
10. Recanalisation.
11. Foreign body reactions necessitating medical intervention.
12. Infection necessitating medical intervention.
13. Clot formation at the tip of the catheter and subsequent dislodgement.

CONSERVATION AND STORAGE

- Bead Block microspheres must be stored in a cool, dry and dark place in its original packaging.
- Use by the date indicated on the syringe/vial label.
- Do not freeze.

INSTRUCTIONS FOR USE

- Carefully evaluate the vascular network associated with the lesion using high resolution imaging prior to beginning the embolisation procedure.
- Bead Block microspheres are available in a range of sizes. Care should be taken to choose the appropriate size Bead Block microspheres that best matches the pathology (ie. vascular target/vessel size) and provides the desired clinical outcome.

0316-1 08 2003

διαμέσου του καθετήρα παροχής.

- Εισάγετε τον καθετήρα παροχής στο αγγείο-στόχο, σύμφωνα με πρότυπες τεχνικές. Τοποθετήστε την άκρη του καθετήρα όσο το δυνατόν πιο κοντά στη θέση θεραπείας, έτσι ώστε να αποφύγετε την ακούσια απόφραξη των φυσιολογικών αγγείων.
- Τα μικροσφαιρίδια Bead Block δεν είναι ακτινοσκιερά. Συνιστάται η παρακολούθηση της εμβολής υπό ακτινοσκοπική απεικόνιση, προσθέτοντας την επιθυμητή ποσότητα σκιαγραφικού μέσου στο φυσιολογικό υγρό εναιώρησης.
- Για την παροχή των μικροσφαιριδίων Bead Block.

Προγεμισμένη σύριγγα:

- Αναρροφήστε απευθείας 5 ml σκιαγραφικού μέσου μέσα στη σύριγγα για να αποκτήσετε ένα μίγμα από 50% περίπου σκιαγραφικού μέσου και 50% περίπου αλατούχου διαλύματος. Αφαιρέστε όλον τον αέρα από τη σύριγγα. Για ομοιόμορφη εναιώρηση του διαλύματος μικροσφαιριδίων Bead Block/σκιαγραφικού μέσου, αναστρέψτε απαλά τη σύριγγα των 20 ml αρκετές φορές. Προσαρτήστε τη σύριγγα των 20 ml σε μια οπή της τρίοδης στρόφιγγας luer-lock και, αν επιθυμείτε, μπορείτε να προσαρτήσετε έναν καθετήρα παροχής στην άλλη οπή πάνω στην στρόφιγγα. Περιμένετε αρκετά λεπτά, έτσι ώστε να επιτραπεί η σωστή εναιώρηση των μικροσφαιριδίων Bead Block. Αναρροφήστε το διάλυμα μικροσφαιριδίων Bead Block/σκιαγραφικού μέσου μέσα στη σύριγγα ένεσης βραδέως και απαλά, έτσι ώστε να ελαχιστοποιηθεί η δυνατότητα εισαγωγής αέρα μέσα στο σύστημα. Εξαερώστε όλο τον αέρα από το σύστημα πριν από την ένεση. Ενέσατε το διάλυμα μικροσφαιριδίων Bead Block/σκιαγραφικού μέσου από τη σύριγγα ένεσης υπό ακτινοσκοπική απεικόνιση, χρησιμοποιώντας μια βραδεία παλμική κίνηση, ενώ παρατηρείτε την ταχύτητα ροής του σκιαγραφικού μέσου. Αν δεν υπάρχει επίδραση πάνω στην ταχύτητα ροής, επαναλάβετε τη διαδικασία παροχής με επιπρόσθετες ενέσεις του διαλύματος μικροσφαιριδίων Bead Block/σκιαγραφικού μέσου ή μπορεί να δοκιμάσετε τα μεγαλύτερου μεγέθους μικροσφαιρίδια Bead Block. Αν το διάλυμα μικροσφαιριδίων Bead Block/σκιαγραφικού μέσου χρειαστεί νέα εναιώρηση, αναστρέψτε απαλά τη σύριγγα των 20 ml αρκετές φορές. Εφαρμόζετε συντηρητική κρίση για τον καθορισμό του τελικού σημείου εμβολής.

Φιαλίδιο:

- Μετά την ανακίνηση της φιάλης που περιέχει τα μικροσφαιρίδια Bead Block, αραιώστε τα μικροσφαιρίδια Bead Block με το σκιαγραφικό μέσο, είτε σε μεταλλικό/από ανοξείδωτο χάλυβα κύπελλο είτε απευθείας μέσα στη σύριγγα. Προσέξτε έτσι ώστε να εξασφαλίσετε σωστή εναιώρηση των σωματιδίων στο σκιαγραφικό μέσο, έτσι ώστε να αυξηθεί η κατανομή των σωματιδίων κατά τη διάρκεια της ένεσης. Αναρροφήστε τα μικροσφαιρίδια Bead Block μέσα σε μια βελόνα σύριγγας μεγέθους μεγαλύτερου από ή ίσο με 19 gauge (1,07 mm). Ενέσατε βραδέως τα μικροσφαιρίδια Bead Block μέσα στον καθετήρα παροχής υπό ακτινοσκοπική απεικόνιση, ενώ παρατηρείτε την ταχύτητα ροής του σκιαγραφικού μέσου. Αν δεν υπάρχει αποτέλεσμα, πάνω στην ταχύτητα ροής, επιλέξτε ένα μεγαλύτερο μέγεθος σωματιδίων και επαναλάβετε τη διαδικασία παροχής. Εφαρμόζετε συντηρητική κρίση για τον καθορισμό του τελικού σημείου εμβολής.

- Κατά την ολοκλήρωση της θεραπείας, αφαιρέστε τον καθετήρα, ενώ διατηρείτε απαλή αναρρόφηση, έτσι ώστε να μην εκτοπιστούν τα μικροσφαιρίδια Bead Block που είναι ακόμα μέσα στον αυλό του καθετήρα.
- Απορρίψτε οποιαδήποτε ανοικτά, αχρησιμοποίητα μικροσφαιρίδια Bead Block, που βρίσκονται στην προγεμισμένη σύριγγα ή το φιαλίδιο.

ΕΤΙΚΕΤΑ ΣΥΣΚΕΥΑΣΙΑΣ:

REF Αριθμός καταλόγου

LOT Αριθμός παρτίδας

Να μην επαναχρησιμοποιείται

Προσοχή βλέπε οδηγίες χρήσης

Αποστειρώθηκε με ατμό

Χρήση έως

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αίμα δε διέρχεται διαμέσου της αρτηριακής/τριχοειδούς/φλεβικής μετάβασης, αλλά απευθείας από αρτηρία σε φλέβα).

ii. Στο πνευμονικό αρτηριακό αγγειακό σύστημα.

iii. Οποιοδήποτε αγγειακό σύστημα όπου ο εμβολικός παράγοντας Bead Block θα μπορούσε κατά τη χρήση να διέλθει απευθείας μέσα στην εσωτερική καρωτίδα ή στα παραπάνω αναφερόμενα αγγεία.

ΠΡΟΕΙΔΟΠΟΙΗΣΗ: Μελέτες έχουν δείξει ότι τα μικροσφαιρίδια Bead Block δεν σχηματίζουν συσσωματώματα και, ως αποτέλεσμα, διεισδύουν βαθύτερα μέσα στο αγγειακό σύστημα σε σύγκριση με τα παρομοίου μεγέθους σωματίδια PVA. Πρέπει να δίνεται προσοχή κατά την επιλογή ενός μεγαλύτερου μεγέθους εμβολικού παράγοντα Bead Block, όταν δημιουργείται εμβολή σε αρτηριοφλεβώδεις δυσπλασίες με μεγάλες διαφυγές, έτσι ώστε να αποφεύγεται η διάβαση των μικροσφαιριδίων μέσα στην πνευμονική ή τη στεφανιαία κυκλοφορία.

Το χρώμα των μικροσφαιριδίων Bead Block θα μπορούσε να είναι ορατό διαμέσου του δέρματος αν ενίονταν μέσα στις αρτηρίες που τροφοδοτούν τους επιπολής ιστούς.

ΟΔΗΓΙΕΣ ΠΡΟΣΟΧΗΣ:

- Μη χρησιμοποιείτε αν η σύριγγα, το φιαλίδιο ή η συσκευασία φαίνεται ότι έχει υποστεί ζημιά.
- Προϊόν αποστειρωμένο και μόνο μιας χρήσης. Μη το επαναχρησιμοποιείτε.
- Επιλέξατε το κατάλληλο μέγεθος και ποσότητα των μικροσφαιριδίων Bead Block για την παθολογική κατάσταση που πρόκειται να υποβληθεί σε θεραπεία.
- Η εμβολή με μικροσφαιρίδια Bead Block θα πρέπει να εκτελείται μόνο από γιατρούς, οι οποίοι έχουν λάβει κατάλληλη εκπαίδευση σχετικά με την επέμβαση απόφραξης στην περιοχή που πρόκειται να δημιουργηθεί η εμβολή.

ΠΡΟΣΟΧΗ:
Η ομοσπονδιακή νομοθεσία των Η.ΠΑ. επιτρέπει την πώληση αυτής της συσκευής από ιατρό ή κατόπιν εντολής ιατρού.

ΔΥΝΗΤΙΚΕΣ ΕΠΙΠΛΟΚΕΣ:

1. Ανεπιθύμητη παλινδρόμηση ή διάβαση των μικροσφαιριδίων Bead Block μέσα από τις φυσιολογικές αρτηρίες, που είναι πλησίον της βλάβης-στόχου ή διαμέσου της βλάβης μέσα σε άλλες αρτηρίες ή αρτηριακά στρώματα, όπως στην κυκλοφορία της εσωτερικής καρωτίδας, την πνευμονική ή τη στεφανιαία κυκλοφορία.
2. Πνευμονική εμβολή.
3. Ισχαιμία σε ανεπιθύμητη θέση.
4. Κορεσμός του τριχοειδικού στρώματος και βλάβη ιστού.
5. Ισχαιμικό εγκεφαλικό επεισόδιο ή ισχαιμικό έμφραγμα.
6. Ρήξη αγγείου ή βλάβης και αιμορραγία.
7. Νευρολογικά ελαττώματα συμπεριλαμβανομένων των παραλύσεων κρανιακού νεύρου.
8. Αγγειοσπασμός.
9. Θάνατος.
10. Επαναδιάνοιξη αυλών.
11. Αντιδράσεις σε ξένο σώμα που χρειάζονται ιατρική επέμβαση.
12. Λοίμωξη που χρειάζεται ιατρική επέμβαση.
13. Σχηματισμός θρόμβου στην άκρη του καθετήρα και επακόλουθη εκτόπιση.

ΔΙΑΤΗΡΗΣΗ ΚΑΙ ΦΥΛΑΞΗ:

- Τα μικροσφαιρίδια Bead Block πρέπει να φυλάσσονται σε ένα δροσερό, ξηρό και σκοτεινό χώρο στην αρχική τους συσκευασία.
- Να χρησιμοποιούνται μέχρι την ημερομηνία λήξης, που αναγράφεται πάνω στην ετικέτα σύριγγας/φιαλιδίου.
- Να μην καταψύχονται.

ΟΔΗΓΙΕΣ ΧΡΗΣΗΣ:

- Αξιολογήστε προσεκτικά το αγγειακό δίκτυο, που σχετίζεται με τη βλάβη χρησιμοποιώντας απεικόνιση υψηλής ανάλυσης πριν από την έναρξη της διαδικασίας εμβολής.
- Τα μικροσφαιρίδια Bead Block διατίθενται σε ποικιλία μεγεθών. Πρέπει να δίνεται προσοχή για την επιλογή του κατάλληλου μεγέθους μικροσφαιριδίων Bead Block, που ταιριάζει καλύτερα με την παθολογική κατάσταση (δηλ. το μέγεθος του αγγειακού στόχου/αγγείου) και παρέχει την επιθυμητή κλινική έκβαση.
- Κατά την εμβολή αρτηριοφλεβωδών δυσπλασιών, επιλέξτε ένα μέγεθος σωματιδίου, που αποφράσσει την εστία χωρίς να διέρχεται διαμέσου της αρτηριοφλεβώδους δυσπλασίας (ΑΦΔ).
- Επιλέξτε έναν καθετήρα παροχής, που βασίζεται στο μέγεθος του αγγείου-στόχου. Τα μικροσφαιρίδια Bead Block μπορεί να ανεχτούν προσωρινή συμπίεση από 20% μέχρι 30%, έτσι ώστε να διευκολύνεται η διάβαση

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- When embolising arteriovenous malformations, choose a particle size that will occlude the nidus without passing through the AVM.
- Choose a delivery catheter based on the size of the target vessel. Bead Block microspheres can tolerate temporary compression of 20% to 30% in order to facilitate passage through the delivery catheter.
- Introduce the delivery catheter into the target vessel according to standard techniques. Position the catheter tip as close as possible to the treatment site to avoid inadvertent occlusion of normal vessels.
- Bead Block microspheres are not radio-opaque. It is recommended to monitor the embolisation under fluoroscopic visualisation by adding the desired amount of contrast medium to the physiologic suspension fluid.

TO DELIVER BEAD BLOCK MICROSPHERES

Pre-Filled Syringe:

o Directly aspirate 5 ml of contrast medium into the syringe to obtain an approximate 50% contrast and approximate 50% saline solution mix. Remove all air from the syringe. To evenly suspend the Bead Block microspheres/contrast solution, gently invert the 20 ml syringe several times. Attach the 20 ml syringe to one port of the luer-lock 3-way stopcock; and, if desired, a delivery catheter may be attached to the remaining port on the stopcock. Wait several minutes to allow the Bead Block microspheres to suspend properly. Draw the Bead Block microspheres/contrast solution into the injection syringe slowly and gently to minimise the potential of introducing air into the system. Purge all air from the system prior to injection. Inject the Bead Block microspheres/contrast solution from the injection syringe under fluoroscopic visualisation using a slow pulsatile action, while observing the contrast flow rate. If there is no effect on the flow rate, repeat the delivery process with additional injections of Bead Block microspheres/contrast solution or larger sized Bead Block microspheres may be considered. If the Bead Block microspheres/contrast solution requires re-suspension, gently invert the 20 ml syringe several times. Exercise conservative judgment in determining the embolisation endpoint.

Vial:

o After shaking the bottle containing the Bead Block microspheres, dilute the Bead Block microspheres with contrast medium either in metallic/stainless steel cup or directly in the syringe. Take care to ensure proper suspension of the particles in the contrast medium to enhance particle distribution during injection. Draw the Bead Block microspheres into a syringe needle of a size greater than or equal to 19 gauge (1.07 mm). Slowly inject Bead Block microspheres into the delivery catheter under fluoroscopic visualisation while observing the contrast flow rate. If there is no effect on the flow rate, choose a larger size particle and repeat the delivery process. Exercise conservative judgment in determining the embolisation endpoint.

- Upon completion of the treatment, remove the catheter while maintaining gentle suction so as not to dislodge Bead Block microspheres still within the catheter lumen.
- Discard any open, unused Bead Block microspheres in the Pre-Filled Syringe or Vial.

PACKAGE LABEL

REF	= Catalog Number		– Refer to instructions
LOT	– Batch Number/Lot Number	STERILE	= Steam Sterilised
	= Single Use		– Use before

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Español

ESTÉRIL DE USO ÚNICO NO PIROGÉNICO
Esterilizado por vapor
No utilizar si el paquete está dañado o abierto

DESCRIPCIÓN:

Bead Block está compuesto por una gama de microesferas de hidrogel que son biocompatibles, hidrofílicas, no reabsorbibles y están calibradas con precisión. Las microesferas de Bead Block se producen a partir de alcohol de polivinilo y están disponibles en los siguientes tamaños:

Tamaño	Color etiqueta
100 – 300 µm	Amarillo
300 - 500 µm	Azul
500 – 700 µm	Rojo
700 - 900 µm	Verde
900 1200 µm	Morado

PRESENTACIÓN:

Jeringa

- Jeringa de 20 ml.
- La jeringa se presenta en una bandeja de Tyvek®, sellada y estéril desechable con forma predefinida. Incluye una etiqueta del color correspondiente al intervalo de tamaño específico.
- Cada jeringa contiene aproximadamente 1 o 2 ml de microesferas Bead Block en solución salina fisiológica tamponada, estéril y no pirogénica. El volumen total de solución salina y de microesferas Bead Block es de 5 ml.
- Cada jeringa está destinada a usarse en un único paciente. No reesterilizar. Desechar el material no utilizado.

Vial

- Vial de vidrio de 10 ml.
- Tapón sellado con tapa de aluminio dotado con capuchón de color.
- Cada vial contiene aproximadamente 1 ó 2 ml de microesferas Bead Block en solución salina fisiológica tamponada, estéril y no pirogénica. El volumen total de salina solución y de microesferas Bead Block es de 8 ml.
- Cada vial está destinado a usarse en un único paciente. No reesterilizar. Desechar el material no utilizado.

INDICACIONES:

Las microesferas Bead Block están indicadas para la embolización de tumores hipervasculares y malformaciones arteriovenosas (MAV).

APLICACIONES CLÍNICAS:

La literatura científica ofrece una amplia documentación de procedimientos de embolización realizados utilizando una gran variedad de agentes artificiales, tanto en el sistema vascular periférico como en el neurológico, incluidos cabeza, cuello, médula espinal, hígado, tracto genitourinario, útero, aparato gastrointestinal, extremidades y pulmones. Al final de estas instrucciones de uso, se recoge una muestra representativa de dicha bibliografía.

CONTRAINDICACIONES:

1. Pacientes que no toleran procedimientos de oclusión.
2. Anatomía vascular o flujo sanguíneo que descartan la colocación de un catéter o la inyección de émbolos.
3. Presencia o probable aparición de angiospasmo.
4. Presencia o probable aparición de hemorragia.
5. Presencia de enfermedad ateromatosa grave.
6. Presencia de arterias aferentes menores que las ramas distales de las que emergen.
7. Presencia de derivaciones o anastomosis extra-intracraneales permeables.
8. Presencia de vasos colaterales que podrían poner en peligro los territorios normales durante la embolización.
9. Presencia de arterias finales que riegan directamente los nervios craneales.
10. El tamaño de las arterias que riegan la lesión no es suficientemente grande para admitir microesferas Bead Block.

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Ελληνικά

ΑΠΟΣΤΕΙΡΩΜΕΝΟΣ -ΜΙΑΣ ΧΡΗΣΗΣ ΜΟΝΟ -ΜΗ ΠΥΡΕΤΟΓΟΝΟΣ
Αποστειρωμένος με ατμό
Να μη χρησιμοποιείται αν η συσκευασία έχει ανοιχτεί ή έχει υποστεί ζημιά

ΠΕΡΙΓΡΑΦΗ:

Ο παράγοντας Bead Block περιλαμβάνει μια ποικιλία από μικροσφαιρίδια υδρογέλης, που είναι βιοσυμβατά, υδρόφιλα, μη απορροφήσιμα και με ακρίβεια βαθμονομημένα. Τα μικροσφαιρίδια Bead Block παράγονται από πολυβινυλαλκοόλη και διατίθενται στα παρακάτω εύρη μεγέθους:

Μέγεθος	Χρώμα ετικέτας
100 – 300 µm	Κίτρινη
300 – 500 µm	Μπλε
500 – 700 µm	Κόκκινη
700 – 900 µm	Πράσινη
900 – 1200 µm	Πορφυρή

ΣΥΣΚΕΥΑΣΙΑ:

Σύριγγα

- Σύριγγα των 20 ml.
- Η σύριγγα συσκευάζεται σε ένα αποστειρωμένο, σφραγισμένο προσχηματισμένο αποκολλώμενο δίσκο Tyvek® με χρωματισμένη ετικέτα για να υποδηλώνει το συγκεκριμένο εύρος μεγέθους.
- Κάθε σύριγγα περιέχει περίπου 1 ml ή 2 ml μικροσφαιριδίων Bead Block σε ένα μη πυρετογόνο, αποστειρωμένο, φυσιολογικό αλατούχο ρυθμιστικό διάλυμα. Ο συνολικός όγκος του αλατούχου διαλύματος και των μικροσφαιριδίων Bead Block είναι 5 ml.
- Κάθε σύριγγα προορίζεται για χρήση σε ένα μόνον ασθενή. Μην επαναποστειρώνετε. Απορρίψτε οποιοδήποτε αχρησιμοποίητο υλικό.

Φιαλίδιο

- Γυάλινο φιαλίδιο των 10 ml.
- Το πώμα είναι σφραγισμένο με ένα καπάκι από αλουμίνιο, που είναι εξοπλισμένο με χρωματιστό καπάκι.
- Κάθε φιαλίδιο περιέχει περίπου 1 ml ή 2 ml μικροσφαιρίδια Bead Block σε ένα μη πυρετογόνο, αποστειρωμένο, φυσιολογικό αλατούχο ρυθμιστικό διάλυμα. Ο συνολικός όγκος του αλατούχου διαλύματος και των μικροσφαιριδίων Bead Block είναι 8 ml.
- Κάθε φιαλίδιο προορίζεται για χρήση σε ένα μόνον ασθενή. Μην επαναποστειρώνετε. Απορρίψτε οποιοδήποτε αχρησιμοποίητο υλικό.

ΕΝΔΕΙΞΕΙΣ:

Τα μικροσφαιρίδια Bead Block προορίζονται για χρήση στην εμβολή υπεραγγειακών όγκων και αρτηριοφλεβωδών δυσπλασιών (ΑΦΔ/AVM).

ΚΛΙΝΙΚΕΣ ΕΦΑΡΜΟΓΕΣ:

Η επιστημονική βιβλιογραφία παρέχει εκτεταμένο υλικό τεκμηρίωσης σχετικά με τις διαδικασίες εμβολής που χρησιμοποιούν ευρεία ποικιλία τεχνητών παραγόντων, τόσο στο νευρολογικό όσο και στο περιφερικό αγγειακό σύστημα, συμπεριλαβανομένων της κεφαλής, του συχένα, της σπονδυλικής στήλης, του ήπατος, της ουροποιογεννητικής οδού, της μήτρας, του γαστρεντερικού συστήματος, των άκρων και των πνευμόνων. Μια αντιπροσωπευτική βιβλιογραφία παρέχεται στο τέλος αυτών των οδηγιών χρήσης.

ΑΝΤΕΝΔΕΙΞΕΙΣ:

1. Ασθενείς με δυσανεξία σε διαδικασίες απόφραξης.
2. Αγγειακή ανατομία ή αιματική ροή που αποκλείει την τοποθέτηση καθετήρα ή ένεση εμβόλων.
3. Παρουσία ή πιθανή έναρξη αγγειοσπασμού.
4. Παρουσία ή πιθανή έναρξη αιμορραγίας.
5. Παρουσία βαριάς αθηρωματώδους νόσου.
6. Παρουσία τροφοδοτικών αρτηριών που είναι μικρότερες από τους περιφερικούς κλάδους από τους οποίους προέρχονται.
7. Παρουσία βατών εξωκρανιακών-ενδοκρανιακών αναστομώσεων ή διαφυγών.
8. Παρουσία παράπλευρων αγγειακών οδών, που αποτελούν δυνητικό κίνδυνο στις φυσιολογικές περιοχές κατά τη διάρκεια της εμβολής.
9. Παρουσία τελικών αρτηριών που οδηγούν απευθείας στα κρανιακά νεύρα.
10. Παρουσία αρτηριών, που τροφοδοτούν τη βλάβη και που δεν είναι αρκετά μεγάλες για να δεχτούν τα μικροσφαιρίδια Bead Block.
11. Αγγειακή αντίσταση περιφερικά στις τροφοδοτικές αρτηρίες, που αποκλείει τη διάβαση των μικροσφαιριδίων Bead Block εντός της βλάβης.
12. Μην χρησιμοποιείτε τα μικροσφαιρίδια Bead Block στις παρακάτω εφαρμογές:
    i. Εμβολή αρτηριοφλεβωδών διαφυγών μεγάλης διαμέτρου (δηλ. όπου το

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- Mikrosfery Bead Block nie są widoczne przy pomocy promieni Roentgena. Zaleca się monitorowanie zabiegu embolizacji przy pomocy technik fluoroskopowych, dodając odpowiednią ilość kontrastu do roztworu fizjologicznego.
- Aby wprowadzić mikrosfery Bead Block:

Strzykawka napełniona fabrycznie:

- Zaaspirować bezpośrednio do strzykawki 5ml kontrastu, w celu uzyskania roztworu w proporcjach 50% kontrastu - 50% soli. Usunąć powietrze ze strzykawki. Kilkakrotnie, delikatnymi ruchami obracać strzykawkę o pojemności 20 ml, w celu równomiernego rozprowadzenia roztworu mikrosfer Bead Block/kontrastu. Dołączyć strzykawkę do jednej z końcówek trójnika z łącznikim luer-lock; w razie potrzeby do jednej z pozostałych końcówek można podłączyć cewnik doprowadzający. Odczekać kilka minut, aby mikrosfery Bead Block zdołały się równomiernie rozprowadzić. Zaaspirować roztwor mikrosfer/kontrastu do strzykawki przeznaczonej do wstrzykiwania roztworu. Należy to robić delikatnie i powoli, aby zminimalizować ryzyko wprowadzenia powietrza do systemu. Przed wprowadzeniem roztworu należy pozbyć się powietrza z systemu. Pod kontrolą techniki fluoroskopowej i przy użyciu przeznaczonej do tego celu strzykawki, dokonać wstrzyknięcia roztworu mikrosfer Bead Block/kontrastu. Wprowadzanie roztworu powinno się odbywać powoli, ruchami pulsacyjnymi, przy równoczesnej obserwacji tempa jego przepływu. Jeśli natężenie przepływu nie ulega zmianie, powtórzyć proces wprowadzania roztworu – dokonać dodatkowych iniekcji roztworu mikrosfer Bead Block/kontrastu lub rozważyć możliwość wprowadzenia mikrosfer Bead Block większego rozmiaru. W razie potrzeby ponownego rozprowadzenia mikrosfer Bead Block/kontrastu w roztworze, należy kilkakrotnie, delikatnie obrócić strzykawkę z roztworem. Wykazać się ostrożnością, wyznaczając moment zakończenia embolizacji.

Fiolka:

- Po wstrząśnięciu butelki z mikrosferami Bead Block, rozcieńczyć je kontrastem w naczyniu metalicznym/ze stali nierdzewnej lub bezpośrednio w strzykawce. Upewnić się, że doszło do dokładnego rozprowadzenia cząsteczek w kontraście, aby zapewnić właściwą dystrybucję cząsteczek podczas wstrzykiwania ich do naczynia. Zaaspirować mikrosfery Bead Block przy pomocy igły o rozmiarze większym lub równym 1,07mm (19G). Pod kontrolą techniki fluoroskopowej wstrzyknąć powoli mikrosfery Bead Block do cewnika doprowadzającego, obserwując jednocześnie uważnie tempo przepływu kontrastu. Jeśli natężenie przepływu nie ulega zmianie, dobrać cząsteczki większych rozmiarów i powtórzyć proces. Wykazać się ostrożnością, wyznaczając moment zakończenia embolizacji.

- Po zakończeniu zabiegu, usunąć cewnik, utrzymując delikatne zasysanie, mające na celu zapobiezenie wydostania się mikrosfer Bead Block, które pozostają nadal w świetle cewnika.
- Wyrzucić otwarte strzykawki lub fiolki z nie zużytymi mikrosferami Bead Block.

NALEPKI NA OPAKOWANIU:

REF — Numer katalogowy

LOT — Numer partii

Nie wykorzystywać ponownie

Uwaga – patrz Instrukcja użycia

Produkt sterylizowany parą

Data przydatności do użycia

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11. Resistencia vascular periférica a las arterias aferentes que impiden la llegada de las microesferas Bead Block a la lesión.
12. No usar las microesferas Bead Block para las siguientes aplicaciones:
    i. Embolización de derivaciones arteriovenosas de gran diámetro (es decir, en casos en los que el flujo sanguíneo no realiza la transición arteria/capilar/vena sino que pasa directamente de la arteria a la vena).
    ii. Vasculatura arterial pulmonar.
    iii. Cualquier vasculatura en la que el agente embólico Bead Block pudiera pasar directamente a la arteria carótida interna o a los vasos indicados más arriba.

ADVERTENCIA: Existen estudios que demuestran que las microesferas Bead Block no forman agregados y, por este motivo, penetran en la vasculatura más a fondo que otras partículas de alcohol de polivinilo de tamaño similar. Debe tomarse precaución de elegir un agente embólico Bead Block de mayor tamaño cuando se embolizan malformaciones arteriovenosas con grandes derivaciones para evitar el paso de las microesferas a la circulación pulmonar o coronaria.

Si se inyecta en las arterias aferentes a los tejidos superficiales, es posible ver el color de las microesferas Bead Block a través de la piel.

PRECAUCIONES:

- No utilizar si la jeringa, el vial o el paquete parece dañado.
- Producto estéril y de un solo uso. No reutilizar.
- Seleccionar el tamaño y la cantidad apropiada de microesferas Bead Block para la patología que va a tratarse.
- La embolización con microesferas Bead Block sólo debe ser realizada por médicos que han recibido la formación adecuada en oclusión intervencional de la región que se pretende embolizar.

ATENCIÓN:
Las leyes federales estadounidenses restringen la venta de este dispositivo a médicos o a una prescripción facultativa.

COMPLICACIONES POSIBLES:

1. Reflujo o paso no deseado de las microesferas Bead Block a las arterias normales adyacentes a la lesión tratada o a través de dicha lesión hacia otras arterias o lechos arteriales, como la arteria carótida interna o las circulaciones pulmonar o coronaria.
2. Embolización pulmonar.
3. Isquemia en una región no deseada.
4. Saturación de lecho capilar y daño en los tejidos.
5. Apoplejía isquémica o infarto isquémico.
6. Hemorragia y rotura de lesión y vasos.
7. Déficit neurológicos, incluidas parálisis de nervio craneal.
8. Angiospasmo.
9. Muerte.
10. Recanalización.
11. Reacciones corporales a cuerpos extraños que precisan intervención médica.
12. Infección que precisa intervención médica.
13. Formación de coágulos en la punta del catéter y sucesivo desplazamiento.

CONSERVACIÓN Y ALMACENAMIENTO:

- Las microesferas Bead Block deben almacenarse en un lugar oscuro, seco y fresco en su envase original.
- Utilizar antes de la fecha indicada en la etiqueta de la jeringa o vial.
- No congelar.

INSTRUCCIONES DE USO:

- Antes de proceder a la embolización, evaluar cuidadosamente la estructura vascular asociada a la lesión mediante imágenes de alta resolución.
- Las microesferas Bead Block están disponibles en varios intervalos de tamaños. Debe elegirse con precaución el intervalo de tamaño adecuado que mejor convenga a la patología (es decir, al tamaño del vaso o zona vascular) y que proporcione el resultado clínico deseado.
- Al embolizar malformaciones arteriovenosas, debe elegirse un tamaño de partícula que ocluya el nido sin atravesar la MAV.

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Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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- Seleccionar el cateter de administración en función del tamaño del vaso tratado. Las microesferas Bead Block pueden tolerar una compresión temporal del 20% al 30% para facilitar el paso a través de dicho catéter.
- Introducir el cateter de administración en el vaso tratado de acuerdo con las técnicas estándar. Colocar la punta del catéter tan cerca del lugar tratado como sea posible para evitar que se produzca una oclusión involuntaria de los vasos normales.
- Las microesferas Bead Block no son radioopacas. Se recomienda controlar la embolización con visualización fluoroscópica agregando la cantidad deseada de medio de contraste al líquido fisiológico de suspensión.
- Para administrar las microesferas Bead Block:

Jeringa prellenada:

o Aspirar directamente 5 ml de medio de contraste en la jeringa para obtener un contraste aproximado del 50% y una mezcla de solución salina de aproximadamente el 50%. Retirar todo el aire de la jeringa. Para suspender uniformemente las microesferas Bead Block/la solución de contraste, invierta suavemente la jeringa de 20 ml varias veces. Conectar la jeringa de 20 ml a una toma de la llave de paso de tres entradas con luer-lock; si se desea, puede acoplarse un catéter de administración a la toma libre de la llave de paso. Esperar unos minutos para dejar que las microesferas Bead Block se suspendan en la solución debidamente. Introduzca las microesferas Bead Block/la solución de contraste en la jeringa lenta y suavemente para minimizar la posibilidad de que entre aire en el dispositivo. Purgue todo el aire de dicho dispositivo antes de proceder a la inyección. Inyecte las microesferas Bead Block/la solución de contraste de la jeringa con visualización fluoroscópica poco a poco y a impulsos, observando la cantidad de fluido de contraste. Si no se aprecia ningún efecto en el flujo, repetir el proceso de administración con sucesivas inyecciones de microesferas Bead Block/solución de contraste o considerar el uso de microesferas Bead Block de mayor tamaño. Si fuera necesario volver a suspender las microesferas Bead Block/la solución de contraste, invierta suavemente la jeringa de 20 ml varias veces. Adopte una postura prudente al determinar el punto final de la embolización.

Vial:

o Tras agitar el frasco que contiene las microesferas Bead Block, diluir dichas microesferas con un medio de contraste en un recipiente metálico o de acero inoxidable o directamente en la jeringa. Asegurarse de que la suspensión de las partículas en el medio de contraste es la correcta con el fin de mejorar la distribución de las partículas durante la inyección. Introducir las microesferas Bead Block en una aguja de tamaño igual o superior a calibre 19 (1,07 mm). Inyectar lentamente las microesferas Bead Block en el cateter de administración con visualización fluoroscópica al tiempo que se observa el flujo de contraste. Si no se aprecia ningún efecto sobre el flujo, elegir partículas de mayor tamaño y repetir el proceso de administración. Adopte una postura prudente al determinar el punto final de la embolización.

- Al completar el tratamiento, retirar el cateter succionando suavemente al mismo tiempo para no desplazar las microesferas Bead Block que aún se encuentran en el lumen del cateter.
- Desechar todas las microesferas Bead Block abiertas y no utilizadas de la jeringa prellenada o del vial.

ETIQUETA DEL ENVASE:

REF	= Número de catálogo		Atención: lóanse las instrucciones de uso
LOT	= Número de lote		= Esterilizado por vapor
	= No reutilizable		= Utilizar antes de

iii. Systemów naczyniowych, w których użycie środka embolizującego Bead Block mogłoby spowodować jego bezpośrednie przedostanie się do tętnicy szyjnej wewnętrznej lub wymienionych powyżej naczyń.

UWAGA: Badania wykazują, że mikrosfery Bead Block nie tworzą skupisk i w konsekwencji przenikają głębiej do systemu naczyniowego niż cząsteczki PVA o podobnej wielkości. Do embolizacji malformacji tętniczo-żylnych z dużymi przepływami należy więc wybierać środki embolizujące Bead Block o większych rozmiarach. Pozwoli to zapobiec przedostawaniu się mikrosfer do systemu krążenia płucnego lub wieńcowego.

Kolor mikrosfer Bead Block będzie widoczny pod skórą, jeśli zostaną one wstrzyknięte do tętnic zaopatrujących tkanki powierzchniowe.

ŚRODKI OSTROŻNOŚCI:

- Nie używać, jeśli strzykawka, fiolka lub opakowanie wygląda na uszkodzone.
- Produkt sterylny, jednorazowego użytku. Nie używać powtórnie.
- Dobór rozmiaru i ilości mikrosfer Bead Block powinien być uzależniony od leczonej zmiany patologicznej.
- Zabieg embolizacji z wykorzystaniem mikrosfer Bead Block powinien być wykonywany jedynie przez lekarza, który przeszedł odpowiednie przeszkolenie z dziedziny okluzji zabiegowej odpowiedniej grupy naczyń.

UWAGA:
Wg amerykańskiego prawa federalnego zestaw może być sprzedawany jedynie przez lekarza lub na jego zlecenie.

POTENCJALNE POWIKŁANIA:

1. Niepożądany wsteczny odpływ lub przedostanie się mikrosfer Bead Block do tętnic nie zmienionych chorobowo, przylegających do leczonej zmiany naczyniowej; lub ze zmiany naczyniowej do tętnic lub ich łożysk, np. tętnicy szyjnej wewnętrznej, krążenia płucnego lub wieńcowego.
2. Embolizacja naczyń płucnych.
3. Wystąpienie niedokrwienia w niepożądanym miejscu.
4. Saturacja łożyska kapilarnego i uszkodzenie tkanek.
5. Udar lub zawał niedokrwienny.
6. Rozerwanie naczynia lub zmiany naczyniowej i krwotok.
7. Ubytki neurologiczne, włącznie z porażeniem nerwów czaszkowych.
8. Skurcz naczynia.
9. Śmierć.
10. Rekanalizacja.
11. Niepożądane reakcje na ciało obce wymagające interwencji medycznej.
12. Infekcja wymagająca interwencji medycznej.
13. Uformowanie się skrzepu na końcu cewnika z następowym wyparciem.

PRZECHOWYWANIE:

- Mikrosfery Bead Block należy przechowywać w oryginalnym opakowaniu w chłodnym, suchym i ciemnym miejscu.
- Zużyć przed upływem daty ważności, podanej na nalepce na opakowaniu strzykawki/ na fiolce.
- Nie zamrażać.

INSTRUKCJA UŻYCIA:

- Przed rozpoczęciem zabiegu embolizacji należy dokładnie ocenić unaczynienie obszaru związane ze zmianą naczyniową/guzem, przy użyciu technik obrazowania wysokiej rozdzielczości.
- Mikrosfery Bead Block dostępne są w różnych rozmiarach. Aby zabieg embolizacji mógł przynieść oczekiwany wynik, dobór rozmiaru mikrosfer powinien być podyktowany rodzajem zmiany poddawanej zabiegowi (tj. rodzaj zmiany/wielkość naczynia).
- Podczas embolizacji malformacji tętniczo-żylnych (AVM) należy dobrać rozmiar cząsteczek tak, aby pozwoliły one na zamknięcie ogniska zmiany i nie przedostały się poza malformację.
- Cewnik doprowadzający powinien być dobrany odpowiednio do rozmiaru naczynia docelowego. Mikrosfery Bead Block tolerują czasową kompresję 20 do 30%, która pozwala na przejście mikrosfer przez cewnik doprowadzający.
- Wprowadzić cewnik do naczynia docelowego zgodnie ze standardowymi procedurami. Umieścić końcówkę cewnika jak najbliżej zmiany poddawanej zabiegowi, w celu uniknięcia nieumyślnego zamknięcia naczyń niezmienionych chorobowo.

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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POLSKI

JAŁOWY - JEDNORAZOWEGO UŻYTKU - APIROGENNY
Sterylizowany parą
Nie używać w przypadkach, kiedy opakowanie jest otwarte lub zniszczone

OPIS:
Bead Block to zestaw biologicznie zgodnych, wodochłonnych, niewchłanialnych i dokładnie wykalibrowanych hydrożelowych mikrosfer. Mikrosfery Bead Block produkowane są z alkoholu poliwinylowego i dostępne są w następujących rozmiarach:

Rozmiar	Kolor nalepki
100 – 300 µm	Żółty
300 – 500 µm	Niebieski
500 – 700 µm	Czerwony
700 – 900 µm	Zielony
900 – 1200 µm	Fioletowy

OPIS ZESTAWU:
Strzykawka
- Strzykawka o pojemności 20 ml.
- Strzykawka znajduje się w sterylnym, szczelnym, opakowaniu Tyvek® z odrywaną przykrywką. Kolor nalepki na opakowaniu określa rozmiar produktu.
- Każda strzykawka zawiera średnio 1 lub 2 ml mikrosfer Bead Block, zawieszonych w apirogennej, jałowej, buforowanej soli fizjologicznej. Całkowita objętość roztworu soli z mikrosferami wynosi 5 ml.
- Strzykawka przeznaczona jest do jednorazowego użycia. Nie sterylizować powtórnie. Wyrzucić nie zużyty materiał.

Fiolka
- Szklana fiolka o pojemności 10 ml.
- Korek zabezpieczony aluminiowym kapslem z kolorową nasadką.
- Każda fiolka zawiera średnio 1 lub 2 ml mikrosfer Bead Block, zawieszonych w apirogennej, jałowej, buforowanej soli fizjologicznej. Całkowita objętość roztworu soli z mikrosferami wynosi 8 ml.
- Fiolka przeznaczona jest do jednorazowego użycia. Nie sterylizować powtórnie. Wyrzucić nie zużyty materiał.

WSKAZANIA:
Mikrosfery Bead Block przeznaczone są do użycia w embolizacji guzów bogato-unaczynionych i malformacji tętniczo-żylnych (AVM – arteriovenous malformation).

ZASTOSOWANIE KLINICZNE:
Literatura naukowa przedstawia szeroką dokumentację technik embolizacyjnych z wykorzystaniem różnorodnych czynników sztucznych, zarówno w układzie krążenia mózgowego jak i obwodowego, obejmującego naczynia głowy, szyi, kręgosłupa, wątroby, układu moczowo-płciowego, macicy, układu pokarmowego, kończyn i płuc. Na końcu tej ulotki znajduje się wybrana bibliografia.

PRZECIWWSKAZANIA:
1. Pacjenci nie kwalifikujący się do zabiegów okluzyjnych.
2. Budowa naczyń lub przepływ krwi uniemożliwiający umieszczenie cewnika lub wprowadzenie materiału embolizacyjnego.
3. Obecność lub prawdopodobieństwo wystąpienia skurczu naczyń.
4. Obecność lub prawdopodobieństwo wystąpienia krwotoku.
5. Obecność zaawansowanej choroby miażdżycowej.
6. Tętnice zaopatrujące są mniejsze niż odgałęzienia dystalne, od których odchodzą.
7. Obecność drożnych anastomoz zewnątrz-wewnątrzczaszkowych.
8. Obecność krążenia obocznego, stanowiącego potencjalne zagrożenie dla obszarów niezmienionych chorobowo podczas wykonywania zabiegu embolizacji.
9. Obecność tętnic końcowych prowadzących bezpośrednio do nerwów czaszkowych.
10. Tętnice doprowadzające krew do zmiany naczyniowej/guza są zbyt małe, aby przyjąć mikrosfery Bead Block.
11. Obwodowy opór naczyniowy tętnic zaopatrujących uniemożliwia przedostanie się mikrosfer do zmiany naczyniowej/guza.
12. Nie stosować mikrosfer Bead Block w następujących przypadkach:
    i. Embolizacji przecieków tętniczo-żylnych o dużej średnicy (tj. kiedy następuje pominięcie układu naczyń włośniczkowych i krew przechodzi bezpośrednio z tętnicy do żyły).
    ii. Płucnego układu tętniczego.

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ITALIANO

STERILE - UNICAMENTE MONOUSO - NON PIROGENICO
Sterilizzato a vapore
Non utilizzare se la confezione è aperta o danneggiata

DESCRIZIONE:
Bead Block comprende una gamma di microsfere idrogel biocompatibili, idrofile, non riassorbibili e tarate in modo molto preciso. Le microsfere Bead Block sono prodotte a base di alcol polivinilico e sono disponibili nelle misure seguenti:

Ordine di Grandezza	Colore Etichetta
100 – 300 µm	Giallo
300 – 500 µm	Blu
500 – 700 µm	Rosso
700 – 900 µm	Verde
900 – 1200 µm	Viola

PRESENTAZIONE:
Siringa
- Siringa da 20 ml.
- Siringa sterile confezionata in una vaschetta preformata, sigillata con lamina in Tyvek®, dotata di etichetta del colore corrispondente all'ordine di grandezza delle microsfere.
- Ogni siringa contiene circa 1 ml o 2 ml di microsfere Bead Block in una soluzione tampone fisiologica salina non pirogenica e sterile. Il volume totale della soluzione salina con microsfere Bead Block è di 5 ml.
- Ogni siringa deve essere utilizzata soltanto per un paziente. Non sterilizzare di nuovo. Scartare tutto il materiale non utilizzato.

Flacone
- Flacone di vetro da 10 ml.
- Tappo sigillato con cappuccio di alluminio dotato di rivestimento colorato.
- Ogni flacone contiene circa 1 ml o 2 ml di microsfere Bead Block in una soluzione tampone fisiologica salina non pirogenica e sterile. Il volume totale della soluzione salina con microsfere Bead Block è di 8 ml.
- Ogni flacone deve essere utilizzatoa soltanto per un paziente. Non sterilizzare di nuovo. Scartare tutto il materiale non utilizzato.

INDICAZIONI:
Le microsfere Bead Block devono essere utilizzate per l'embolizzazione dei tumori ipervascolari e delle malformazioni arterovenose (AVMs).

APPLICAZIONI CLINICHE:
La letteratura scientifica offre un'ampia documentazione sulle procedure di embolizzazione con una grande varietà di agenti artificiali sia nel sistema neurologico che nel sistema vascolare periferico, compresi testa, collo, colonna vertebrale, fegato, apparato urogenitale, utero, apparato gastrointestinale, arti e polmoni. Dopo queste istruzioni per l'uso viene riportata una bibliografia rappresentativa.

CONTROINDICAZIONI:
1. Pazienti intolleranti alle procedure di occlusione.
2. Anatomia vascolare o flusso ematico che preclude il posizionamento del catetere o l'iniezione di emboli.
3. Presenza o eventuale insorgenza di vasospasmo.
4. Presenza o eventuale insorgenza di emorragia.
5. Presenza di patologia ateromatosa acuta.
6. Presenza di arterie di alimentazione inferiori alle ramificazioni distali da cui emergono.
7. Presenza di evidenti anastomosi o shunt extra intracranici.
8. Presenza di percorsi collaterali dei vasi che eventualmente possono compromettere le regioni normali durante l'embolizzazione.
9. Presenza di arterie terminali che portano direttamente ai nervi craniali.
10. Presenza di arterie che alimentano la lesione non abbastanza grandi da accogliere le microsfere Bead Block.
11. Resistenza vascolare secondaria alle arterie di alimentazione che preclude il passaggio delle microsfere Bead Block nella lesione.

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Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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12. Non utilizzare le microsfere Bead Block per le applicazioni che seguono:
    i. Embolizzazione di shunt arterovenosi di diametro largo (ossia dove il sangue non segue il percorso arterie/capillari/vene ma passa direttamente dalle arterie alle vene).
    ii. Vascolarizzazione polmonare arteriosa.
    iii. Ogni vascolarizzazione in cui l'uso dell'Agente Embolizzante Bead Block potrebbe passare direttamente nell'arteria carotide interna o nei vasi sopra elencati.

ATTENZIONE: Studi hanno dimostrato che le microsfere Bead Block non formano aggregati e, di conseguenza, penetrano nel sistema vascolare più in profondità delle particelle di acetato di polivinile (PVA) della stessa grandezza. Occorre scegliere attentamente un Agente Embolizzante Bead Block più grande quando si embolizzano le malformazioni arterovenose con shunt più larghi per impedire il passaggio delle microsfere nella circolazione polmonare o coronarica.

Il colore delle microsfere Bead Block potrebbe essere visibile attraverso la pelle se iniettate nelle arterie che alimentano i tessuti superficiali.

AVVERTENZE:

- Non utilizzare se la siringa, il flacone o la confezione sembrano danneggiate.
- Prodotto sterile monouso. Non riutilizzare.
- Selezionare le microsfere Bead Block in modo che la grandezza o la quantità siano adeguate alla patologia da trattare.
- L'embolizzazione con le microsfere Bead Block dovrebbe essere effettuata soltanto da medici che hanno ricevuto una preparazione adeguata agli interventi di occlusione nella regione da embolizzare

AVVERTENZA:
La legge federale USA limita la vendita di questo dispositivo ai soli medici o su loro ordine.

EVENTUALI COMPLICAZIONI:

1. Riflusso indesiderato o passaggio delle microsfere Bead Block nelle arterie normali adiacenti alla lesione bersaglio o attraverso la lesione in altre arterie o letti arteriosi, quali l'arteria carotide interna, la circolazione polmonare o coronarica.
2. Embolizzazione polmonare.
3. Ischemia in un punto poco auspicabile.
4. Saturazione del letto capillare e danno tissutale.
5. Attacco ischemico o infarto ischemico.
6. Rottura di un vaso o di una lesione e emorragia.
7. Carenze neurologiche compresa la paralisi dei nervi craniali.
8. Vasospasmo.
9. Decesso.
10. Ricanalizzazione.
11. Reazioni a corpi estranei che necessitano l'intervento medico.
12. Infezione che necessita l'intervento medico.
13. Formazione di coaguli alla punta del catetere con susseguente dislocazione.

CONSERVAZIONE E MAGAZZINAGGIO:

- Le microsfere Bead Block devono essere conservate nella confezione originale in luogo fresco, asciutto ed al riparo dalla luce.
- Utilizzare entro la data indicata sull'etichetta della siringa o del flacone.
- Evitare il congelamento.

ISTRUZIONI PER L'USO:

- Valutare attentamente il reticolo vascolare associato alla lesione utilizzando una definizione di immagine ad alta risoluzione prima di iniziare il procedimento di embolizzazione.
- Le microsfere Bead Block sono disponibili in molti ordini di grandezza. Occorre scegliere con cura la grandezza esatta delle microsfere Bead Block che meglio si adatta alla patologia (cioè bersaglio vascolare/grandezza del vaso) per produrre l'esito clinico desiderato.
- Per embolizzare le malformazioni arterovenose, scegliere una grandezza di particella in grado di occludere il nido senza passare attraverso la malformazione arterovenosa.

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- Bead-Block-Mikropartikeln sind in einigen Großen erhältlich. Auf die Wahl der richtigen Größe der Bead-Block-Mikropartikeln ist zu achten; diese soll sich nach der Art der vorliegenden Pathologie richten (z. B. Zielgefäße: Gefäßgröße) und geeignet sein, das gewunschte klinische Ziel zu erreichen.
- Bei der Embolisation arteriovenöser Fehlbildungen ist eine Partikelgroße zu wählen, welche den Nidus obliteriert, jedoch die AVM nicht passieren kann.
- Die gewählte Weite des Abgabekatheters hat sich nach dem Zielgefäßlumen zu richten. Bead-Block-Mikropartikeln konnen eine zeitweise Komprimierung von 20% bis 30% dulden, was die Passage durch den Katheter erleichtert.
- Der Abgabekatheter ist in das Zielgefäß entsprechend den Standardtechniken einzufuhren. Die Katheterspitze ist möglichst nahe an die Behandlungsstelle zu führen, um unbeabsichtigte Embolisierung normaler Gefäße zu vermeiden.
- Die Bead-Block-Mikropartikeln sind nicht strahlendicht. Es wird empfohlen, die Embolisation fluoroskopisch, mittels Zugabe einer geeigneten Menge von Kontrastmittel zur physiologischen Suspensionsflussigkeit, zu uberwachen.
- Bead-Block-Mikropartikeln einspritzen:

Aus der vorgefüllten Spritze:

o 5 ml Kontrastmittel direkt in die Spritze aspirieren um eine ungefähr 50 %ige Mischung mit der physiologischen Kochsalzlösung zu erhalten. Die Luft aus der Spritze entfernen. Um eine gleichmäßig verteilte Suspension des Bead-Block-Mikropartikel/Kontrastmittel-gemisches zu erhalten, ist die Spritze einige Male sanft umzukippen. Die 20 ml Spritze mit einem der Luer-Ansätze des Dreiwegehahnes verbinden. Falls erwunscht, kann ein Katheter an den verbleibenden Hahnausgang angehängt werden. Einige Minuten lang warten, bis die Bead-Block-Mikropartikeln richtig suspendiert sind. Den Bead-Block-Mikropartikel/Kontrastmittelgemisch langsam und vorsichtig in die Injektionsspritze aspirieren, um Luft-beimengung zu vermeiden. Alles Luft aus dem System vor der Injizierung entfernen. Die Bead-Block-Mikropartikel/ Kontrastmittel-lösung durch langsame, pulsierende Schube unter fluoroskopischer Sicht aus der Spritze injizieren und die Kontrastströmung beobachten. Wenn kein Effekt auf die Stromungsgeschwindigkeit auftritt, den Injektionsvorgang mit zusätzlicher Bead-Block-Mikropartikel/Kontrastmittellösung wiederholen oder Bead-Block-Mikropartikeln mit einem großeren Durchmesser wählen. Falls die Bead-Block-Mikropartikel/ Kontrastmittellosng der Resuspendierung bedarf, ist die 20 ml Spritze einige Male sanft umzukippen. Der Endpunkt der Embolisation soll konservativ beurteilt werden.

Aus dem Fläschchen

o Nach Schütteln des Fläschchens mit den Bead-Block-Mikropartikeln, diese mit einem Kontrastmittel direkt im Fläschchen oder in einem Metall- bzw. rostfreiem Stahlbehälter verdunnen. Es muss darauf geachtet werden, dass eine hinreichende Suspension der Mikropartikeln im Kontrastmittel zustande kommt, um während der Injektion eine gleichmäßige Partikelverteilung zu gewährleisten. Die Bead-Block-Mikropartikeln in eine Spritze mittels einer Injektionsnadel zumindest der Große 19-gauge (1.07 mm) ziehen. Die Bead-Block-Mikropartikeln langsam in den Katheter unter fluoroskopischer Sicht injizieren und die Kontrastströmung beobachten. Wenn kein Effekt auf die Strömungsgeschwindigkeit auftritt, Bead-Block-Mikropartikeln mit einem größeren Durchmesser wählen und den Injektionsvorgang wiederholen. Der Endpunkt der Embolisation soll konservativ beurteilt werden.

- Nach beendeter Behandlung den Katheter unter Ausubung sanften Sogs entfernen, um die noch immer im Lumen enthaltenen Bead-Block-Mikropartikeln nicht frei zu geben.
- Nicht verwendete offene Bead-Block-Mikropartikeln in der vorgefüllten Spritze bzw. Fläschchen entsorgen.

PACKUNGSETIKETT:

REF	= Katalog-Nummer		= Achtung: Gebrauchsanweisung
LOT	= Chargenbezeichnung	STERILE	= Dampfsterilisiert
	= Nicht wieder verwenden		= Zu gebrauchen bis

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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die Bead-Block-Mikropartikeln aufzunehmen;

11. Vaskulärer Widerstand peripher zu den versorgenden Arterien, welcher das Gelangen der Bead-Block-Mikropartikeln zur Läsion verhindert.
12. Für folgende Applikationen dürfen Bead-Block-Partikeln nicht verwendet werden:
    i. Embolisation arteriovenöser Shunts von großem Durchmesser (d. h. wenn das Blut nicht den Übergang Arterie-Kapillarbett-Vene passiert, sondern direkt von der Arterie in die Vene fließt);
    ii. Bei pulmonalen arteriellen Gefäßen;
    iii. Bei jeder Art der Blutversorgung, wo die Anwendung vom Bead Block-Embolisationsmittel den direkten Eintritt in die Arteria carotis interna bzw. in die oben erwähnten Gefäße bewirken kann.

WARNHINWEISE: Studien haben bewiesen, dass Bead-Block-Mikropartikeln keine Aggregate bilden und daher tiefer in die Vaskulatur als vergleichbare PVA-Partikeln penetrieren. Man beachte, dass Bead-Block-Embolisationsmittel größeren Durchmessers zu wählen ist, wenn es darum geht, arteriovenöse Fehlbildungen mit großen Shunts zu embolisieren, um das Gelangen der Mikropartikeln in den pulmonalen bzw. koronaren Kreislauf zu vermeiden.

Die Farbe der Bead-Block-Mikropartikeln kann durch die Haut sichtbar sein falls sie in Arterien, welche oberflächlich gelegene Gewebe versorgen, injiziert wurden.

VORSICHT:

- Nicht zu verwenden wenn Spritze, Fläschchen oder Packung beschädigt zu sein scheint.
- Steriles Einmalprodukt. Nicht für Wieder-verwendung.
- Die Größe und Menge der Bead-Block-Mikropartikeln nach der zu behandelnden Pathologie wählen.
- Die Embolisation mittels Bead-Block-Mikropartikeln ist ausschließlich Ärzten mit einer entsprechenden Ausbildung in invasiver Okklusion der betreffenden zu embolisierenden Region vorbehalten.

VORSICHT:
Der Verkauf dieses Produktes ist nach dem föderalen Gesetz der USA nur an Ärzte bzw. laut ärztlicher Verordnung zugelassen.

POTENZIELLE KOMPLIKATIONEN:

1. Unerwünschter Reflux oder Eintritt der Bead-Block-Partikeln in normale, der angezielten Läsion benachbarte Gefäße bzw. über die Läsion in andere Arterien oder Arterienbetten, wie etwa Arteria carotis interna oder Pulmonal- und Koronarkreislauf;
2. Pulmonale Embolisation;
3. Ischämie an unerwünschten Stellen;
4. Kapillarbettsättigung und Gewebsschaden;
5. ischämischer Gehirnschlag oder Myokardinfarkt;
6. Gefäß- oder Läsionsruptur mit Hämorrhagie;
7. Neurologische Ausfälle, einschließlich Hirnnervenparesen;
8. Vasospasmus;
9. Exitus;
10. Rekanalisierung;
11. Fremdkörperreaktionen, die eine ärztliche Intervention erfordern;
12. Infektionen, die eine ärztliche Intervention erfordern;
13. Thrombusbildung an der Katheterspitze mit nachfolgender Ablösung.

KONSERVIERUNG UND AUFBEWAHRUNG:

- Bead-Block-Mikropartikeln müssen an einem kühlen und trockenen Platz in der Originalverpackung im Dunkeln aufbewahrt werden.
- Nicht nach dem an der Spritze bzw. am Fläschchen angegebenen Verfallsdatum gebrauchen.
- Nicht einfrieren.

GEBRAUCHSANWEISUNG:

- Das mit der Läsion zusammenhängende Gefäßnetz muss vor Beginn des Embolisationsverfahrens durch darstellende Radiographie mit hoher Auflösung gründlich untersucht werden.

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- Scegliere un catetere di somministrazione in base alla grandezza del vaso bersaglio. Le microsfere Bead Block possono tollerare una compressione temporanea da 20% a 30% per facilitarne il passaggio attraverso il catetere di somministrazione.
- Introdurre il catetere di somministrazione nel vaso bersaglio secondo le tecniche standard. Posizionare la punta del catetere quanto più vicino possibile alla posizione di trattamento per impedire l'occlusione involontaria di vasi normali.
- Le microsfere Bead Block non sono radio-opache. Si raccomanda di monitorare l'embolizzazione con visualizzazione fluoroscopica aggiungendo la quantità desiderata di mezzo di contrasto alla soluzione fisiologica di sospensione.
- Per somministrare le microsfere Bead Block:-

Siringa pre-riempita:

o Aspirare direttamente 5 ml di mezzo di contrasto nella siringa in modo da avere una miscela di circa 50% mezzo di contrasto e circa 50% soluzione salina. Rimuovere tutta l'aria dalla siringa. Per sospendere in modo omogeneo le microsfere Bead Block e la soluzione del mezzo di contrasto, capovolgere delicatamente varie volte la siringa da 20 ml. Collegare la siringa da 20 ml all'attacco luer-lock del rubinetto di chiusura a tre. Se opportuno è possibile collegare un catetere di somministrazione all'attacco rimanente del rubinetto di chiusura. Aspettare alcuni minuti per permettere alle microsfere Bead Block di essere completamente in sospensione. Aspirare lentamente e delicatamente la soluzione di microsfere Bead Block/contrasto nella siringa di iniezione per minimizzare l'eventuale introduzione di aria nel sistema. Eliminare tutta l'aria dal sistema prima dell'iniezione. Iniettare la soluzione di microsfere Bead Block/contrasto dalla siringa di iniezione con azione pulsatile lenta sempre visualizzando al fluoroscopio e osservando il tempo di scorrimento del mezzo di contrasto. Se non si osserva alcun effetto sul tempo di scorrimento, ripetere il processo di somministrazione con ulteriori iniezioni di soluzione di microsfere Bead Block/contrasto oppure prendere in considerazione l'utilizzo di microsfere Bead Block più grandi. Se la soluzione di microsfere Bead Block/contrasto richiede un'ulteriore sospensione, capovolgere delicatamente varie volte la siringa da 20 ml. Esercitare molta cautela nel determinare il punto estremo di embolizzazione.

Flacone:

o Dopo aver agitato la boccetta contenente le microsfere Bead Block, diluire le microsfere Bead Block con il mezzo di contrasto in una coppetta di metallo/acciaio inossidabile oppure direttamente nella siringa. Assicurarsi che vi sia una buona sospensione delle particelle nel mezzo di contrasto per migliorare la distribuzione delle particelle durante l'iniezione. Aspirare le microsfere Bead Block in un ago di siringa calibro > 19 (1.07 mm). Iniettare lentamente le microsfere Bead Block nel catetere di somministrazione visualizzando al fluoroscopio e osservando il tempo di scorrimento del mezzo di contrasto. Se non si osserva alcun effetto sul tempo di scorrimento, scegliere particelle più grandi e ripetere il processo di somministrazione. Esercitare molta cautela nel determinare il punto estremo di embolizzazione.

- Una volta completato il trattamento, rimuovere il catetere mantenendo sempre una lieve aspirazione in modo da non staccare le microsfere Bead Block che sono ancora nel lume del catetere.
- Le microsfere Bead Block inutilizzate rimanenti nella siringa o nel flacone pre-riempito aperto vanno scartate.

ETICHETTA DELLA CONFEZIONE:

REF	= Numero di catalogo		= Attenzione vedi Istruzioni Per l'Uso
LOT	= Numero di Lotto	STERILE	= Sterilizzato a vapore
	= Non riutilizzare		= Utilizzare entro

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Nederlands

STERIEL UITSLUITEND VOOR EENMALIG GEBRUIK PYROGEENVRIJ
Gesterilisseerd met stoom
Niet gebruiken als de verpakking geopend of beschadigd is

BESCHRIJVING:

Bead Block bestaat uit een serie microsferen van hydrogel die biologisch compatibel, hydrofiel, niet-resorbeerbaar en nauwkeurig gekalibreerd zijn. Bead Block microsferen worden vervaardigd uit polyvinylalcohol en zijn verkrijgbaar in de volgende grootten:

Grootte	Kleur etiket
100 – 300 µm	geel
300 – 500 µm	blauw
500 – 700 µm	rood
700 – 900 µm	groen
900 – 1200 µm	paars

PRESENTATIE:

Voorgevulde spuit

- Spuit van 20 ml.
- De spuit wordt geleverd in een voorgevormde, steriele, afgesloten Tyvek®, "peel-away" schaal met een etiket in de kleur die het specifieke groottebereik aangeeft.
- Elke spuit bevat ongeveer 1 ml of 2 ml Bead Block microsferen in een pyrogeenvrije, steriele, gebufferde fysiologische zoutoplossing. Het totale volume van de fysiologische zoutoplossing en Bead Block microsferen bedraagt 5 ml.
- Elke spuit dient uitsluitend voor gebruik bij één patiënt. Niet opnieuw steriliseren. Werp eventueel resterend materiaal weg.

Injectieflacon

- Glazen injectieflacon van 10 ml.
- De stop is afgesloten met een aluminium dop voorzien van een gekleurde dop.
- Elke injectieflacon bevat ongeveer 1 ml of 2 ml Bead Block microsferen in een pyrogeenvrije, steriele, gebufferde fysiologische zoutoplossing. Het totale volume van de fysiologische zoutoplossing en Bead Block microsferen bedraagt 8ml.
- Elke injectieflacon dient uitsluitend voor gebruik bij één patiënt. Niet opnieuw steriliseren. Werp eventueel resterend materiaal weg.

INDICATIES:

Bead Block microsferen dienen voor de embolisatie van hypervasculaire tumoren en arterioveneuze malformaties (AVM's).

KLINISCHE TOEPASSINGEN:

De wetenschappelijke literatuur biedt uitgebreide documentatie over embolisatietechnieken met behulp van een breed scala van kunstmatige stoffen in zowel het zenuwstelsel als het perifere vaatstelsel, waaronder het hoofd, de hals, het ruggenmerg, de lever, het urogenitale stelsel, de uterus, het gastro-intestinale stelsel, de ledematen en longen. Aan het eind van deze gebruiksaanwijzing vindt u een representatieve literatuuropgave.

CONTRA-INDICATIES:

1. Patiënten die intolerant zijn voor occlusie-ingrepen.
2. Een vaatanatomie of bloedstroom die geen plaatsing van een katheter of embolisatie-injectie toestaat.
3. Aanwezigheid van of een zeer groot risico van een vasospasme.
4. Aanwezigheid of het waarschijnlijke optreden van een bloeding.
5. Aanwezigheid van een ernstige atheromateuze aandoening.
6. Aanwezigheid van voedende arteriën met een kleinere diameter dan die van de distale takken waaraan ze ontspruiten.
7. Aanwezigheid van een open anastomose of shunt, extra-naar-intracraniaal.
8. Aanwezigheid van collaterale vaattrajecten, waardoor gedurende embolisatie een potentieel gevaar optreedt voor normale gebieden.
9. Aanwezigheid van eindarteriën die rechtstreeks naar craniale zenuwen lopen.
10. Aanwezigheid van arteriën die de laesie voeden maar waarvan de diameter niet groot genoeg is voor de Bead Block microsferen.
11. Vaatweerstand perifeer van de voedende arteriën, zodat passage van Bead

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Deutsch

STERIL FÜR EINMALIGEN GEBRAUCH · NICHT PYROGEN
Dampfsterilisiert
Nicht zu gebrauchen falls Packung geöffnet oder beschadigt

BESCHREIBUNG:

Bead-Block besteht aus einer Anzahl von Hydrogel Mikropartikeln, die gewebevertraglich, hydrophil, nicht reabsorbierbar und prazise kalibriert sind. Bead Block Mikropartikeln werden vom Polyvinyl Alkohol hergestellt und sind in den folgenden Großen erhältlich:

Größe	Etikett-Farbe
100 – 300 µm	Gelb
300 – 500 µm	Blau
500 – 700 µm	Rot
700 – 900 µm	Grün
900 – 1200 µm	Lila

APPLIKATIONSFORMEN:

Spritze

- 20 ml Spritze Die Spritze befindet sich in einer sterilen, versiegelten, praformierten, mit Abreißfolie versehenen Tyvek®, Platte mit einem farbigen Etikett, welches den jeweiligen Größenbereich bezeichnet.
- Jede Spritze beinhaltet ungefähr 1 bzw. 2 ml Bead-Block-Mikropartikeln in nicht pyrogener, steriler, gepufferter physiologischer Kochsalzlosung. Das Gesamtvolumen der physiologischen Kochsalzlösung samt Bead-Block Mikropartikeln beträgt 5 ml.
- Jede Spritze ist fur einen einzigen Patienten bestimmt. Nicht wieder sterilisieren. Nicht verwendetes Material ist zu verwerfen.

Fläschchen

- Glasfläschchen mit 10 ml Inhalt.
- Der Stöpsel ist mit einer Aluminiumkappe versehen, welche unterschiedlich gefärbte Bedeckung besitzt.
- Jedes Fläschchen beinhaltet ungefähr 1 bzw. 2 ml Bead-Block-Mikropartikeln in nicht pyrogener, steriler, gepufferter physiologischer Kochsalz-losung. Das Gesamtvolumen der physiologischen Kochsalzlosung samt Bead-Block-Mikropartikeln beträgt 8 ml.
- Jedes Fläschchen ist für einen einzigen Patienten bestimmt. Nicht wieder sterilisieren. Nicht verwendetes Material ist zu verwerfen.

INDIKATIONEN:

Bead-Block Mikropartikeln sind für die Embolisation hypervaskuläre Tumore und arteriovenöser Missbildungen (AVM) bestimmt.

KLINISCHE ANWENDUNGEN:

Verschiedene Embolisationsverfahren unter Anwendung einer Vielfalt künstlicher Mittel wurden ausfuhrlich in der wissenschaftlichen Literatur beschrieben, darunter in neurologischen und peripheren Gefaßsystemen und in mehrfachen Lokalisationen, wie Kopf, Hals, Ruckenmark, Leber, Magen-Darmtrakt, Gebarmutter, Harntrakt, Extremitäten und Lungen. Eine bibliographische Auswahl wird am Ende der vorliegenden Gebrauchsanweisung angeführt.

GEGENANZEIGEN:

1. Patienten mit Intoleranz für Okklusionsverfahren;
2. Vaskuläre Anatomie oder Blutströmung, die keine Verwendung von Kathetern und keine embolisierende Injektion erlaubt;
3. Vorhandensein bzw. Wahrscheinlichkeit des Auftretens von Vasospasmen;
4. Vorhandensein bzw. Wahrscheinlichkeit des Auftretens von Blutung;
5. Vorliegen einer schweren atheromatotischen Erkrankung;
6. Vorhandensein von zuführenden Arterien, die kleiner sind als die distalen Zweige, denen sie entstammen;
7. Vorliegen offener extra- zu intrakranialen Anastomosen bzw. Shunts;
8. Vorhandensein von kollateralen Gefaß-verbindungen, wodurch normale Gebiete durch die Embolisation potenziell gefährdet wären;
9. Vorliegen von Endarterien, welche direkt zu Hirnnerven fuhren;
10. Vorliegen von läsionversorgenden Arterien, welche nicht weit genug sind, um

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soigneusement la taille des microsphères Bead Block en fonction de la pathologie (à savoir, cible vasculaire/dimension des vaisseaux) et du résultat clinique souhaité.
- Lors de l'embolisation de malformations artérioveineuses, choisir une dimension de particule qui occlura le nid sans qu'il soit nécessaire de transiter par les malformations artérioveineuses.
- Choisir un cathéter de délivrance en fonction de la taille du vaisseau cible. Les microsphères Bead Block peuvent supporter une compression temporaire de 20 à 30% afin de faciliter le passage par le cathéter de délivrance.
- Introduire le cathéter de délivrance dans le vaisseau cible selon des techniques standard. Positionner l'extrémité du cathéter aussi près que possible du site du traitement afin d'éviter toute occlusion accidentelle des vaisseaux normaux.
- Les microsphères Bead Block ne sont pas radio-opaques. Il est recommandé de surveiller l'embolisation par visualisation radioscopique en ajoutant la quantité souhaitée de substance de contraste à la suspension physiologique.
- Délivrance de microsphères Bead Block.

Seringue préremplie :

o Aspirer directement 5 ml du milieu de contraste dans la seringue pour obtenir environ 50% de contraste et d'environ 50% d'un mélange de solution salée. Retirer tout l'air contenu dans la seringue. Pour suspendre de façon égale la solution microsphères Bead Block/produit de contraste, renverser doucement plusieurs fois la seringue de 20 ml. Fixer la seringue de 20 ml à un orifice du robinet d'arrêt à 3 voies Luer Lock. Il est possible, si besoin est, de relier un cathéter de délivrance au port restant du robinet d'arrêt. Patienter quelques minutes pour laisser les microsphères Bead Block se suspendre correctement. Aspirer lentement et doucement la solution microsphères Bead Block/produit de contraste dans la seringue d'injection pour réduire toute possibilité d'introduction d'air dans le système. Purger tout l'air contenu dans le système avant l'injection. Injecter la solution microsphères Bead Block/produit de contraste contenue dans la seringue d'injection sous visualisation radioscopique par une action pulsatile lente, tout en observant le débit du produit de contraste. En l'absence d'effet sur le débit, répéter le processus de délivrance avec des injections supplémentaires de solution microsphères Bead Block/produit de contraste ou de microsphères Bead Block de plus grande taille. Si la solution microsphères Bead Block/produit de contraste doit être resuspendue, renverser doucement la seringue de 20 ml plusieurs fois. Procéder prudemment pour déterminer le critère d'évaluation de l'embolisation.

Fiole :

o Après avoir secoué le flacon contenant les microsphères Bead Block, diluer les microsphères Bead Block avec le milieu de contraste soit dans une tasse métallique/en acier inoxydable, soit directement dans la seringue. Veiller à suspendre correctement les particules dans le milieu de contraste pour améliorer leur distribution lors de l'injection. Aspirer les microsphères Bead Block dans une aiguille à injection de taille supérieure ou égale à 19 G (1,07 mm). Injecter lentement les microsphères Bead Block dans le cathéter de délivrance sous visualisation radioscopique tout en observant le débit du produit de contraste. En l'absence d'effet sur le débit, choisir une taille de particule supérieure et répéter le processus de délivrance. Procéder prudemment pour déterminer le critère d'évaluation de l'embolisation.

- Une fois le traitement terminé, retirer le cathéter tout en maintenant une légère aspiration afin de ne pas déloger les microsphères Bead Block qui se trouvent encore dans la lumière du cathéter.
- Jeter toutes les microsphères Bead Block ouvertes et inutilisées dans la seringue préremplie ou dans la fiole.

ETIQUETTE DE L'EMBALLAGE :

REF	– Numéro de référence		= Attention : consulter le mode
LOT	– Numéro de lot	STERILE	= Stérilisé à la vapeur
	– Ne pas réutiliser		= Date de péremption

Block microsferen naar de laesie onmogelijk is.

12. Bead Block microsferen niet gebruiken voor de volgende toepassingen:
    i. Embolisatie van arterioveneuze shunts met een grote diameter (d.w.z. waar het bloed niet via de arteriële/capillaire/veneuze overgang loopt maar rechtstreeks van de arterie naar de vene.
    ii. Het pulmonale arteriële vaatstelsel.
    iii. Elk vaatstelsel waarin de Bead Block microsferen rechtstreeks naar de arteria carotis interna of de bovengenoemde vaten kunnen lopen.

WAARSCHUWING: Onderzoek heeft uitgewezen dat Bead Block microsferen geen aggregaten vormen en daarom dieper in het vaatstelsel doordringen dan PVA-deeltjes van vergelijkbare grootte. Vergeet niet grotere Bead Block microsferen te kiezen voor embolisatie van arterioveneuze malformaties met grote shunts, om te voorkomen dat de microsferen in de pulmonale of coronaire circulatie terechtkomen.

De kleur van de Bead Block microsferen kan zichtbaar zijn door de huid, als ze in arteriën worden geïnjecteerd die oppervlakteweefsel voeden.

AANDACHTSPUNTEN:

- Niet gebruiken als de spuit, injectieflacon of verpakking beschadigd lijken.
- Steriel en voor eenmalig gebruik. Niet opnieuw gebruiken.
- Kies de grootte en hoeveelheid Bead Block microsferen die past bij de te behandelen pathologie.
- Embolisatie met behulp van Bead Block microsferen mag uitsluitend worden uitgevoerd door artsen die een passende opleiding hebben genoten in interventionele occlusie in het gebied waar embolisatie gewenst is.

LET OP
Krachtens federale wetgeving (VS) mag dit instrument uitsluitend door of op voorschrift van een arts worden verkocht.

MOGELIJKE COMPLICATIES:

1. Ongewenste reflux of passage van Bead Block microsferen naar normale arteriën die naast de doellaesie liggen of via de laesie naar een andere arterie of arterieel bed, bijvoorbeeld de arteria carotis interna, de pulmonale of coronaire circulatie.
2. Pulmonale embolisatie.
3. Ischemie op een ongewenste plaats.
4. Verzadiging van het capillaire bed en weefselbeschadiging.
5. Ischemisch hersenинfarct of ischemisch infarct.
6. Ruptuur van het bloedvat of de laesie, en bloedingen.
7. Neurologische defecten, onder meer verlamming van de nervi craniales.
8. Vasospasme.
9. Overlijden.
10. Rekanalisatie.
11. Reacties tegen lichaamsvreemde stoffen die medische interventie noodzakelijk maken.
12. Een infectie die medische interventie noodzakelijk maakt.
13. Klontering aan de tip van de katheter en daaropvolgend loslaten van het aggregaat.

CONSERVEREN EN BEWAREN:

- Bead Block microsferen moeten in de oorspronkelijke verpakking en op een koele, droge en donkere plaats worden bewaard.
- Gebruiken vóór de uiterste gebruiksdatum aangegeven op het etiket van de spuit/injectieflacon.
- Niet invriezen.

GEBRUIKSAANWIJZING:

- Beoordeel met behulp van beeldvorming met een hoge resolutie zorgvuldig het vaatnetwerk samenhangend met de laesie, alvorens met de embolisatieprocedure te beginnen.
- Bead Block microsferen zijn verkrijgbaar in diverse grootten. Kies zorgvuldig het grootte bereik van de Bead Block microsferen dat het best aansluit op de pathologie (d.w.z. doelvat/vaatgrootte) en dat het gewenste klinische resultaat zal opleveren.

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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- Kies voor de embolisatie van arterioveneuze malformaties een deeltjesgrootte die de nidus zal occluderen zonder de AVM te passeren.
- Kies een toevoerkatheter op basis van de diameter van het doelvat. Bead Block microsferen kunnen tijdelijk 20% tot 30% worden samengedrukt om passage door de toevoerkatheter te vergemakkelijken.
- Breng de toevoerkatheter in het doelvat volgens de gangbare technieken. Positioneer de kathetertip zo dicht mogelijk bij de behandelplaats ter voorkoming van onverhoedse occlusie van normale vaten.
- Bead Block microsferen zijn niet radiopaak. Het verdient aanbeveling de embolisatie onder röntgendoorlichting te volgen door de gewenste hoeveelheid contrastmiddel aan de fysiologische suspensievloeistof toe te voegen.
- Toevoeren van de Bead Block microsferen.

Voorgevulde spuit:

o Zuig rechtstreeks 5 ml contrastmiddel op in de spuit, zodat u een mengsel hebt van ongeveer 50% contrastmiddel en ongeveer 50% fysiologische zoutoplossing. Verwijder alle lucht uit de spuit. Suspendeer de Bead Block microsferen/het contrastmiddel gelijkmatig door de spuit van 20 ml verscheidene keren ondersteboven te houden. Bevestig de spuit van 20 ml aan een van de Luer-lockaansluitingen van de driewegkraan; indien gewenst, kan er een toevoerkatheter op de resterende aansluiting van de driewegkraan worden bevestigd. Wacht een aantal minuten, zodat de Bead Block microsferen goed suspenderen. Zuig het mengsel van Bead Block microsferen/contrastmiddel langzaam en voorzichtig in de spuit om de kans op binnendringen van lucht tot een minimum te beperken. Verdrijf alle lucht uit het systeem alvorens te injecteren. Injecteer de Bead Block microsferen/contrastmiddel onder röntgendoorlichting uit de spuit door middel van een langzame pulserende beweging en let daarbij op de stroomsnelheid van het contrastmiddel. Als er geen effect is op de stroomsnelheid, herhaal de toelevering dan met aanvullende injecties Bead Block microsferen/contrastmiddel of overweeg grotere Bead Block microsferen. Als de Bead Block microsferen/contrastmiddel moeten worden geresuspendeerd, draai dan de spuit van 20 ml verscheidene keren voorzichtig ondersteboven. Ga behoudend te werk bij bepaling van het eindpunt van de embolisatie.

Injectieflacon:

o Schud de flacon met de Bead Block microsferen en verdun de Bead Block microsferen met contrastmiddel in een metalen / roestvrijstalen maatbekertje of rechtstreeks in de spuit. Zorg dat de deeltjes goed in het contrastmiddel worden gesuspendeerd, zodat er tijdens de injectie sprake is van een goede microsferenverdeling. Zuig de Bead Block microsferen op via een injectienaald groter of gelijk aan 19G (1.07 mm). Injecteer de Bead Block microsferen langzaam onder röntgendoorlichting in de toevoerkatheter en let op de stroomsnelheid van het contrastmiddel. Als er geen effect is op de stroomsnelheid, kies dan een grotere deeltjesgrootte en herhaal de toelevering. Ga behoudend te werk bij bepaling van het eindpunt van de embolisatie.

- Na voltooiing van de behandeling verwijdert u de katheter terwijl u een lichte zuigkracht blijft uitoefenen, zodat de nog in het katheterlumen aanwezige Bead Block microsferen niet loskomen.
- Resterende, ongebruikte Bead Block microsferen die nog in de voorgevulde spuit of injectieflacon zitten, wegwerpen.

ETIKETTERING VERPAKKING:

REF	= Catalogusnummer		= Let op: zie de gebruiksaanwijzing
LOT	= Partijnummer/ Chargenummer	STERILE	= Met stoom gesteriliseerd
	= Niet opnieuw gebruiken		= Uiterste gebruiksdatum

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11. Resistance vasculaire périphérique aux artères nourricières excluant le passage des microsphères Bead Block dans la lésion.
12. Ne pas utiliser les microsphères Bead Block dans les applications suivantes :
    i. Embolisation de larges shunts artérioveineux (lorsque le sang ne transite pas par les artères/capillaires/veines, mais passe directement de l'artère à la veine).
    ii. Les réseaux artériels pulmonaire.
    iii. Tout système vasculaire dans lequel l'agent embolique Bead Block pourrait passer directement dans l'artère carotide interne ou dans les vaisseaux susmentionnés.

MISE EN GARDE : Des études ont montré que les microsphères Bead Block ne forment pas d'agrégats et qu'ils pénètrent donc plus profondément dans le système vasculaire comme comparé aux particules APV de taille similaire. Choisir avec circonspection un agent embolique Bead Block de taille supérieure lors de l'embolisation de malformations artérioveineuses avec de larges shunts pour éviter que les microsphères ne passent dans la circulation pulmonaire ou coronarienne.

La couleur des microsphères Bead Block serait probablement visible à travers la peau si elles sont injectées dans les artères alimentant les tissus superficiels.

ATTENTION :

- Ne pas utiliser si la seringue, la fiole ou l'emballage semblent endommagés.
- Produit stérile à usage unique. Ne pas réutiliser.
- Sélectionner la taille et la quantité des microsphères Bead Block en fonction de la pathologie à traiter.
- Seuls des médecins formés aux procédures d'occlusion interventionnelles dans la région à emboliser peuvent effectuer une embolisation avec les microsphères Bead Block.

ATTENTION :
En vue des lois fédérales des Etats-Unis, ce dispositif ne peut être vendu que par un médecin ou sur sa commande .

COMPLICATIONS POSSIBLES :

1. Reflux indésirable ou passage des microsphères Bead Block dans des artères normales adjacentes à la lésion ciblée ou dans d'autres artères ou lits artériels (par exemple, artère carotide interne, circulations pulmonaires ou coronariennes) en transitant par la lésion.
2. Embolisation pulmonaire.
3. Ischémie sur un site indésirable.
4. Saturation des lits capillaires et lésions tissulaires.
5. Infarctus cérébral ou ischémique.
6. Rupture des vaisseaux ou de la lésion et hémorragie.
7. Déficits neurologiques, notamment une paralysie des nerfs crâniens.
8. Vasospasme.
9. Décès.
10. Recanalisation.
11. Réactions de corps étrangers nécessitant une intervention médicale.
12. Infection nécessitant une intervention médicale.
13. Formation de caillots à l'extrémité du cathéter et délogement consécutif.

CONSERVATION ET STOCKAGE :

- Les microsphères Bead Block doivent être stockées dans un endroit frais, sec et sombre dans leur emballage d'origine.
- A utiliser avant la date de péremption indiquée sur l'étiquette apposée sur la seringue et la fiole.
- Ne pas congeler.

MODE D'EMPLOI :

- Evaluer soigneusement le réseau vasculaire associé à la lésion à l'aide d'un imageur haute résolution avant de commencer la procédure d'embolisation.
- Les microsphères Bead Block sont disponibles dans une plage de taille. Choisir

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Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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Français

STERILE - A USAGE UNIQUE - APYROGENE
Stérilisé à la vapeur
Ne pas utiliser si l'emballage est ouvert ou endommagé

DESCRIPTION :

Bead Block consiste en une gamme de microsphères à hydrogel biocompatibles, hydrophiles, non résorbables et étalonnées avec précision. Les microsphères Bead Block sont produites à partir d'alcool de polyvinyle et sont disponibles dans les plages de taille suivantes :

Taille	Couleur étiquette
100 – 300 µm	Jaune
300 – 500 µm	Bleu
500 – 700 µm	Rouge
700 – 900 µm	Vert
900 - 1200 µm	Violet

PRESENTATION :

Seringue

- Seringue de 20 ml.
- La seringue est présentée dans un conditionnement dit pelable hermétique stérile Tyvek®, comportant une étiquette colorée indiquant la plage de taille correspondante.
- Chaque seringue contient environ 1 ou 2 ml de microsphères Bead Block dans une solution-tampon physiologique salée apyrogène, stérile. Le volume total de la solution salée et des microsphères Bead Block est de 5 ml.
- Chaque seringue est conçue pour un usage unique. Ne pas restériliser. Jeter tout matériel inutilisé.

Fiole

- Fiole en verre de 10 ml.
- Bouchon scellé par une capsule en aluminium coloré.
- Chaque fiole contient environ 1 à 2 ml de microsphères Bead Block dans une solution salée physiologique saline-tampon apyrogène, stérile et physiologique. Le volume total de la solution salée saline et des microsphères Bead Block atteintest de 8 ml.
- Chaque fiole est conçue pour un usage unique. Ne pas restériliser. Jeter tout matériel inutilisé.

INDICATIONS :

Les microsphères Bead Block sont destinées à l'embolisation des tumeurs hypervascularisées et des malformations artérioveineuses (MAV).

APPLICATIONS CLINIQUES :

La littérature scientifique fournit une documentation considérable massivement sur les procédures d'embolisation utilisant un vaste panel d'agents artificiels dans les systèmes neurologiques et vasculaires périphériques, notamment la tête, le cou, la colonne vertébrale, le foie, l'appareil génito-urinaire, l'utérus, le système gastro-intestinal, les membres et les poumons. Une bibliographie représentative est fournie après le mode d'emploi.

CONTRE-INDICATIONS :

1. Patients ne supportant pas les procédure d'occlusion.
2. Anatomie vasculaire ou flux sanguin excluant la mise en place d'un cathéter ou toute injection embolique.
3. Présence ou début probable de vasospasme.
4. Présence ou début probable d'hémorragie.
5. Présence de maladie athéromateuse sévère.
6. Présence d'artères nourricières de dimension inférieure aux branches distales dont elles émergent.
7. Présence d'anastomoses ou de shunts extra- ou intracrâniens manifestes.
8. Présence des voies collatérales collatéraux de vaisseau susceptibles de compromettre des zones normales lors de l'embolisation.
9. Présence d'artères finales menant directement aux nerfs crâniens.
10. Présence d'artères alimentant la lésion insuffisamment larges pour accepter les microsphères Bead Block.

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Dansk

STERIL - KUN TIL ENGANGSBRUG - IKKE-PYROGEN
Steriliseret med damp
Pakken bør ikke anvendes, hvis den er åbneten eller skadet

BESKRIVELSE:

Bead Block består af en serie hydrogele mikrokugler, der er biologisk kompatible, hydrofile, ikke-resorbérbare og nøjagtigt kalibrerede. Bead Block mikrokugler af fremstillet af polyvinylalkohol og kan fås i følgende størrelser:

Størrelse	Etiket-farve
100 – 300 µm	Gul
300 - 500 µm	Blå
500 – 700 µm	Rød
700 – 900 µm	Grøn
900 - 1200 µm	Lilla

UDFORMNING:

Sprøjte

- Sprøjte indeholdende 20 ml.
- Sprøjten leveres i en steril og forseglet Tyvek®, bakke med farvet etiket, der pilles tilbage for at angive den specifikke størrelsesorden.
- Hver sprøjte indeholder ca. 1 ml eller 2 ml Bead Block mikrokugler i en ikke-pyrogen, steril, fysiologisk bufferet saltvandsopløsning. Den totale mængde af saltvandsopløsning og Bead Block mikrokugler er 5 ml.
- Hver enkelt sprøjte må kun anvendes til en patient. Sprøjten må ikke gensteriliseres. Ikke anvendt materiale skal kasseres.

Hætteglas

- Hætteglas indeholdende 10 ml.
- Proppen er forseglet af en aluminiumshætte, og hætten er farvet.
- Hvert hætteglas indeholder ca. 1 ml eller 2 ml Bead Block mikrokugler i en ikke-pyrogen, steril, fysiologisk bufferet saltvandsopløsning. Den totale mængde saltvandsopløsning og Bead Block mikrokugler er 8ml.
- Hvert hætteglas må kun anvendes til én patient. Hætteglasset må ikke gensteriliseres. Ikke anvendt materiale skal kasseres.

INDIKATIONER:

Bead Block mikrokugler er beregnet til brug for embolisering af hypervaskulære tumorer og arteriovenøse misdannelser (AVM'er).

KLINISKE ANVENDELSESOMRÅDER:

Den videnskabelige litteratur giver omfattende dokumentation over emboliseringsprocedureme ved anvendelse af et større udvalg kunstige midler i både neurologiske og perifere vaskulære systemer, inklusive hoved, nakke, rygrad, lever, urinvejene, livmoderen, mave- og tarmsystemet, lemmer og lunger. Der er stillet en repræsentativ bibliografi til rådighed, som følger disse brugsanvisninger.

KONTRAINDIKATIONER:

1. Patienter, som er overfølsomme overfor okklusionsprocedurer.
2. Vaskulær anatomi eller blødcirkulation, der udelukker anbringelse af kateter eller emboli-injektion.
3. Tilstedeværelsen af, eller mulig indtrædelse af, vasospasme.
4. Tilstedeværelsen eller mulig indtrædelse af, blødninger.
5. Tilstedeværelsen af en alvorlig ateromatøs sygdom.
6. I tilfælde af, at de tilstrømmende pulsårer er mindre end de fjernere forgreninger, hvorfra de opstår.
7. Tilstedeværelsen af åbne ekstra-til-intrakranielle anastomoser eller shunts.
8. Tilstedeværelsen af de parallelle blodkars direkte gennemstrømning, som muligvis kan udsætte normale områder for fare under embolisering.
9. Tilstedeværelse af endepulsårer, der direkte leder til kranienerver.
10. Tilstedeværelse af pulsårer, der forsyner en læsion som ikke er stor nok til at acceptere Bead Block mikrokugler.
11. Vaskulær modstand, perifert for fødende pulsårer, som forhindrer indtrængen

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Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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af Bead Block mikrokugler i læsionen.

12. Bead Block mikrokugler må ikke anvendes til følgende applikationer:
    i. Embolisering af større mængder arterioevenøse shunts (f.eks. hvor blodet ikke passerer gennem arterie-/kapillær-/vene- overgangen, men direkte fra pulsåren til vene).
    ii. Det pulmonalt arterielle vaskulatur.
    iii. Eventuel vaskulatur, hvor brugen af Bead Block Embolisk middel kan passere direkte ind i den interne halspulsåre, eller de ovenfor beskrevne blodkar.

ADVARSEL: Undersøgelser har vist, at Bead Block mikrokugler ikke danner aggregater, hvilket resulterer i, at de trænger dybere ind i vaskulaturen sammenlignet medi PVA-partikler af lignende størrelse. Der skal nøje vælges en større størrelse af Bead Block Embolisk middel ved embolisering af arteriovenøse misdannelser med større shunts, for at hindre mikrokuglerne i at passere ind i det pulmonale- eller koronare kredsløb.

Bead Block mikrokuglernes farve skal være synlig gennem huden, hvis de sprøjtes ind i pulsårer, som føder overfladiske væv.

FORSIGTIGHEDSREGLER

- Må ikke anvendes, hvis sprøjten, hætteglasset eller emballagen er beskadiget.
- Et sterilt produkt til engangsbrug. Må ikke genbruges.
- Vælg den passende størrelse og mængde af Bead Block mikrokugler til den patologi, som skal behandles.
- Embolisering med Bead Block mikrokugler bør kun foretages af læger, som har modtaget passende uddannelse i interventionel okklusion det område, der skal emboliseres.

ADVARSEL:
Føderale (USA) lovgivninge begrænser salg af denne anordning efter en læges forskrifter.

MULIGE KOMPLIKATIONER:

1. Uønsket tilbagestrømning eller passering af Bead Block mikrokugler ind i normale pulsårer i umiddelbar nærhed af den læsion, der skal behandles, eller gennem læsionen i andre pulsårer eller arterieunderlag, som for eksempel den interne halspulsåre, pulmonale, eller koronare kredsløb.
2. Pulmonal embolisering.
3. Utilstrækkelig blodcirkulation på et uønsket sted.
4. Gennemtrængen af det kapillære underlag og vævskade.
5. Iskæmisk slagtilfælde eller iskæmisk infarkt.
6. Blodkar eller læsionssprængning og blødning.
7. Neurologiske mangler inklusive kranienerve- lammelse.
8. Vasospasme
9. Dødsfald.
10. Omkanalisering.
11. Kroppens reaktioner mod fremmedlegemer, der kræver medicinsk indgiben.
12. Infektioner, der kræver medicinsk indgriben.
13. Dannelse af koagler ved katetrets spids, der kan resultere i, at det flytter sig.

OPBEVARING:

- Bead Block mikrokugler bør opbevares på et tørt, køligt og mørkt sted og i den oprindelige emballering.
- Bør anvendes inden den dato, der er angivet på sprøjtens/hætteglassets etiket.
- Må ikke fryses.

BRUGSANVISNING:

- Inden emboliseringsproceduren begyndes, bør det vaskulære netværk, der er forbundet med læsionen, nøje evalueres; dette gøres ved hjælp af højopløsningsbilleder.
- Bead Block mikrokugles kan fås i et sene af størrelser. Den passende størrelse af Bead Block mikrokugler skal vælges nøje og i henhold til hvad der passer bedst til patologien (dvs. det vaskulære mål/blodkarrets størrelse) og alt efter, hvad der

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resultados clínicos desejados.

- Ao embolizar deformações arterio-venosas, seleccionar partículas de um tamanho que bloqueie o núcleo sem passar pela deformação arterio-venosa
- Seleccionar um cateter de administração a base do tamanho do vaso objectivado. As microesferas Bead Block toleram um nível de compressão temporária de 20 a 30% ao passarem pelo cateter de administração.
- Introduzir o cateter de administração no vaso a que se destina, em conformidade com as técnicas normais. Posicionar a ponta do cateter o mais próximo possível do local do tratamento, para evitar bloquear inadvertidamente os vasos normais.
- As microesferas Bead Block não são radio-opacas. Recomenda-se a monitorização da embolização sob visualização fluoroscópica, através da adição da quantidade desejada de um meio de contraste ao fluido fisiológico em suspensão.
- Para administrar as microesferas Bead Block:

Seringa pré-cheia:

o Aspirar directamente 5 ml de líquido de contraste para a seringa de forma a obter aproximadamente 50% do líquido de contraste e 50% da mistura de soro fisiológico. Remover todo o ar contido na seringa. Inverter cuidadosamente a seringa de 20ml várias vezes, de forma a suspender uniformemente as microesferas Bead Block e a solução de contraste. Encaixar a seringa de 20 ml numa das aberturas da torneira de paragem de 3 vias do tipo luer lock e, caso se deseje, encaixar um cateter de distribuição na outra abertura da torneira. Aguardar alguns minutos, a fim de permitir que as microesferas Bead Block se suspendam devidamente. Aspirar as microesferas Bead Block, juntamente com a solução de contraste, para dentro da seringa de injecção, de forma lenta e com cuidado, a fim de minimizar a possibilidade de introduzir ar no sistema. Remover todo o ar do sistema antes de dar a injecção. Injectar as microesferas Bead Block, juntamente com a solução de contraste, em condições de visualização fluoroscópica, empregando uma acção lenta e pulsatil e verificando, ao mesmo tempo, a taxa de fluxo de contraste. Caso não se observe nenhum efeito na taxa de fluxo, repetir o processo de administração com injecções adicionais de microesferas Bead Block e solução de contraste, ou considerar a administração de microesferas Bead Block de tamanho maior. Se a mistura de microesferas Bead Block e solução de contraste tiver de ser suspensa de novo, inverter cuidadosamente e por varias vezes a seringa de 20 ml. Exercer juízo clínico e experiência ao determinar o ponto final de embolização.

Frasco-ampola:

o Depois de ter agitado o frasco contendo as microesferas Bead Block diluir as microesferas Bead Block com o meio de contraste ou numa vasilha metálica ou de aço inoxidável ou directamente na seringa. Ter o cuidado de assegurar a suspensão apropriada das partículas no meio de contraste, a fim de aumentar a distribuição uniforme das partículas durante a injecção. Aspirar as microesferas Bead Block para dentro de uma agulha de seringa de tamanho igual a ou maior que um calibre 19 (1,07 mm). Injectar lentamente as microesferas Bead Block no cateter de distribuição, em condições de visualização fluoroscópica, ao mesmo tempo que se observa a taxa do fluxo de contraste. Caso não se observe um efeito na taxa do fluxo, seleccionar uma partícula de tamanho maior e repetir o processo de administração. Exercer juízo clínico e experiência ao determinar o ponto final de embolização.

- Uma vez concluído o tratamento, remover o cateter ao mesmo tempo que se mantem uma leve sucção, a fim de não desalojar as microesferas Bead Block que se encontrem ainda dentro do lumen do cateter.
- Deitar fora todas as microesferas Bead Block que tenham sido abertas mas não utilizadas e que se encontrem na seringa pré-cheia ou no frasco ampola.

ETIQUETA DA EMBALAGEM:

REF	= Número do catálogo		= Atenção, consultar as instruções de utilização
LOT	= Numero do lote	STERILE	= Esterilizado a vapor
	= Não reutilizar		= Prazo de validade

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11. Um nível de resistência vascular periférica às artérias de distribuição que impossibilite a passagem de microesferas Bead Block para a lesão.
12. Não utilizar microesferas Bead Block nas seguintes aplicações:
    i. Embolizações de "shunts" artério-venosos com diâmetros grandes (ou seja, quando o sangue não efectua a transição arterial/capilar/venosa mas passa directamente da artéria para a veia
    ii. Vasculatura arterial pulmonar.
    iii. Quaisquer vasos em que o agente embólico Bead Block tenha a possibilidade de transitar directamente para a artéria carótida interna ou para os vasos acima listados.

AVISO: Certos estudos têm demonstrado que as microesferas Bead Block não formam agregados e que, como resultado, penetram nos vasos sanguíneos a um nível mais profundo do que o de partículas de PVA de tamanho e em condições semelhantes. Deve-se ter o cuidado de seleccionar um agente embólico Bead Block de tamanho maior ao embolizar deformações artério-venosas com grandes "shunts", a fim de evitar permitir a passagem das microesferas para a circulação pulmonar ou coronária.

A cor das microesferas Bead Block poderá ser visível através da pele caso as mesmas sejam injectadas em artérias de distribuição dos tecidos superficiais.

CUIDADOS:

- Não utilizar caso a seringa, o frasco-ampola ou a embalagem pareçam ter sido danificados.
- Produto estéril e próprio para uma única utilização. Não reutilizar.
- Seleccionar o tamanho e a quantidade de microesferas Bead Block próprios para a patologia que deve ser tratada
- A embolização com microesferas Bead Block apenas deve ser efectuada por médicos que tenham recebido a devida formação em intervenção em oclusão, na região que se pretende embolizar

AVISO:
A legislação federal dos EUA estabelece que este dispositivo apenas pode ser vendido mediante receita médica.

COMPLICAÇÕES POTENCIAIS:

1. Refluxo ou passagem indesejável das microesferas Bead Block para as artérias normais adjacentes à lesão que esteja a ser tratada ou, através da lesão, para outras artérias ou leitos arteriais tais como as circulações da artéria carótida interna, pulmonar ou coronária.
2. Embolização pulmonar.
3. Isquemia em local indesejável.
4. Saturação de leitos capilares e canalização dos tecidos
5. Trombose isquémica ou enfarte isquémico
6. Rupture ou lesão de vasos sanguíneos e hemorragias.
7. Defeitos neurológicos incluindo paralisias dos nervos craniano
8. Espasmos vasculares
9. Morte
10. Re-canalizações.
11. Reacções a corpos estranhos que exijam intervenções médicas.
12. Infecções que exijam intervenções médicas.
13. Formação de coágulos na ponta dos cateteres e deslocação subsequente daqueles.

CONSERVAÇÃO E ARMAZENAMENTO:

- As microesferas Bead Block devem ser armazenadas em local fresco, seco e escuro, dentro da sua embalagem original.
- Utilizar dentro do prazo de validade indicado na etiqueta da seringa/frasco-ampola.
- Não congelar.

INSTRUÇÕES DE UTILIZAÇÃO:

- Avaliar cuidadosamente a rede vascular associada à lesão, utilizando para tal a formação de imagens antes de iniciar o procedimento de embolização.
- As microesferas Bead Block encontram-se disponíveis numa série de tamanhos. Ter o cuidado de seleccionar as microesferas Bead Block do tamanho que melhor corresponda à patologia em questão (ou seja, objectivo vascular/tamanho dos vasos) e que tenha os

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giver det ønskede kliniske resultat.
- Ved embolisering af arteriovenøse misdannelser, vælges en partikelstørrelse som vil lukke såret uden at passere gennem AVM.
- Vælg et forsyningskateter i forhold til blodkarrets størrelse. Bead Block mikrokugler kan tolerere midlertidig sammenpresning på mellem 20% og 30% for at kunne lette passage gennem forsyningskatetret.
- Anbring forsyningskatetret i blodkarret ved hjælp af standardmetoder. Placer katetrets spids så tæt som muligt på det sted, der skal behandles; dette er for at undgå utilsigtet okklusion af normale blodkar.
- Bead Block mikrokugler er ikke røntgenfaste. Det anbefales, at emboliseringen overvåges under fluoroskopisk visualisering, samt ved at tilsætte den ønskede mængde kontrastmiddel til den fysiologiske suspensionsvæske.
- Sådan tilsættes Bead Block mikrokugler.

Forfyldt sprøjte:

o Opsug 5 ml af kontrastmidlet direkte ind i sprøjten for at opnå en blanding på ca. 50% af kontrastmiddel og ca. 50% af saltvandsopløsning. Fjern al luft fra sprøjten. For at suspendere Bead Block mikrokuglerne/kontrastopløsningen jævnt, vendes 20 ml sprøjten forsigtigt op og ned adskillige gange. Fastgør 20 ml sprøjten til en port på luer-lock 3-vejs stophanen, hvis det ønskes, kan et forsyningskateter fastgøres på stophanens sidste indgang. Vent adskillige minutter for at lade Bead Block mikrokuglerne suspendere forsvarligt. Træk forsigtigt og langsomt Bead Block mikrokuglerne/kontrastopløsningen ind i injektionssprøjten; dette er for at begrænse muligheden for, at der trænger luft ind i systemet. Fjern al luft fra systemet inden injektionen. Injicér Bead Block mikrokuglerne/kontrastopløsningen fra injektionssprøjten under fluoroskopisk visualisering og med en langsom pulserende bevægelse samtidig med at kontrastopløsningens strømsningshastighed observeres. Hvis strømningshastigheden ikke er påvirket, gentages forsyningsprocessen med yderligere injektioner af Bead Block mikrokugler/kontrastopløsning. Brugen af Bead Block mikrokugler af en stor størrelse kan overvejes. Hvis det er nødvendigt med omsuspension af Bead Block mikrokugler/kontrast-opløsning, vendes 20 ml sprøjten op og ned adskillige gange. Brug almindelig sund fornuft ved afgørelsen af emboliseringens slutpunkt.

Hætteglasset:

o Efter at have rystet flasken indeholdende Bead Block mikrokugler, fortyndes Bead Block mikrokuglerne med kontrastmidlet; dette kan enten gøres i en metal- eller rustfri stålkop, eller direkte i sprøjten. Det skal sikres, at partiklerne suspenderes forsvarligt i kontrastmidlet for at forstærke partiklernes fordeling under injektion. Sug Bead Block mikrokuglerne ind i en kanyle med en størrelse der er større end, eller lig med 19 G (1,07 mm). Sprøjt Bead Block mikrokuglerne langsomt ind i forsyningskatetret under fluoroskopisk visualisering samtidig med, at strømningshastigheden observeres. Hvis strømningshastigheden ikke er påvirket, vælges en større partikelstørrelse og forsyningsprocessen gentages. Gør brug af almindelig sund fornuft ved afgørelsen af emboliseringens slutpunkt.

- Når behandlingen er tilendebragt, fjernes katetret samtidig med, at sugekraften bibeholdes; dette er for at undgå, at de Bead Block mikrokugler, der findes inde i katetrets hulrum, ikke falder ud.
- Kasser eventuelt åbne, ikke anvendte Bead Block mikrokugler i een forfyldte sprøjte eller hætteglas.

EMBALLERINGSETIKET:

REF	= Katalog nummer		= Vigtigt! Se Brugsanvisningen
LOT	= Partinummer	STERILE	= Dampsteriliseret
	= Må ikke genbruges		Anvendes inden

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Suomi

STERIILI - KERTAKÄYTTÖINEN PYROGEENITÖN
Höyrysteriloitu
Ei saa käyttää, jos pakkaus ei ole avaamaton ja ehjä

KUVAUS:

Bead Block sisältää sarjan hydrogeelisiä mikropalloja, jotka ovat bioyhteensopivia, hydrofiilisiä, resorboitumattomia ja tarkasti kalibroituja. Bead Block -mikropallot on valmistettu polyvinyylialkoholista, ja niitä on saatavissa seuraavina kokoina:

Koko	Etiketin väri
100 - 300 µm	Keltainen
300 - 500 µm	Sininen
500 - 700 µm	Punainen
700 – 900 µm	Vihreä
900 - 1200 µm	Purppura

TUOTETIEDOT:

Ruisku
- 20 ml:n ruisku.
- Ruisku toimitetaan steriiliilä, tiviillä, muovatulla ja irrotettavalla Tyvek®-alustalla, jonka etiketin väri osoittaa ruiskun koon.
- Jokainen ruisku sisältää noin 1 ml tai 2 ml Bead Block -mikropalloja pyrogeenittomassa, steerilissä, puskuroidussa keittosuolaliuoksessa. Suolaliuoksen ja Bead Block -mikropallojen yhteistilavuus on 5 ml.
- Kukin ruisku on tarkoitettu vain yhden potilaan käyttöön. Sitä ei saa steriloida uutta käyttöä varten. Hävitä käyttämätön aine.

Pullo
- 10 ml:n lasipullo.
- Korkin päällä on alumiinitiiviste, jossa on värillinen suojus.
- Jokainen pullo sisältää noin 1 ml tai 2 ml Bead Block -mikropalloja pyrogeenittomassa, steerilissä, puskuroidussa keittosuolaliuoksessa. Suolaliuoksen ja Bead Block -mikropallojen yhteistilavuus on 8 ml.
- Kukin pullo on tarkoitettu vain yhden potilaan käyttöön. Sitä ei saa steriloida uutta käyttöä varten. Hävitä käyttämätön aine.

KÄYTÖN INDIKAATIOT:

Bead Block -mikropalloja käytetään verisuonikasvainten ja arteriovenoosien malformaatioiden (AVM) embolisaatiossa.

KLIINISET SOVELLUKSET:

Tieteellisissä julkaisuissa on runsaasti tietoja embolisaatiomenetelmistä, joissa käytetään monia eri keinoaineita sekä neurologisessa että perifeerisessä verisuonijärjestelmässä, mukaan lukien pää, kaula, selkäranka, maksa, urogenitaalinen kanava, kohtu, gastrointestinaalinen kanava, raajat ja keuhkot. Tämän käyttöohjeen lopussa on viitekirjallisuusluettelo.

KONTRAINDIKAATIOT:

1. Intoleranssi okkluusiotoimenpiteille.
2. Verisuonianatomia tai verenvuoto, joka estää katetrin asettamisen tai embolusten injisoimisen.
3. Vasospasmi tai sen riski.
4. Verenvuoto tai sen riski.
5. Vaikea sairaus, jossa ilmenee ateroomia.
6. Alueelle veriä johtavat valtimot, jotka ovat pienempiä kuin distaalihaarat, joista ne lähtevät.
7. Avoimet ekstra-intrakraniaaliset anastomoosit tai suntit.
8. Rinnakkain kulkevat suonet, jotka voivat vaarantaa normaalit alueet embolisaation aikana.
9. Päävaltimot, jotka johtavat suoraan aivohermoihin.
10. Leesioon veriä johtavat valtimot, jotka eivät ole riittävän suuria Bead Block -mikropallojen vastaanottamiseen.
11. Alueelle veriä johtavien valtimoiden perifeerinen vaskulaarinen resistenssi.

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Português

FESTÉRIL - NÃO REUTILIZÁVEL - NÃO PIROGÉNICO
Esterilizado a vapor
Não utilizar caso a embalagem tenha sido aberta ou danificada

DESCRIÇÃO:

Bead Block consta de uma série de microesferas de hidrogel que são biocompatíveis, hidrofílicas, não reabsorviveis e calibradas com precisão. As microesferas Bead Block são feitas de álcool polivinílico e encontram-se disponíveis nas seguintes classes de tamanhos

Tamanho	Cor da etiqueta
100 – 300 µm	Amarela
300 – 500 µm	Azul
500 – 700 µm	Vermelha
700 – 900 µm	Verde
900 - 1200 µm	Roxa

APRESENTAÇÃO:

Seringa
- Seringa de 20 ml.
- A seringa encontra-se embalada num tabuleiro de Tyvek®, estéril, pré-moldado, coberto com uma película amovível e marcado com uma etiqueta cuja cor indica a classe de tamanho específica.
- Cada seringa contém aproximadamente 1 ml ou 2 ml de microesferas Bead Block em soro fisiológico não pirogénico estéril, tamponado. O volume total do soro com as microesferas Bead Block é de 5 ml.
- Cada seringa destina-se a ser utilizada com um único doente. Não reesterilizar. Eliminar todos os materiais não utilizados.

Frasco-ampola
- Frasco-ampola de vidro de 10 ml.
- Rolha vedada com uma tampa de alumínio equipada com uma tampa colorida.
- Cada frasco-ampola contém aproximadamente 1 ml ou 2 ml de microesferas Bead Block em soro fisiológico não pirogénico estéril, tamponado. O volume total do soro com as microesferas Bead Block é de 8ml.
- Cada frasco-ampola destina-se a ser utilizado com um único doente. Não reesterilizar. Descartar todos os materiais não utilizados.

INDICAÇÕES:

As microesferas Bead Block são próprias para serem utilizadas na embolização de tumores hipervasculares e deformações artério venosas (AVMs).

APLICAÇÕES CLÍNICAS:

A literatura científica fornece-nos uma documentação extensiva relativa aos procedimentos de embolização efectuados com ajuda de uma grande série de agentes artificiais nos sistemas neurológico e vascular periférico, incluindo a cabeça, pescoço, medula espinal, fígado, tracto genito urinário, útero, sistema gastro intestinal, membros e pulmões. Segue-se a estas instruções uma bibliografia representativa de tal documentação.

CONTRA-INDICAÇÕES:

1. Doentes com intolerância a procedimentos de oclusão.
2. Uma anatomia vascular ou fluxo sanguíneo tal que impossibilite a colocação de cateteres ou a injecção de émbolos.
3. A presença ou probabilidade da ocorrência de espasmos vasculares.
4. A presença ou probabilidade da ocorrência de hemorragias.
5. A presença de doenças ateromatosas graves.
6. A presença de artérias de distribuição mais pequenas do que as ramificações distais das quais emergem.
7. A presença de anastomoses intracranianas ou "shunts" evidentes.
8. A presença de trajectos colaterais dos vasos, que constituam um perigo potencial para as áreas normais durante a embolização.
9. A presença de artérias finais que conduzam directamente aos nervos cranianos.
10. A presença de artérias que irrigam lesão, muito pequenas para receberem microesferas Bead Block.

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användas så att nidus ockluderas utan att de passerar igenom AVM.

- Välj tillförselkateter med utgångspunkt i målkärlets diameter. Bead Block-mikrosfärer tål en tillfällig sammantryckning på 20 - 30 procent så att passagen genom tillförselkatetern underlättas.
- Introducera tillförselkatetern i målkärlet med användning av vedertagen teknik. Placera kateterns spets så nära behandlingsstället som möjligt så att oavsiktlig ocklusion av normala kärl undviks.
- Bead Block-mikrosfärer är inte radiopaka. Vi rekommenderar att emboliseringen övervakas med röntgengenomlysning, genom att lägga till önskad mängd kontrastmedel till den fysiologiska suspensionsvätskan.
- Gör så här för att ge Bead Block- mikrosfärer:

Förhandsfylld spruta:

o Sug upp 5 ml kontrastmedel i sprutan för att uppnå en blandning med cirka 50 procent kontrast och cirka 50 procent saltlösning. Töm sprutan på luft. Vänd den försiktigt upp och ner flera gånger så att Bead Block-mikrosfärer och kontrastmedlet fördelas jämnt . Anslut 20 ml-sprutan till en av de luerlåsförsedda portarna på trevägskranen. En tillförselkateter kan om så önskas kopplas till den återstående porten på kranen. Vänta i flera minuter så att mikrosfärerna hinner fördela sig ordentligt. Dra sakta och försiktigt in Bead Block-mikrosfärer samt kontrastmedel i injektionssprutan för att minimera risken för att luft kommer in i systemet. Töm hela systemet på luft före injektionen. Injicera den blandning av Bead Block-mikrosfärer/kontrastmedel som finns i injektionssprutan under röntgengenomlysning och med långsam pulserande rörelse, och övervaka samtidigt kontrastmedlets flödeshastighet. Om flödeshastigheten inte påverkas skall tillförselförfarandet upprepas med ytterligare injektioner av Bead Block-mikrosfärer och kontrastmedel, alternativt skall större mikrosfärer användas. Om lösningen med Bead Block-mikrosfärer och kontrastmedel måste omfördelas vänder du försiktigt upp och ned på 20 ml-sprutan flera gånger. Använd försiktighetsprincipen vid bestämning av emboliseringens slutpunkt.

Ampull:

o Späd ut Bead Block-mikrosfärer med kontrastmedel efter att ha skakat flaskan med mikrosfärerna, antingen direkt i sprutan eller i en kopp av metall/rostfritt stål. Var noga med att partiklarna fördelas jämnt i kontrastmedlet så att spridningen av partiklarna förbättras vid injektionen. Dra in Bead Block-mikrosfärer i en sprutnål som är större eller likvärdig med storlek nr. 19 (1,07 mm). Injicera blandningen av Bead Block-mikrosfärer/kontrastmedel i leveranskatetern under röntgengenomlysning med en långsam pulserande rörelse, och övervaka samtidigt flödeshastigheten på kontrastmedlet. Om flödeshastigheten inte påverkas skall större partiklar användas och tillförselförfarandet upprepas. Använd försiktighetsprincipen vid bestämning av för emboliseringens slutpunkten.

- Ta bort katetern, men upprätthåll en lätt sugkraft så att de Bead Block-mikrosfärer som fortfarande finns i kateterns lumen inte driver bort.
- Kassera eventuella oppna, oanvända Bead Block-mikrosfärer i den i förväg fyllda sprutan eller ampullen.

FÖRPACKNINGSETIKETT:

REF	– Katalognummer		– OBS! Se bruksanvisningen
LOT	– Batchnummer/ lotnummer	STERILE	– Ångsteriliserad
	Får ej återanvändas		– Använd före

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joka estää Bead Block -mikropallojen pääsyn leesioon.

12. Bead Block -mikropalloja ei saa käyttää seuraavissa sovelluksissa:
    i. Suuriläpimittaisten AV-suntttien (ts. veri ei kulje valtimo/kapillaari/ laskimoreitin kautta, vaan suoraan valtimosta laskimoon) embolisaatio.
    ii. Keuhkovaltimoverisuonet.
    iii. Verisuonisto, jossa Bead Block -embolisaatioaine voi päästä suoraan sisempään kaulavaltimoon tai yllä mainittuihin verisuoniin.

VAROITUS: Tutkimusten mukaan Bead Block -mikropallot eivät muodosta aggregaatteja, joten ne tunkeutuvat syvemmälle verisuonistoon kuin muut samankokoiset PVA-partikkelit. Suuria suntteja sisältävien AV-malformaatioiden embolisaatiossa on valittava suurikokoisempi Bead Block -embolisaatioaine, jotta mikropallot eivät pääse kulkeutumaan keuhkojen tai sydämen verenkiertoon.

Bead Block -mikropallot näkyisivät ihon läpi, jos niitä injisoitaisiin valtimoihin, jotka johtavat verta pintasuoniin.

HUOMAUTUKSET:

- Ei saa käyttää, mikäli ruisku, pullo tai pakkaus ei ole ehjä.
- Steriili, kertakäyttöinen tuote. Ei saa käyttää uudestaan.
- Valitse käsiteltävään patologiaan sopiva Bead Block -mikropallojen koko ja määrä.
- Bead Block -mikropalloja saavat käyttää embolisaatioon vain lääkärit, jotka ovat saaneet asianmukaisen, kyseisellä embolisaatioalueella tehtävää interventionaalista okkluusiota koskevan koulutuksen.

HUOMIO:
Tätä laitetta saa myydä vain lääkäri tai lääkärin määräyksestä (USA).

MAHDOLLISET KOMPLIKAATIOT:

1. Bead Block -mikropallojen ei-toivottu refluksi tai kulkeutuminen terveisiin valtimoihin, jotka ovat käsiteltävän leesion vieressä, tai leesion kautta muihin valtimoihin tai valtimoalueisiin, esim. sisempään kaulavaltimoon tai keuhkojen tai sydämen verenkiertoon.
2. Keuhkoveritulppa.
3. Iskemia ei-toivotussa kohdassa.
4. Kapillaarisen alueen saturaatio ja kudosvauriot.
5. Iskeeminen halvaus tai infarkti.
6. Verisuonen tai leesion repeytyminen ja verenvuoto.
7. Neurologiset häiriöt, esim. aivohermon halvaus.
8. Vasospasmi.
9. Kuolema.
10. Rekanalisaatio.
11. Lääkehoitoa vaativa vieraisiin kappaleisiin reagoiminen.
12. Lääkehoitoa vaativa infektio.
13. Tukoksen muodostuminen katetrin kärkeen aiheuttaen katetrin siirtymisen paikaltaan.

HUOLTO JA SÄILYTYS:

- Bead Block -mikropallot on säilytettävä kuivassa ja viileässä paikassa valolta suojattuina ja alkuperäispakkauksessa.
- Käytettävä viimeistään ruiskun/pullon etikettiin merkittyyn päivämäärään mennessä.
- Ei saa pakastaa.

KÄYTTÖOHJE:

- Arvioi ennen embolisaatiotoimenpiteen aloittamista leesiota ympäröivä verisuonisto huolellisesti käyttäen korkearesoluutioista kuvausta.
- Bead Block -mikropalloja on saatavissa eri kokoisina. Valitse huolellisesti käsiteltävään patologiaan (ts. vaskulaarinen kohde / suonen koko) parhaiten sopiva ja halutun tuloksen antava Bead Block -mikropallojen koko.
- AV-malformaatioiden embolisaatiossa on valittava partikkelikoko, joka tukkii riiduksen kulkematta AVM:n läpi.
- Valitse asennuskatetri kohdesuonen koon mukaan. Bead Block -mikropallot

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kestävät tilapaista 20–30 %:n kompressiota, jotta ne kulkisivat helpommin asennuskatetrin läpi.
- Vie asennuskatetri kohdesuoneen sairaalan tavallisen käytännön mukaan. Aseta katetrin kärki mahdollisimman lähelle hoitokohtaa, jotta terveet suonet eivät tukkeudu tahattomasti.
- Bead Block -mikropallot eivät näy röntgenläpivalaisussa. Embolisaatiota on suositeltavaa tarkkailla röntgenläpivalaisussa lisäämällä haluttu määrä varjoainetta keittosuolaliuokseen.
- Vie Bead Block -mikropallot haluttuun kohtaan.

Esitäytetty ruisku:

o Aspiroi 5 ml varjoainetta suoraan ruiskuun, jotta saadaan n. 50 % varjoainetta ja n. 50 % keittosuolaliuosta sisältävä seos. Poista ilma ruiskusta. Sekoita Bead Block -mikropallot ja varjoaine hyvin kääntämällä 20 ml:n ruiskua varovasti ylösalaisin useita kertoja. Kiinnitä 20 ml:n ruisku toiseen luer lock 3-tiehanan porttiin ja kiinnitä haluttaessa asennuskatetri hanan toiseen porttiin. Odota useita minuutteja, jotta Bead Block -mikropallot sekoittuvat hyvin. Vedä Bead Block -mikropallo-varjoaineliuos injektioruiskuun hitaasti ja varovasti, jotta järjestelmään ei pääse ilmaa. Poista ilma kokonaan järjestelmästä ennen injisoimista. Injisoi Bead Block -mikropallo-varjoaineliuos injektioruiskusta röntgenläpivalaisussa hitaalla, sykäyksittäisellä liikkeellä ja tarkkaile samalla varjoaineen virtausnopeutta. Jos virtausnopeus ei muutu, toista toimenpide injisoimalla uusi Bead Block -mikropallo-varjoaineliuos tai harkitse suurikokoisempien mikropallojen käyttöä. Jos Bead Block -mikropallot ja varjoaine on sekoitettava uudestaan, käännä 20 ml:n ruiskua varovasti ylösalaisin useita kertoja. Käytä varovaista harkintaa embolisaation loppupisteen arvioinnissa.

Pullo:

o Ravista Bead Block -mikropalloja sisältävää pulloa ja laimenna mikropallot varjoaineella joko metalli- tai ruostumattomasta teräksestä valmistetussa astiassa tai suoraan ruiskussa. Varmista, että mikropallopartikkelit sekoittuvat hyvin varjoaineeseen, jotta ne jakautuvat paremmin injisoinnin aikana. Veda Bead Block -mikropallot ruiskun neulaan, jonka koko on vähintään 19 G (1,07 mm). Injisoi Bead Block -mikropallot hitaasti asennuskatetriin röntgenläpivalaisussa ja tarkkaile samalla varjoaineen virtausnopeutta. Jos virtausnopeus ei muutu, valitse suurempi partikkelikoko ja toista toimenpide. Käytä varovaista harkintaa embolisaation loppupisteen arvioinnissa.

- Kun toimenpide on tehty, poista katetri ja jatka imua varovasti, jotta katetrin luumeniin jääneet Bead Block -mikropallot eivät siirry paikaltaan.
- Havitä esitäytetyssä ruiskussa tai pullossa olevat avaamattomat ja käyttämättömät Bead Block -mikropallot.

PAKKAUSMERKINTÄ:

REF	= Luettelonumero		= Huomio: katso käyttöohjetta
LOT	= Eränumero	STERILE	= Höyrysteriloitu
	= Ei saa käyttää uudestaan		= Käytettävä ennen

11. Kärlmotstånd perifert om tillförselartärerna som förhindrar att Bead Block-mikrosfärer passerar till lesionen.
12. Använd inte Bead Block-mikrosfärer i följande tillämpningar:
    i. Embolisering av arteriovenösa shuntar med stor diameter (dvs. där blodet inte passerar genom den arteriella/kapillära/venösa övergången utan direkt från artär till ven.)
    ii. Lungartären och dess förgreningar.
    iii. Någon kärlstruktur där användning av Bead Block embolisk agens skulle kunna gå direkt in i den interna halspulsådern eller ovan angivna kärl.

VARNING: Det har i undersökningar onstaterats att Bead Block-mikrosfärer inte är klumpbildande, och därigenom tränger djupare in i kärlstrukturen jämfört med andra PVA-partiklar av samma storlek. Det är viktigt att iaktta försiktighet och välja en större storlek av Bead Block embolisk agens vid embolisering av arteriovenösa missbildningar med stora shuntar, för att undvika att mikrosfärerna tränger in i hjärt-/lungcirkulationssystemet.

Färgen på Bead Block-mikrosfärer kan synas genom huden vid injektion i artärer som försörjer ytliga vävnader.

FÖRSIKTIGHETSÅTGÄRDER:

- Produkten får inte användas om sprutan, ampullen eller förpackningen verkar skadade.
- Produkten är steril och avsedd för engångsbruk. Återanvändning är förbjuden.
- Välj storlek och antal Bead Block mikrosfärer med utgångspunkt i den patologi som skall behandlas.
- Embolisering med Bead Block-mikrosfärer skall endast utföras av läkare som genomgått relevant utbildning i interventionsocklusion för det område som skall emboliseras.

VAR FÖRSIKTIG!
Enligt federal lagstiftning (USA) får denna produkt endast säljas av läkare eller på läkares ordination.

MÖJLIGA KOMPLIKATIONER:

1. Oönskat återflöde eller överföring av Bead Block-mikrosfärer till normala artärer bredvid mållesionen, eller genom lesionen till andra artärer eller artärbäddar såsom halspulsådern, eller hjärt-/lungcirkulationssystemet.
2. Lungembolisering.
3. Ischemi på oönskat ställe.
4. Saturering av kapillärbäddar och vävnadsskador.
5. Ischemisk stroke eller ischemisk infarkt.
6. Blodkärl eller lesion Brister och blöder
7. Neurologiska skador inklusive förlamning av kranialnerven.
8. Vasospasm.
9. Döden
10. Omkanalisering.
11. Reaktion mot främmande kropp som kräver medicinskt ingripande.
12. Infektion som kräver medicinsk intervention.
13. Koagelbildning vid kateters spets som därefter lossnar.

KONSERVERING OCH FÖRVARING:

- Bead Block-mikrosfärer måste förvaras i originalförpackningen på ett svalt, torr och mörkt ställe.
- Använd före det datum som anges på ampullens/sprutans etikett.
- Får ej frysas in.

BRUKSANVISNING:

- Gör en noggrann bedömning av kärlsystemet runt lesionen med hjälp av bildåtergivning med högupplösning innan emboliseringsingreppet påbörjas.
- Bead Block-mikrosfärer tillhandahålls i en rad olika storlekar. Välj omsorgsfullt ut den storlek av Bead Block-mikrosfärer som bäst passar patologin (dvs. målkärl/kärlstorlek) och ger önskat kliniskt resultat.
- Vid embolisering av arteriovenösa missbildningarskall tillräcklig partikelstorlek

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Svenska

STERIL ENDAST FÖR ENGÅNGSBRUK · ICKE PYROGEN
Ångsteriliserad
Får ej användas om förpackningen har öppnats eller är skadad

BESKRIVNING:

Bead Block innehåller en rad noggrant kalibrerade mikrosfärer av hydrogel som är kroppsvänliga, hydrofila och inte går att absorbera. Bead Block mikrosfärer är tillverkade av polyvinylalkohol och tillhandahålls i följande storlekar.

Storlek	Etikett-färg
100 – 300 µm	Gul
300 – 500 µm	Blå
500 - 700 µm	Röd
700 – 900 µm	Grön
900 - 1200 µm	Lila

PRESENTATION:

Spruta
- 20 ml spruta.
- Sprutan levereras i en steril, tätt försluten och specialutformad Tyvek®-bricka med enkel rivöppning och färgad etikett som underlättar identifiering av storleken.
- Varje spruta innehåller cirka 1 ml eller 2 ml Bead Block mikrosfärer i icke-pyrogen steril och fysiologiskt buffrad saltlösning. Den totala sammanlagda volymen saltlösning och Bead Block-mikrosfärer är 5 ml.
- Varje spruta är avsedd att användas för en enda patient. Får ej omsteriliseras. Oanvänt material skall kasseras.

Ampull
- Glasampull på 10 ml.
- Propp förseglad med en aluminiumhatt som har ett färgat lock.
- Varje ampull innehåller cirka 1 ml eller 2 ml Bead Block-mikrosfärer i icke-pyrogen steril och fysiologiskt buffrad saltlösning. Den totala sammanlagda volymen av saltlösning och Bead Block-mikrosfärer är 8 ml.
- Varje ampull är avsedd att användas för en enda patient. Får ej omsteriliseras. Oanvänt material skall kasseras.

INDIKATIONER:

Bead Block-mikrosfärer är avsedda att användas för embolisering av hypervaskulära tumörer och arteriovenösa missbildningar.

KLINISK TILLÄMPNING:

I vetenskaplig litteratur finns en omfattande dokumentation av emboliseringsingrepp där en rad olika artificiella agenser använts, i såväl neurologiska som perifera kärlsystem, däribland huvud, hals, ryggrad, lever, genitalområde, livmoder, mag-tarmsystem, extremiteter och lungor. En källförteckning med ett representativt urval av dessa följer efter denna bruksanvisning.

KONTRAINDIKATIONER:

1. Patienter som är intoleranta mot ocklusionsingrepp.
2. Kärlanatomi eller blodflöde som förhindrar kateterinlägg eller embolisk injektion.
3. Där vasospasm föreligger eller rimligen kan antas uppträda.
4. Där blödning föreligger eller rimligen kan antas uppträda.
5. Vid svår ateromatos sjukdom.
6. Vid förekomst av tillförselartärer som är mindre än de distala grenar från vilka de springer.
7. Vid extra-till-intrakraniell anastomos eller shuntar.
8. Vid förekomst av kollaterala kärlbanor som skulle kunna utgöra en risk för normala områden under embolisering.
9. Vid förekomst av ändartärer som leder direkt till kranialnerver.
10. Vid förekomst av lesionsstödjande artärer som inte är stora nog att ta emot Bead Block mikrosfärer.

0316-1 08 2003

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Norsk

STERIL KUN TIL ENGANGSBRUK · IKKE PYROGENT
Dampsterilisert
Skal ikke brukes hvis paknigen er åpnet eller skadet

BESKRIVELSE:

Bead Block består av en rekke hydrogel-mikrokuler som er biokompatible, ikke-resorberende og nøyaktig kalibrerte. Bead Block mikrokuler er produsert av polyvinylalkohol og finnes i følgende størrelser:

Størrelse	Etikett Farge
100 - 300 µm	Gul
300 – 500 µm	Blå
500 – 700 µm	Rød
700 - 900 µm	Grønn
900 - 1200 µm	Lilla

PAKNING:

Sprøyte
- Sprøyte på 20 ml.
- Sprøyten kommer i et sterilt, forseglet ferdig utformet Tyvek®-brett. Dette kan foldes til side og er fargemerket for å angi størrelsen.
- Hver sprøyte inneholder ca. 1 ml eller 2 ml av Bead Block mikrokuler i en ikke-pyrogen, fysiologisk bufret saltoppløsning. Totalvolum av saltoppløsning og Bead Block mikrokuler er 5 ml.
- Hver sprøyte er kun til enkeltpasientbruk. Ikke steriliser på nytt. Kast alt ubrukt materiale.

Flaske
- 10 ml glassflaske.
- Propp som er forseglet med en aluminiumskapsel som er utstyrt med en farget kapsel.
- Hver flaske inneholder ca. 1 ml eller 2 ml med Bead Block mikrokuler i en ikke-pyrogen, fysiologisk bufret saltoppløsning. Totalvolum av saltoppløsning og Bead Block mikrokuler er 8 ml.
- Hver sprøyte er kun til enkeltpasientbruk. Ikke steriliser på nytt. Kast alt ubrukt materiale.

INDIKASJONER:

Bead Block mikrokuler skal brukes for embolisering av hypervaskulære svulster og arteriovenøse misdannelser (AVM).

KLINISKE BRUKSOMRÅDER:

Vitenskapelig litteratur gir bred dokumentering av emboliseringsprosedyrer ved bruk av en rekke kunstige stoffer i både det nevrologiske og det perifere vaskulære system, inkludert hode, nakke, ryggrad, lever, urogenitalsystemet, livmor, det gastrointestinale system, ekstremiteter og lunger. Etter bruksanvisningen er det oppført en omfattende bibliografi.

KONTRAINDIKASJONER:

1. Pasienter som reagerer på okklusjonsprosedyrer.
2. Vaskulær anatomi eller blodgjennomstrømning som utelukker innføring av kateter eller embolilinjeksjoner.
3. Forekomst av eller sannsynlighet for vasospasmer.
4. Forekomst av eller sannsynlighet for blødninger.
5. Forekomst av alvorlig ateromatøs sykdom.
6. Hvis tilførselsarteriene er mindre enn de distale årene de springer ut fra.
7. Forekomst av tydelige ekstra-intrakranie- anastomoser eller shunts.
8. Forekomst av kollaterale blodårer som kan skade normale områder ved embolisering.
9. Forekomst av sluttarterier som fører direkte til kranienerver.
10. Hvis lesjonens tilførselsarterier ikker er store nok til å motta Bead Block mikrokuler.
11. Hvis det er perifer vaskulær motstand mot tilførselsarteriene slik at det hinder

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Bead Block mikrokulene i å komme frem til lesjonen.

12. Ikke bruk Bead Block mikroluler i følgende tilfeller:
    i. Embolisering av arteriovenøse shunts med stor diameter (der blodet ikke passerer ved arteriell/kapillær/venøs overgang, men direkte fra arterie til vene.
    ii. Den pulmonal-arterielle vaskulaturen.
    iii. Enhver vaskulatur der bruken av Bead Block embolisk stoff kan føre til at stoffet passerer direkte over i indre hovedarterie eller noen av karene som er nevnt ovenfor.

ADVARSEL: Tidligere studier har vist at Bead Block mikrokuler ikke danner aggregater og derfor trenger dypere inn i vaskulaturen sammenlignet med PVA-partikler av liknende størrelse. Det er viktig å passe på at Bead Block emboloisk stoff med stor størrelse brukes ved embolisering av arteriovenøse misdannelser med store shunts, for å unngå at mikrokulene kommer inn i pulmonal- eller koronarkretsløpet.

Det er mulig at fargen på Bead Block mikrokulene vil synes gjennom huden hvis de injiseres i arterier som forsyner overflatevev.

FORSIKTIGHETSREGLER:

- Ikke bruk hvis sprøyten, flasken eller pakningen ser ut til å være skadet.
- Sterilt produkt til engangsbruk
- Velg størrelse og mengde av Bead Block mikrokuler som er tilpasset den patologiske tilstanden som skal behandles.
- Embolisering med Bead Block mikrokuler skal kun utføres av leger som har fått opplæring i intervensjonell okklusjon i det området som skal emboliseres.

ADVARSEL:
I følge føderale lover (USA) skal denne enhten kun skal selges av eller etter ordre av en lege.

MULIGE KOMPLIKASJONER:

1. Uønsket tilbakestrømming eller overføring av Bead Block mikrokuler til andre arterier nær den aktuelle lesjonen eller overføring gjennom lesjonen til andre arterier eller arterielle lag, som den indre hovedarterie, og pulmonal- eller koronarkretsløpet.
2. Lungeeboliering.
3. Iskemi på et uønsket sted..
4. Fortetning av kapillære lag eller vevsskade.
5. Iskemisk slag eller iskemisk infarkt.
6. Åre- eller lesjonsbrist og blødninger..
7. Nevrologiske mangler, inkludert lammelser av kranienerven.
8. Vasospasmer.
9. Død.
10. Rekanalisering.
11. Reaksjoner overfor fremmedstoffer som gjør medisinske inngrep nødvendig.
12. Infeksjoner som gjør medisinske inngrep nødvendig.
13. Blodproppsdannelse på kateterspissen med påfølgende løsrivelse.

BEVARING OG LAGRING:

- Bead Block mikrokuler må oppbevares på et kjølig, tørt og mørkt sted i originalpakningen.
- Må brukes før datoen som er avmerket på sprøyten/flasken.
- Må ikke fryses.

BRUKSANVISNING:

- Det vaskulære nettverket som er forbundet med lesjonen må evalueres nøye ved bruk av høyoppløselig avbilding før emboliseringsprosessen begynner.
- Bead Block mikrokuler finnes i en rekke størrelser. Pass på at størrelsen på Bead Block mikrokulene er tilpasset patologien (vaskulært mål/årestørrelse) og gir det ønskete kliniske resultat.
- Velg en partikkelstørrelse som okkluderer ansamlingsstedet uten å passere gjennom AVM ved embolisering av arteriovenøse misdannelser.
- Velg et kateter som er basert på størrelsen av det aktuelle karet. Bead Block mikrokuler kan utsettes for en midlertidig kompresjon på 20 % til 30 % for at de skal kunne passere gjennom kateteret.
- Før kateteret inn i det aktuelle karet ifølge vanlig fremgangsmåte. Plasser kateterspissen så nær behandlingsstedet som mulig for å unngå utilsiktet okklusjon av normale kar.
- Bead Block mikrokuler er ikke radioopake. Det anbefales å kontrollere emboliseringen ved bruk av fluoroskopisk visualisering ved å tilsette riktig mengde kontrastvæske til den fysiologiske suspensjonsvæsken.
- Avgivelse av Bead Block mikrokuler.

Ferdigfylt sprøyte:

o Aspirer 5 ml med kontrastvæske direkte inn i sprøyten slik at den inneholder ca. 50 % kontrastvæske og 50 % saltløsningsblanding. All luft må fjernes fra sprøyten. Snu 20 ml sprøyten forsiktig opp ned flere ganger slik at Bead Block mikrokuler/kontrastvæske er jevnt fordelt. Fest 20 ml sprøyten til en av åpningene i 3-veis-stoppekranen. Et avleveringskateter kan festes til den gjenværende åpningen i stoppekranen hvis dette er ønskelig. Vent i flere minutter slik at Bead Block mikrokulene suspenderes på riktig måte. Trekk Bead Block mikrokuler/kontrastvæske-oppløsning opp i injeksjonssprøyten sakte og forsiktig for å minimere muligheten for at luft kommer inn i systemet. Tøm all luft ut av systemet før injeksjonen. Injiser Bead Block/kontrastvæske-opplosningen ved bruk av fluoroskopisk visualisering og langsomme pulserende bevegelser samtidig som gjennnomstrømmingshastigheten observeres. Hvis gjennomstrømmingshastigheten ikke påvirkes må avleveringsprosessen gjentas med flere injeksjoner av Bead Block/kontrastvæske-oppløsning. Bruk av større Bead Block mikrokuler kan vurderes. Hvis resuspendering av Bead Block/kontrastvæske-oppløsningen er påkrevet, skal 20 ml sprøyten snus opp ned flere ganger. Vær heller forsiktig når du skal bedømme emboliseringens avslutningspunkt.

Flaske:

o Rist flasken med Bead Block mikrokuler og fortynn Bead Block mikrokulene med kontrastvæske i et beger av metall eller rustfritt stål eller direkte i sprøyten. Pass på at partiklene i kontrastvæsken er suspendert på riktig måte for bedre distribusjon av partiklene ved injeksjon. Trekk opp Bead Block mikrokuler med en sprøytenål som er større enn eller lik 19 gauge (1,07 mm). Injiser Bead Block mikrokulene langsomt inn i kateteret ved bruk av fluoroskopisk visualisering mens gjennomstrømmingshastigheten observeres. Hvis gjennomstrømmingshastigheten ikke påvirkes, skal en større partikkelstørrelse brukes og avleveringsprosessen gjentas. Vær heller forsiktig når du skal bedømme emboliseringens avslutningspunkt.

- Hjem kateteret når behandlingen er fullført. Bevar en svak oppsugingseffekt slik at Bead Block mikrokulene som fremdeles er kateteterhulrommet ikke løsner.
- Kast alle åpne ubrukte Bead Block mikrokuler fra den ferdigfylte sprøyten eller flasken.

PAKNINGSETIKETT:

REF	= Katalognummer		= Merk. Se bruksanvisningen
LOT	= Batch-nummer/ Lot-nummer	STERILE	= Dampsterilisert
	= Må ikke brukes på nytt		= Brukes før

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7.3 Promotional Materials

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compressible microspheres

Catheter Compatibility Chart

Catheter Inner Diameter (inches)	Manufacturer	Catheter	Compatible BeadBlock™ microsphere 300 - 500 microns	500 - 700 microns	700 - 900 microns	900 - 1200 microns
	4FR and 5FR Catheter		●	●	●	●
.028	BSMD	EmboCath™	●	●	●	
.027	**Terumo**	**Progreat™ Ω**	●	●	●	
.027	MTI	Rebar™ - 027	●	●	●	
.027	BSC	Renegade™ Hi - Flo	●	●	●	
.027	Cordis	MassTransit ®	●	●	●	
.024	BSC	FasTRACKER® - 325	●	●	●	
.019 - .023	BSC	TurboTracker® - 18	●	●		
	BSC	FasTRACKER® - 18	●	●		
	BSC	Renegade™	●	●		
	BSC	RapidTransit®	●	●		
.014 - .018	BSC	Tracker® Excel™ - 14	●			
	Cordis	Prowler® - 14	●			
	Cordis	Prowler® - 10	●			
	BSC	FasTRACKER® - 10	●			
	Cordis	Regatta®	●			
.008 - .013	Balt	Magic® 1.5				
	BSC	Spinnaker Elite™ 1.8				
	BSC	Spinnaker Elite™ 1.5				

TERUMO®

TERUMO INTERVENTIONAL SYSTEMS

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You wouldn't work with an invisible technologist. Why work with an invisible embolic?

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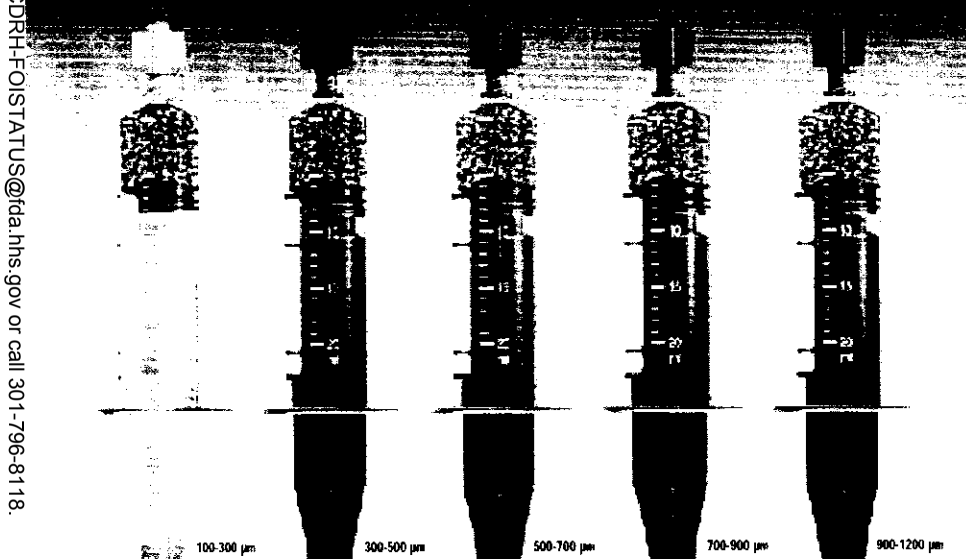
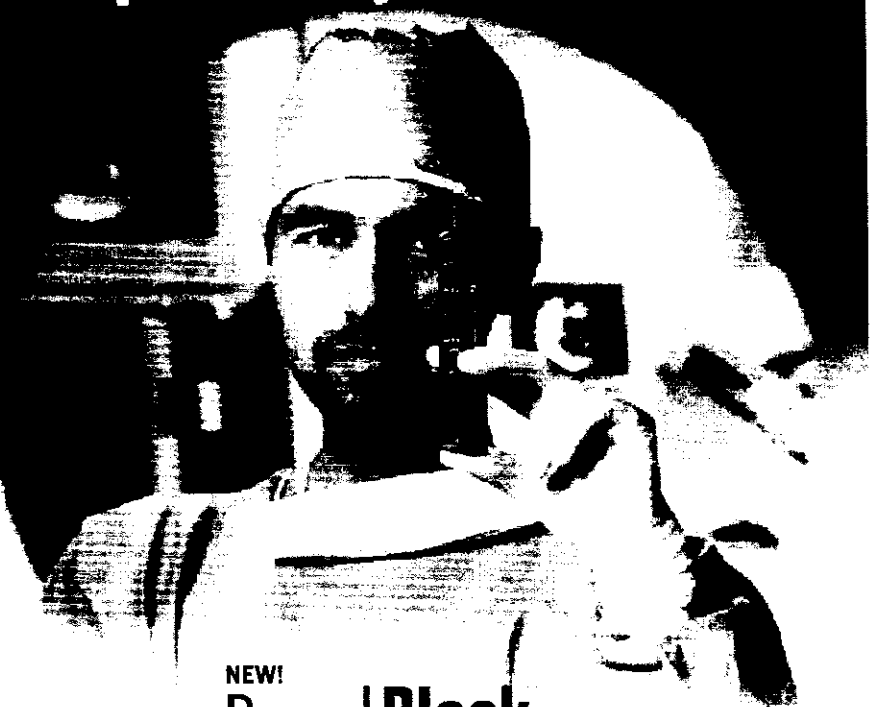
Introducing Bead Block.

The embolic you can see, for suspension you can trust.

- Tinted blue for easy confirmation of suspension
- Remains in suspension twice as long as other microspheres[1]
- Compressible PVA hydrospheres pass smoothly through the microcatheter
- A broad range of calibrated bead sizes in color-coded, pre-filled syringes
- **Exclusively from Terumo, Manufacturer of the Glidewire®**

[1]Data on file, Biocompatibles, Farnham, UK.





NEW!

BeadBlock

Confidence that's visible

For more information about the Terumo family of peripheral embolization products, please call 800-888-3786 or visit www.terumo.com/interventional

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TERUMO

TERUMO INTERVENTIONAL SYSTEMS

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Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.

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3-Way Stopcock Experiment

Digital Photographs

Bead Block

Contour SE

Embosphere

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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The talk track for 3 way stop cock work

- Doctor, what I have here are a series of before and after photos in which we reviewed and examined what happened to spherical embolics after they were suspended via the back and forth motion with a 3 way stop cock.
- The testing was performed by taking the product in its supplied syringe, hooking it up to a three-way stopcock and another syringe, then making one slow and steady push from the product syringe through the three-way stopcock into the second syringe, and then making 20 vigorous exchanges from one syringe to the other. Following the 20 shifts back and forth, the spheres were then put into a petri dish and put under the microscope.
- You may notice a nipple or yolk on some beads. What you're seeing is the sphere poking through the saline it's in. Because the spheres float we put them in a shallow amount of saline -- ideally just covered -- but again as they float they lift off from the bottom and like a buoy at sea float above the surface.

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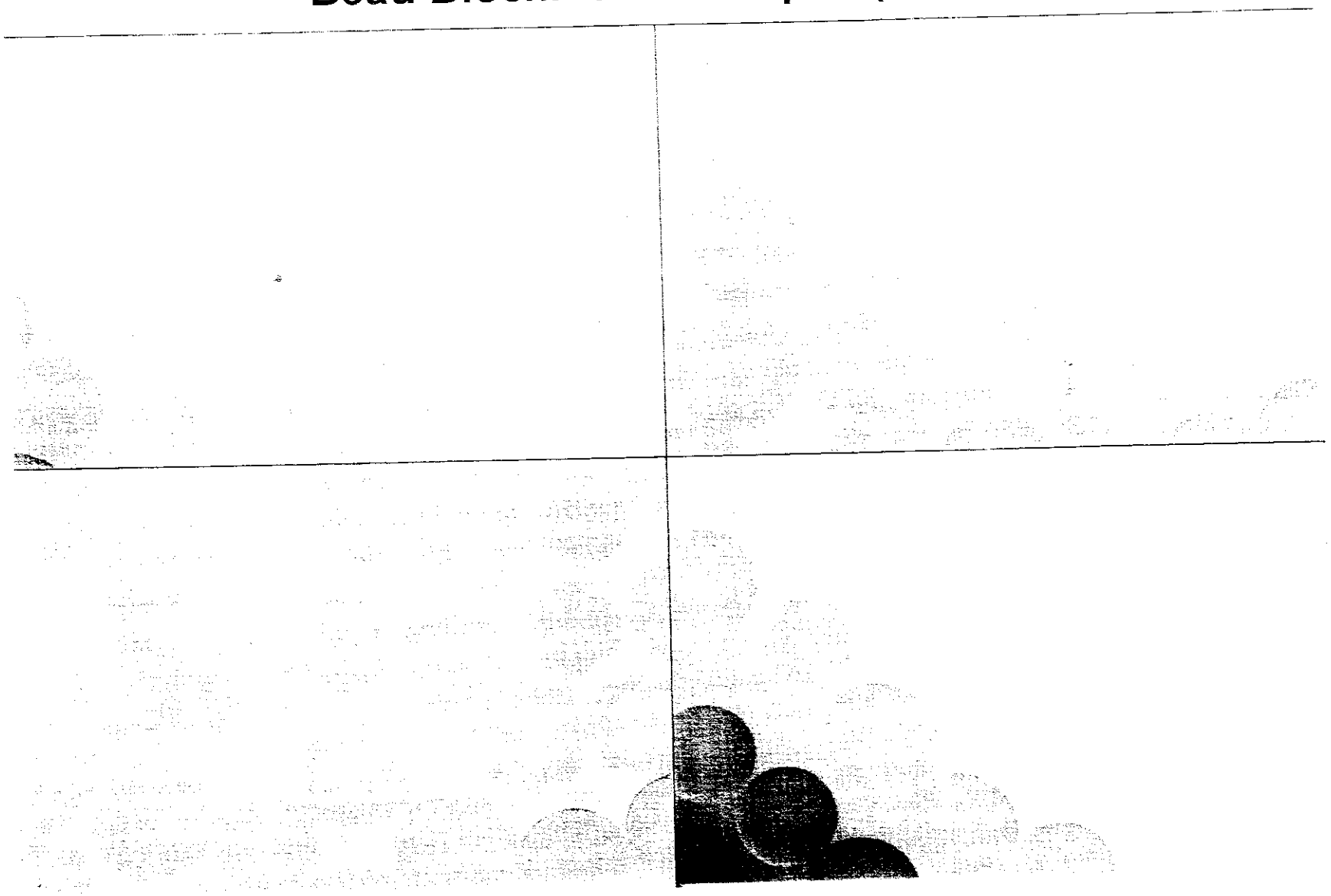
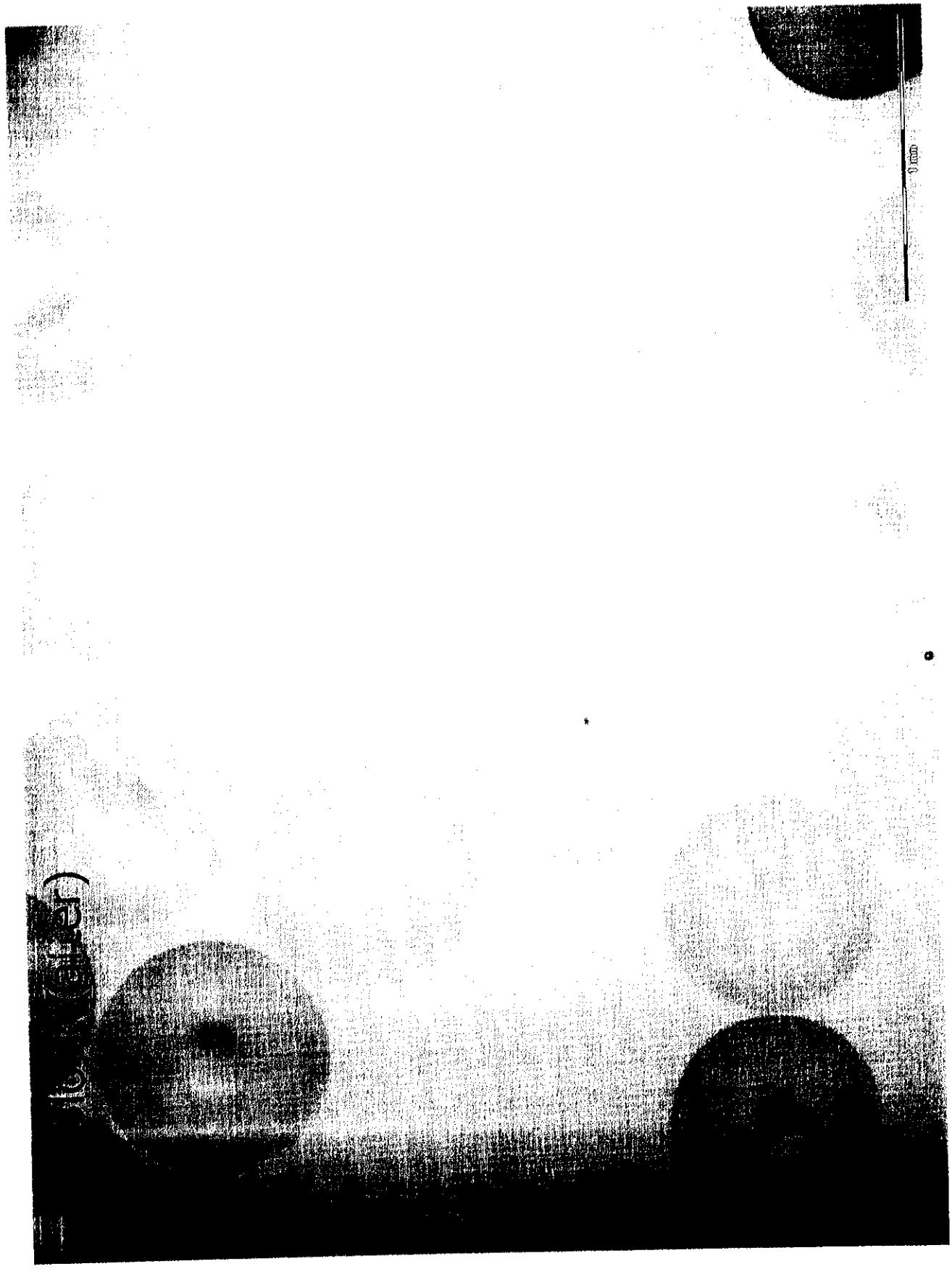
Bead Block: 500 – 700µm (before)



Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

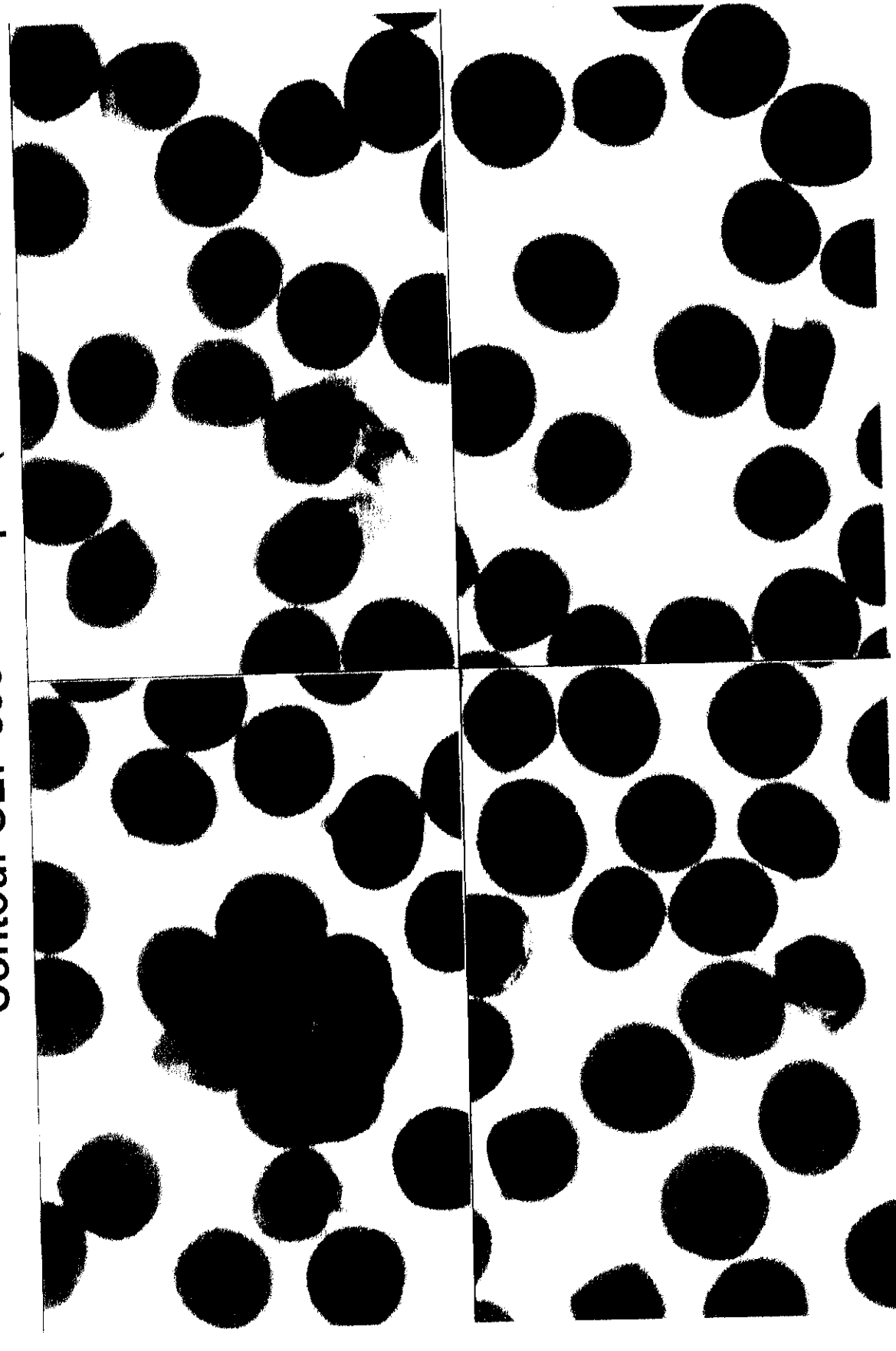
Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.



Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

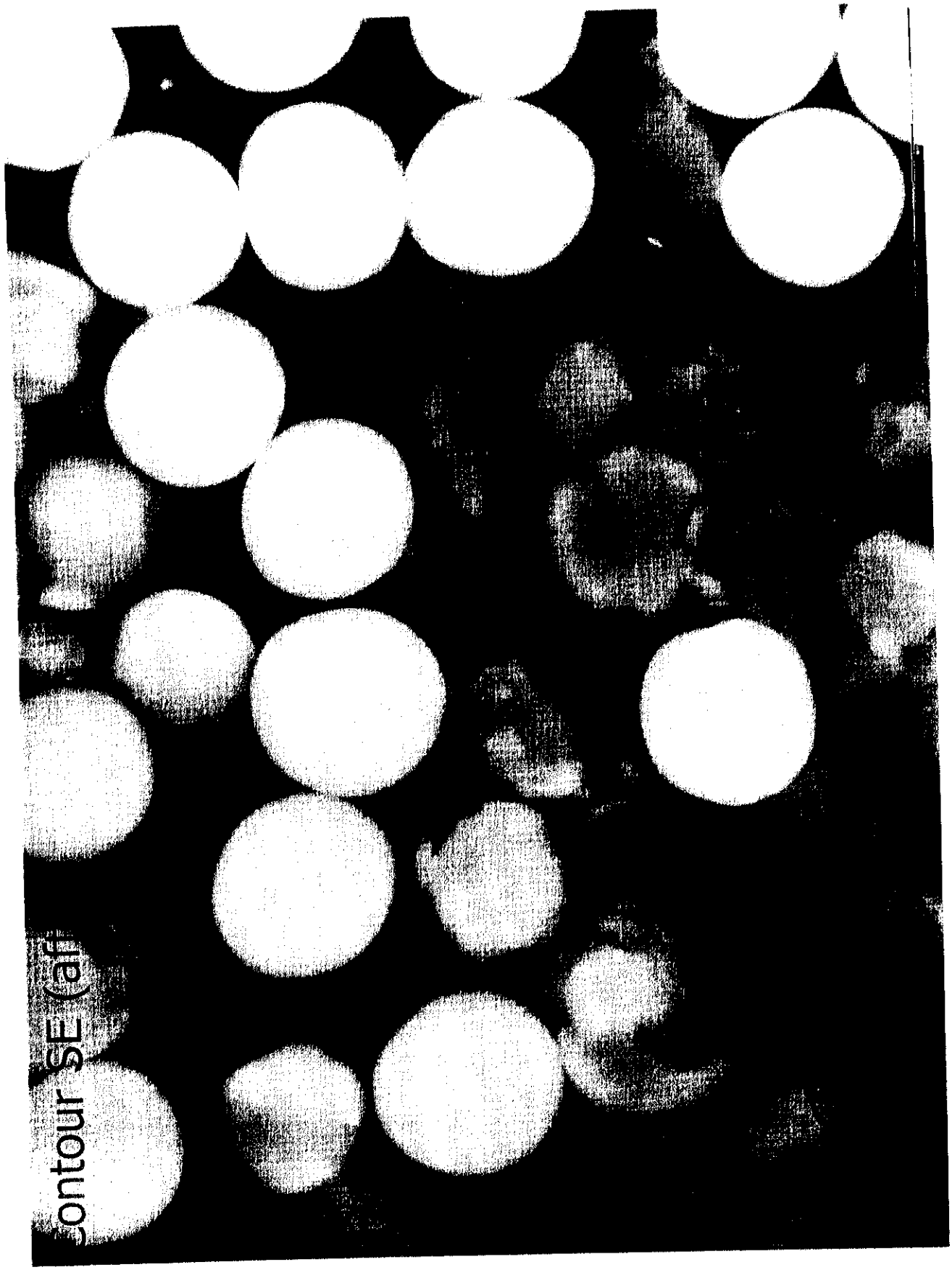
Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.

Contour SE: 500 – 700µm (before)



Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

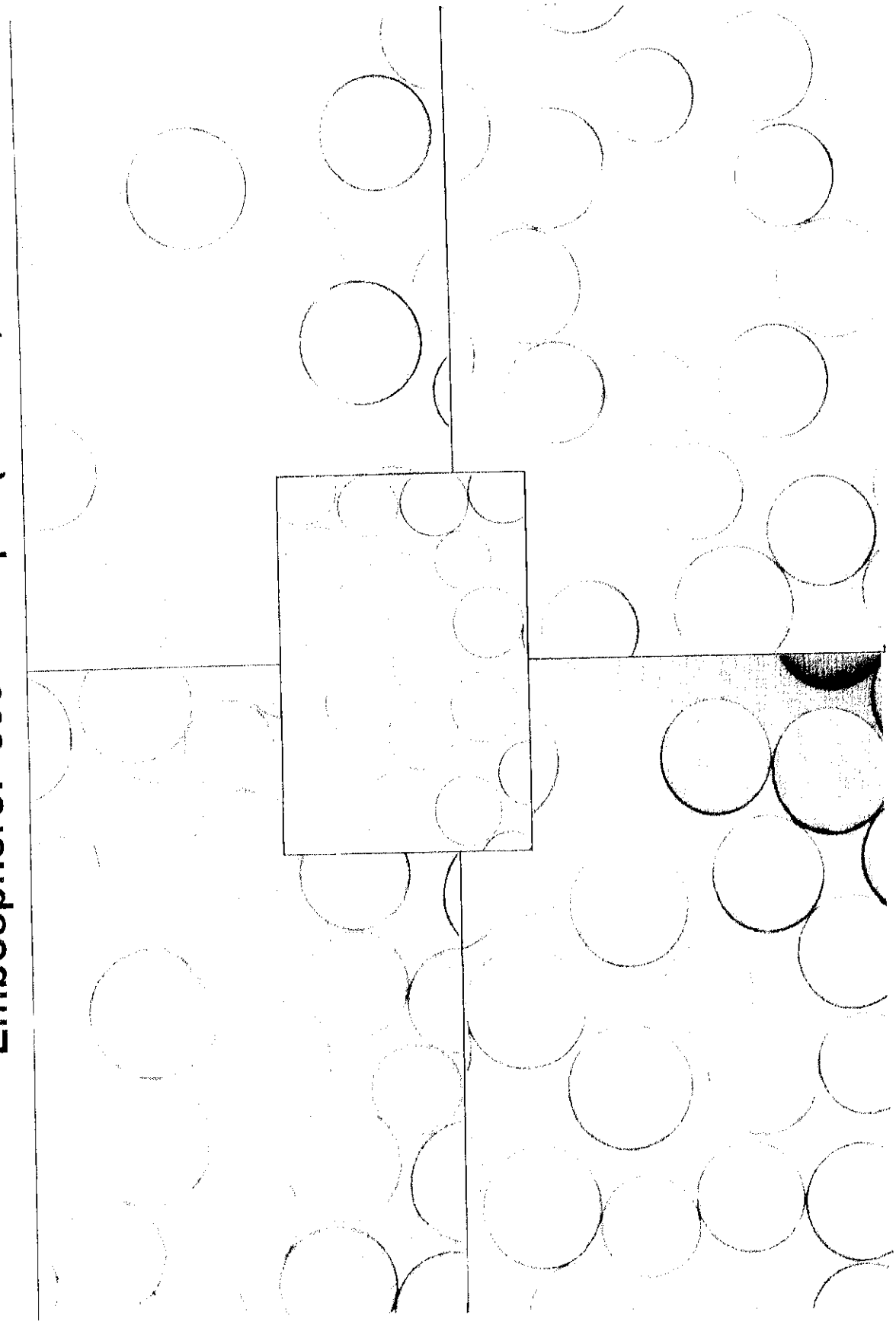
Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.



Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

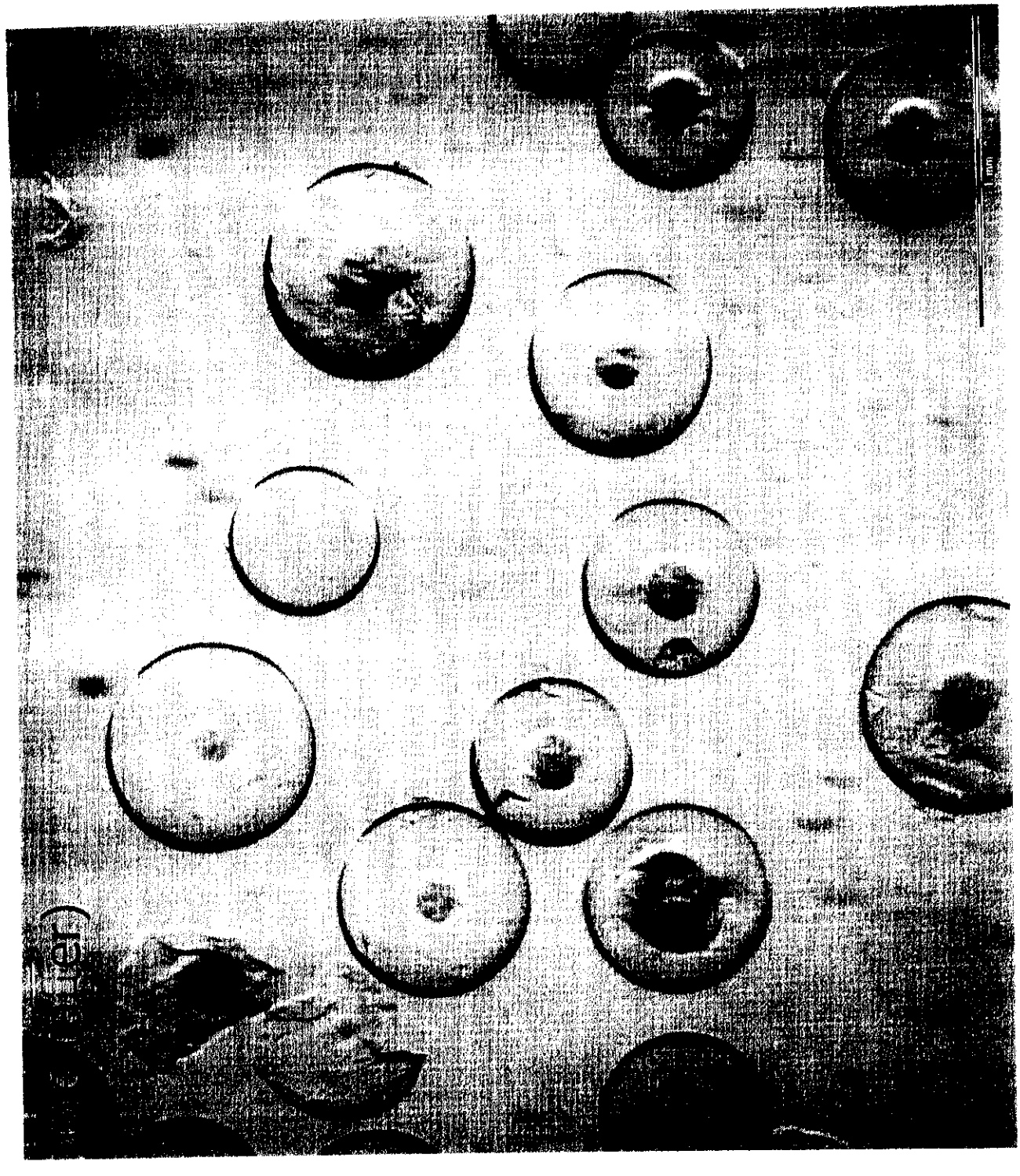
Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.

Embosphere: 500 – 700µm (before)



Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.



Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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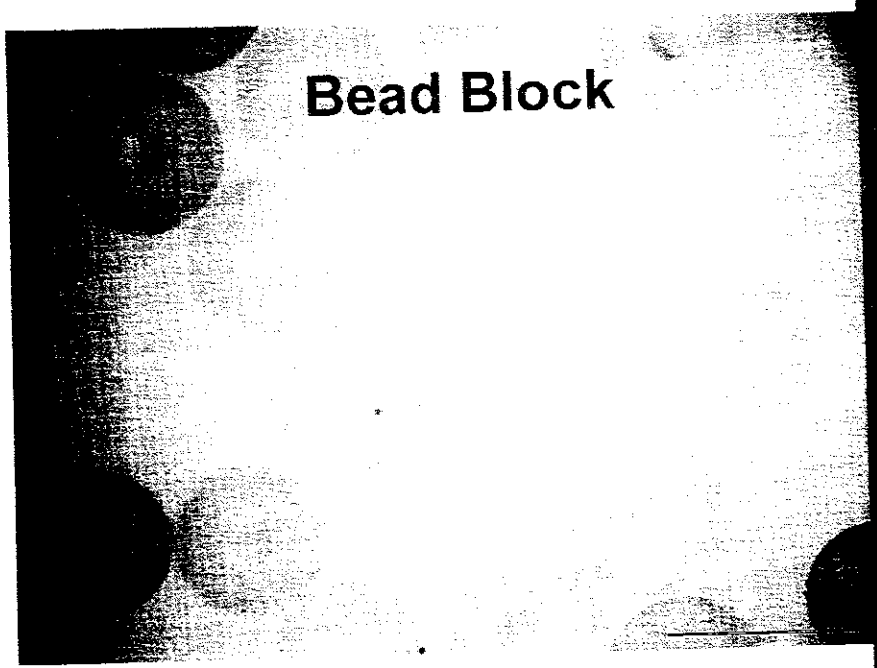
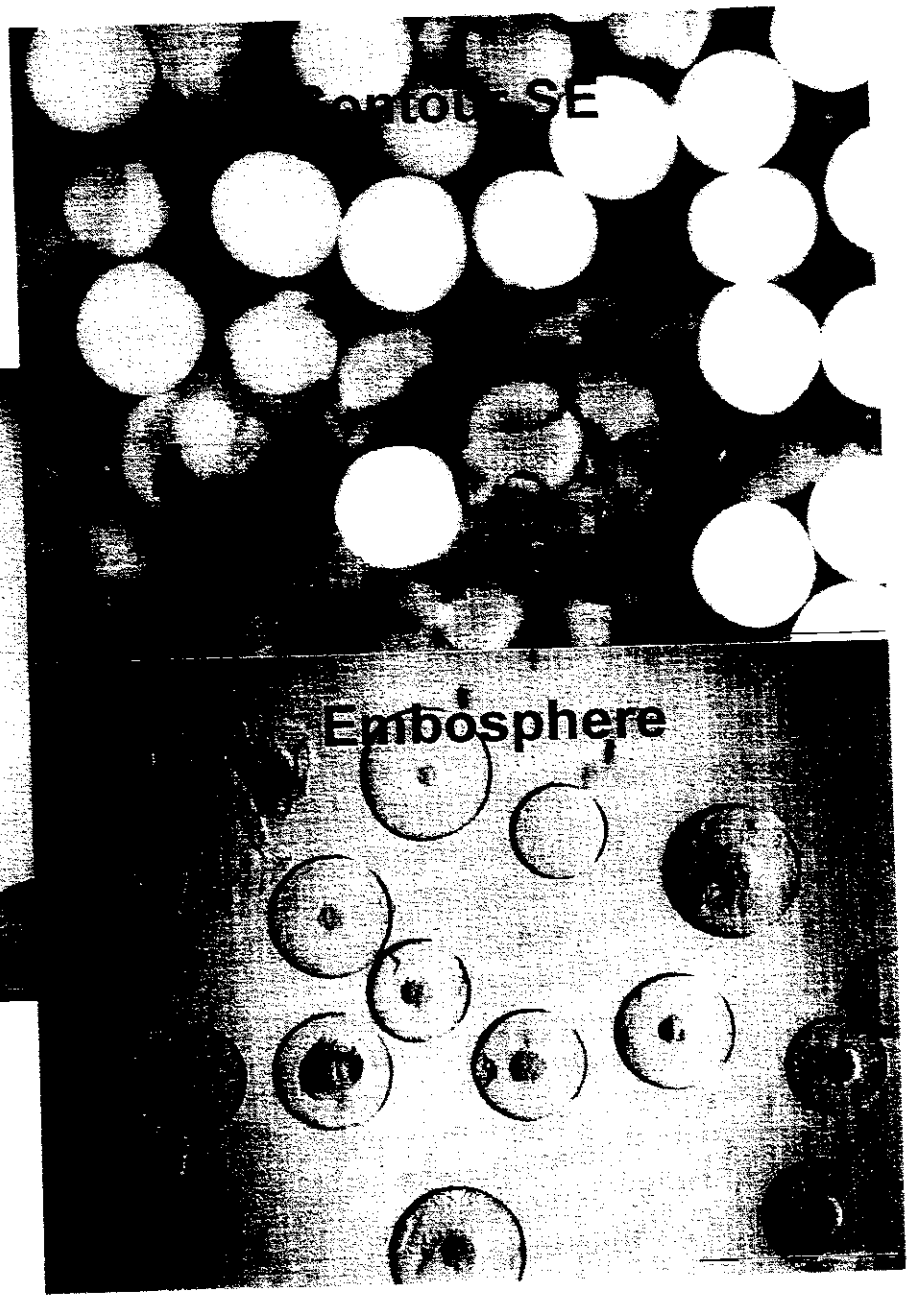
Embolics after mixing to gain suspension





Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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7.4 Lid stock label changes planned for 2005

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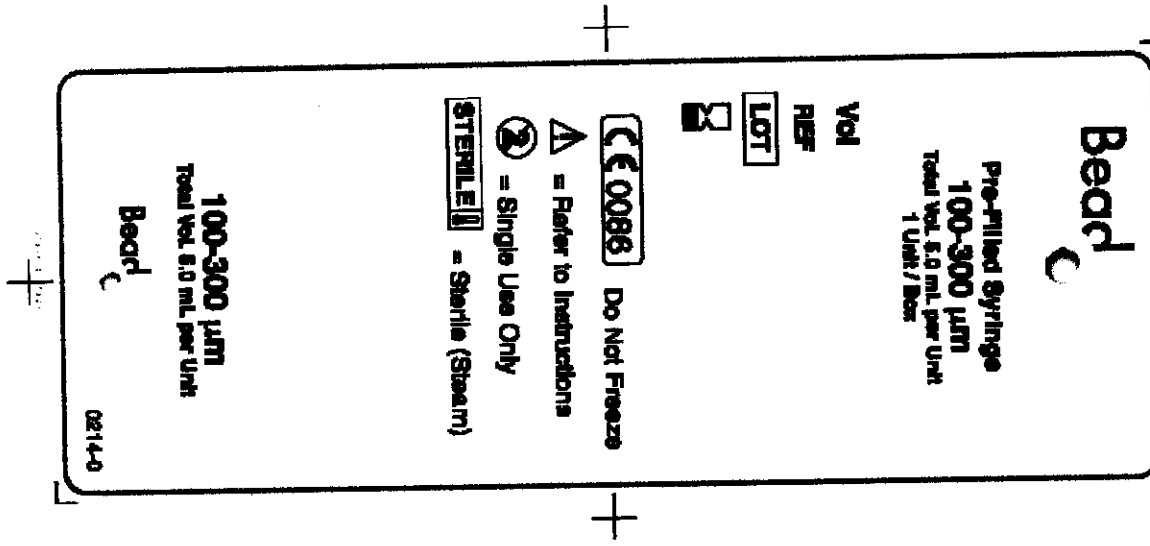
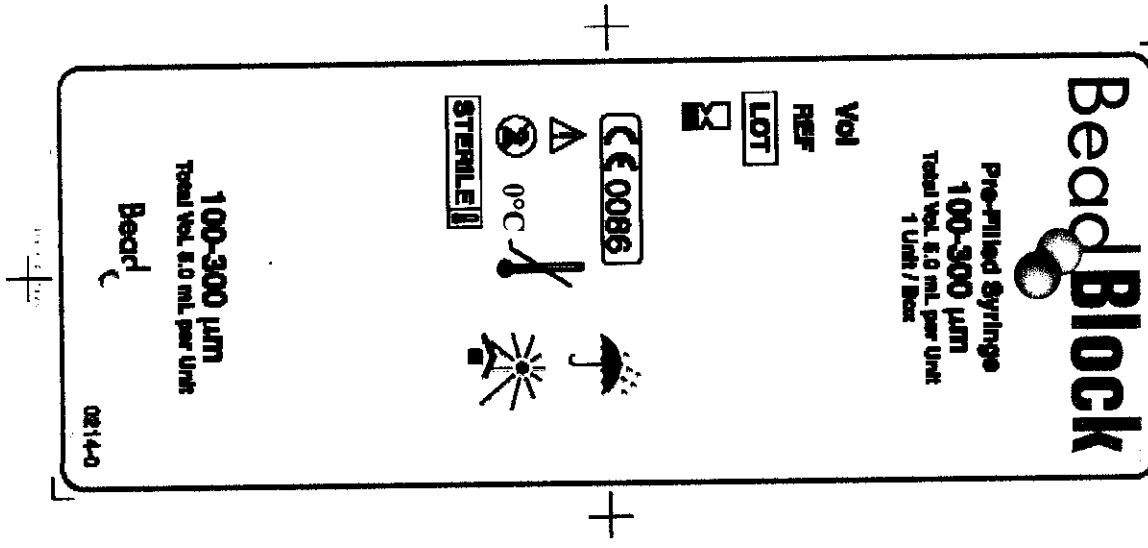
ORIGINAL



AMENDMENTS



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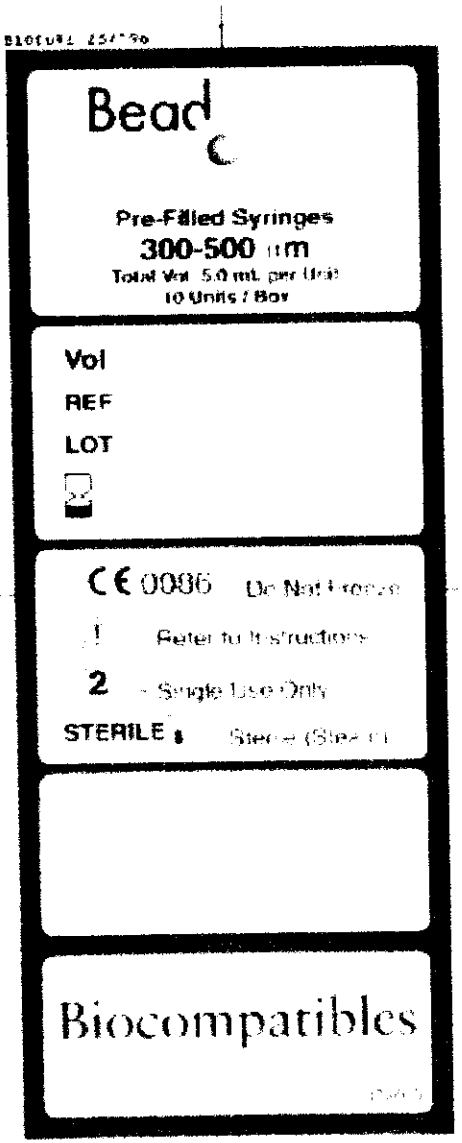
ORIGINAL



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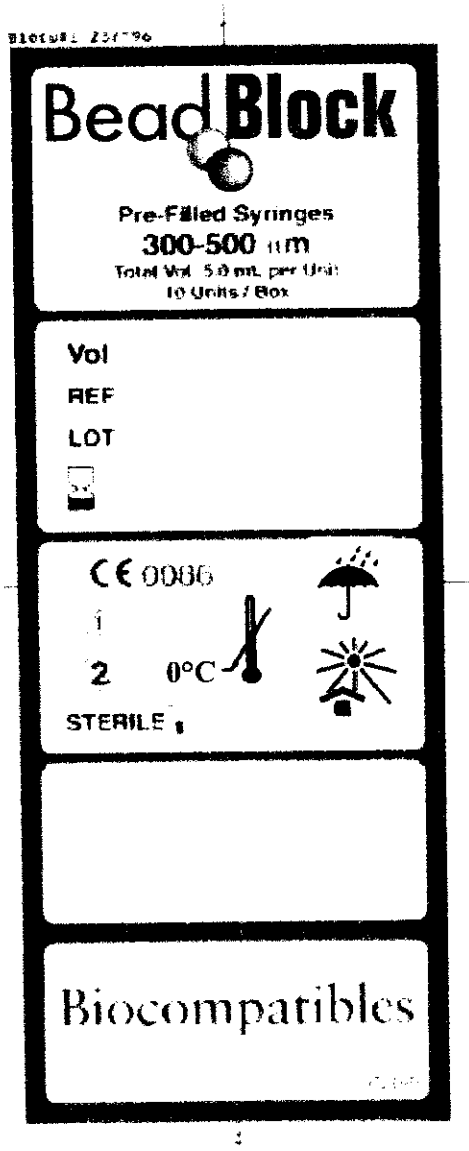

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8.0 Summary of Design Control Activities (Verification & Validation)

8.1 Summary Statement

(b)(4)

[redacted]

GelSpheres™ DHF Elements
• Project Plan • Product Requirements Document • Risk & FMECA Analysis • Design Specifications • Review Notes • Prototype Review • Verification Plans/Reports/Data • Validation Plans/Reports/Data • Labeling • Design Review/Quality Audit(s) • Reference to Released DCR's

8.2 Risk Analysis

In the course of product and process development, Biocompatibles UK Ltd. conducted a risk analysis for Bead Block ™ / GelSpheres™. (b)(4) [redacted]

(b)(4)

[redacted]

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[redacted]

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8.3 Verification Activities

As of the date of filing this pre-market notification all verification and validation activities have been completed.

Tests to confirm conformance with ISO/EN standards are conducted by outside test laboratories recognized by an ISO Notified Body, using protocols defined by those test labs.

Verification and Validation activities for both GelSpheres™ and Bead Block™ have been substantially completed as appropriate in accordance with the verification and validation protocols. Any remaining verification or validation activities will have been successfully completed prior to placing the products into interstate commerce. A copy of these documents are included in Appendix IV of this pre-market notification.

8.3.1 Specific Verification and Validation Activities

8.3.1.1 Biocompatibility

The biocompatibility testing listed in Table 8-1 provides a summary of the testing performed in K023089, as the processes are practically unchanged from K023089, and product specifications are unchanged, no additional biocompatibility testing was necessary:

Biocompatibility Test	***Pass/Fail***
Genotoxicity: *In Vitro* Chromosomal Aberration Study in Mammalian Cells	Pass
Mouse Bone Marrow Micronucleus Study	Pass
In Vitro Hemolysis Study (Modified ASTM-Direct Contact Method)	Pass
ISO Muscle Implantation Study in the Rabbit	Pass
Cytotoxicity Study using the ISO Elution Method	Pass
ISO Sensitization Study in the Guinea Pig	Pass
ISO Acute Intracutaneous Reactivity Study in the Rabbit	Pass
Chronic Toxicity Study in the Rat following Subcutaneous Implantation (13 weeks)	Pass
Subchronic Intravenous Toxicity Study in the Rat (14 day, saline extract)	Pass
Genotoxicity: Bacterial Reverse Mutation Study	Pass
ISO Acute Systemic Toxicity Study in the Mouse (liquid/chemical)	Pass
ISO Surgical Muscle Implantation in the Rabbit (26 weeks)	Pass

Table 8-1 Biocompatibility testing summary

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8.3.2 Process verification

Biocompatibles UK Ltd., conducted process verification and validation in accordance with a series of written protocols (see Appendix IV). Process steps for which data was collected for analysis were determined through an analysis and review of the Risk Analysis and Process FMECA. Data was collected during the course of the verification runs and recorded on the manufacturing routers and included in the Device History File for each verification lot.

(b)(4)

[redacted]

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(b)(4)

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8.3.3 Stability

Biocompatibles UK Ltd., using samples manufactured during the process verifications for GelSpheres™ and Bead Block™ has conducted end product stability testing in accordance with written protocols (b)(4) [redacted]

Stability testing includes samples in real time and aged at 25°± 2°C and 60% RH ± 5% (real time) and samples aged at 57°± 2°C (accelerated aging). At time intervals defined in the protocols, samples are tested/inspected for conformance with product specifications.

8.3.4 Package Integrity

Samples of GelSpheres™/Bead Block™ are taken from the production lots manufactured for process verification purposes and tested for the integrity of the packaging. GelSpheres™, which utilize glass vials are tested to assure the integrity of the vial stopper. Bead Block™ are tested for the integrity of the seal between the Tyvek® lid stock and the polycarbonate tray. Protocols and reports for the package integrity tests are included in Appendix IV.

8.3.5 Sterility

GelSpheres™ Embolic Agent are validated as "Sterile". SAL is 10^{-6} and in accordance with AAMI/ANSI/ISO 11134: Sterilization of health care products-Requirements for validation and routine control-Industrial moist heat sterilization, 2ed.. Sterilization is performed in accordance with EN 554: Sterilization of Medical Devices – validation and Routine Control of Sterilization by Moist Heat. (b)(4) [redacted]

(b)(4) [redacted]

8.3.6 Pyrogenicity

GelSpheres™ and Bead Block™ are validated to be "Non-Pyrogenic" to an end product endotoxin level of <0.06 EU/ML. Pyrogenicity and

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presence of endotoxins are determined using the Kinetic-Chromogenic LAL method. Endotoxin testing is performed by Cambrex, Belgium. Test methods are validated by Cambrex. Validation is conducted using samples from the lots manufactured for the Process Verifications. In addition, each lot of GelSpheres™/Bead Block™ is tested to meet the requirement of <0.06 EU/ML in accordance with the requirements of the FDA 1987 Guidance Document: Guideline on Validation of Limulus Amebocyte Lysate Test as an End Product Endotoxin Test for Human and Animal Parenteral Drugs, Biological Products and Medical Devices. A copy of the test report from the verification lots is included in Appendix II.

8.5 Identification of Changes made to Device Master Record

Drawing numbers and revisions are documented in the Master Device Records which are on file at Biocompatibles UK Ltd..

8.6 Design Review

A Design Review was conducted as required in the Design Control procedure and signed-off by the designated individuals (Attached). Additional Design Review activities will occur on the completion of verification and validation testing.

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DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service
Food and Drug Administration
Memorandum

From: Reviewer(s) - Name(s) [illegible]

Subject: 510(k) Number K042231

To: The Record - It is my recommendation that the subject 510(k) Notification:

- ☐ Refused to accept.
- ☐ Requires additional information (other than refuse to accept).
- ☒ Is substantially equivalent to marketed devices.
- ☐ NOT substantially equivalent to marketed devices.
- ☐ Other (e.g., exempt by regulation, not a device, duplicate, etc.)

K1-SE

Is this device subject to Section 522 Postmarket Surveillance?	☐ YES	☒ NO
Is this device subject to the Tracking Regulation?	☐ YES	☒ NO
Was clinical data necessary to support the review of this 510(k)?	☐ YES	☒ NO
Is this a prescription device?	☒ YES	☐ NO
Was this 510(k) reviewed by a Third Party?	☐ YES	☒ NO
Special 510(k)?	☐ YES	☒ NO
Abbreviated 510(k)? Please fill out form on H Drive 510k/boilers	☐ YES	☒ NO

Truthful and Accurate Statement ☐ Requested ☒ Enclosed

- ☒ A 510(k) summary OR ☐ A 510(k) statement
- ☒ The required certification and summary for class III devices
- ☒ The indication for use form

Combination Product Category (Please see algorithm on H drive 510k/Boilers) N

Animal Tissue Source ☐ YES ☒ NO Material of Biological Origin ☐ YES ☒ NO

The submitter requests under 21 CFR 807.95 (doesn't apply for SEs):

☒ No Confidentiality ☐ Confidentiality for 90 days ☐ Continued Confidentiality exceeding 90 days

Predicate Product Code with class: HCG 882.5950 Class III, Additional Embolization Device

Additional Product Code(s) with panel (optional):

Review: [illegible] (Branch Chief) PRSB (Branch Code) 11/10/04 (Date)

Final Review: Miriam C. Provost (Division Director) 11/12/04 (Date)

for

Revised:4/2/03

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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REVISED:3/14/95

THE 510(K) DOCUMENTATION FORMS ARE AVAILABLE ON THE LAN UNDER 510(K) BOILERPLATES TITLED "DOCUMENTATION" AND MUST BE FILLED OUT WITH EVERY FINAL DECISION (SE, NSE, NOT A DEVICE, ETC.).

"SUBSTANTIAL EQUIVALENCE" (SE) DECISION MAKING DOCUMENTATION

K 042231

Reviewer: [illegible]

Division/Branch: DGRND / PRSB

Device Name: Gelephase Microsphere & Bead Block m.

Product To Which Compared (510(K) Number If Known): K033761

	YES	NO	
1. Is Product A Device	✓		If **NO** = Stop
2. Is Device Subject To 510(k)?	✓		If **NO** = Stop
3. Same Indication Statement?	✓		If **YES** = Go To 5
4. Do Differences Alter The Effect Or Raise New Issues of Safety Or Effectiveness?		✓	If **YES** = Stop **NE**
5. Same Technological Characteristics?	✓		If **YES** = Go To 7
6. Could The New Characteristics Affect Safety Or Effectiveness?		✓	If **YES** = Go To 8
7. Descriptive Characteristics Precise Enough?	✓		If **NO** = Go To 10 If **YES** = Stop **SE**
8. New Types Of Safety Or Effectiveness Questions?			If **YES** = Stop **NE**
9. Accepted Scientific Methods Exist?			If **NO** = Stop **NE**
10. Performance Data Available?			If **NO** = Request Data
11. Data Demonstrate Equivalence?			Final Decision:

Note: In addition to completing the form on the LAN, "yes" responses to questions 4, 6, 8, and 11, and every "no" response requires an explanation.

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.

1. Intended Use: see memo

2. Device Description: Provide a statement of how the device is either similar to and/or different from other marketed devices, plus data (if necessary) to support the statement. Is the device life-supporting or life sustaining? Is the device implanted (short-term or long-term)? Does the device design use software? Is the device sterile? Is the device for single use? Is the device over-the-counter or prescription use? Does the device contain drug or biological product as a component? Is this device a kit? Provide a summary about the devices design, materials, physical properties and toxicology profile if important.

EXPLANATIONS TO "YES" AND "NO" ANSWERS TO QUESTIONS ON PAGE 1 AS NEEDED

1. Explain why not a device:

2. Explain why not subject to 510(k):

3. How does the new indication differ from the predicate device's indication:

4. Explain why there is or is not a new effect or safety or effectiveness issue: (b) (4) [redacted]

5. Describe the new technological characteristics:

6. Explain how new characteristics could or could not affect safety or effectiveness:

7. Explain how descriptive characteristics are not precise enough:

8. Explain new types of safety or effectiveness questions raised or why the questions are not new:

9. Explain why existing scientific methods can not be used:

10. Explain what performance data is needed:

11. Explain how the performance data demonstrates that the device is or is not substantially equivalent:

ATTACH ADDITIONAL SUPPORTING INFORMATION

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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Internal Administrative Form

	YES	NO
1. Did the firm request expedited review?		✓
2. Did we grant expedited review?	NA	
3. Have you verified that the Document is labeled Class III for GMP purposes?	✓	
4. If, not, has POS been notified?	NA	
5. Is the product a device?	✓	✓
6. Is the device exempt from 510(k) by regulation or policy?	✓	
7. Is the device subject to review by CDRH?	✓	✓
8. Are you aware that this device has been the subject of a previous NSE decision?		✓
9. If yes, does this new 510(k) address the NSE issue(s), (e.g., performance data)?	NA	
10. Are you aware of the submitter being the subject of an integrity investigation?		✓
11. If, yes, consult the ODE Integrity Officer.	NA	
12. Has the ODE Integrity Officer given permission to proceed with the review? (Blue Book Memo #I91-2 and Federal Register 90N0332, September 10, 1991.	NA	

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.

510(K) MEMORANDUM

TO: **K04**2231

FROM: Peter L. Hudson, Ph.D.
ODE/DGRND/Plastic and Reconstructive Surgery Devices Branch

DATE: 11/8/04

SUBJ: Gelspheres Microspheres and Bead Block Compressible Microspheres
Biocompatibles U.K. Ltd.
Mr. John Greenbaum
PHONE: 954-680-2548, mobile: 954-309-6715
FAX: 954-680-0161
Email: johngreenbaum@Compuserve.com

Recommendation: Substantially Equivalent
Procode: HCG
Class: III
Regulation Number: 882.5950
Regulation Name: Artificial embolization device

REVIEW:
The sponsor notes that they have submitted this premarket notification for a change in manufacturing sites. The former owner of the 510(k), Biocure, Inc., currently acts as a contract manufacturer to this sponsor. The sponsor now would like to manufacture the product. I asked Ms. Marjorie Shulman whether the sponsor had to submit a 510(k). Her response:

They do not need a 510(k) just for a change in manufacturing sites. However, if a company submitted the file we have to review it. We don't have companies withdrawal the 510(k) and there is no user fee refund. The company might have submitted it because they want the SE in their own name. Please let me know if you need anything else.

(b)(4)

[redacted]

1. **Comparison of the Intended Use/Indications of the Subject Device and Predicate(s)**
Subject Device
Gelspheres™ Microspheres & Bead Block™ Compressible Microspheres is intended for embolization of hypervascular tumors and arteriovenous malformations.

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Predicate device(s)
Gelspheres Microspheres, Biocure, Inc., K023089
Gelspheres Microspheres & Bead Block Compressible Microspheres, Biocompatibles, U.K., Ltd., K033761

Gelspheres™ Microspheres & Bead Block™ Compressible Microspheres is intended for embolization of hypervascular tumors and arteriovenous malformations.

Discussion of whether the intended use/indications are the same
The indications for use are identical and therefore are substantially equivalent.

2. **Comparison of the Technological Characteristics (Design, Materials, Sizes, Features, Shapes, etc.) of the Subject Device and Predicate(s)**

Subject Device
The Gelspheres™ Microspheres and Bead Block™ Compressible Microspheres are preformed soft, deformable microspheres consisting of a polyvinyl alcohol macromer. The microspheres are 85% water and are compressible to approximately 30% their size in diameter. The Bead Block™ microspheres are dyed blue to aid in the visualization of the beads in the delivery syringe. Gelspheres™ are available either undyed or dyed blue. The microspheres can be delivered through micro-catheters in the 1.5-5Fr range. The products are provided sterile in sealed glass bottles (Gelspheres™) or pre-filled syringes (Bead Block™). The Gelspheres™ and the Bead Block™ microspheres differ in the amount of AMPS used: Gelspheres™, dyed and undyed contain (b)(4) [redacted], whereas Bead Block™ microspheres contain (b)(4) [redacted]. Both bead types are provided in the 100 μm to 1200 μm diameter range.

The embolization agents are recommended to be mixed with a non-ionic contrast reagent, e.g., Omnipaque to make a 30-50% by weight, solution.

(b)(4) [redacted]

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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(b)(4)

[redacted]

Catheter compatibility

The two types of beads were tested for compatibility with various microcatheters. The compatibility assessments included:

- Aggregation of the embolic agent in the syringe
- Catheter clogging
- Ease of delivery
- Shape of the embolic agent after injection

The following catheters were assessed:

Catheter I.D. (in./micron)	Micro-catheter
0.024/610 and up	5Fr. Angiodynamics FasTracker® 325
0.021/540	FasTracker® 18

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	Cook 3.0Fr
0.016/420	Prowler® 14
0.013/330	Spinnaker Elite 1.8

The sponsor does not intend to recommend the use of any one type of microcatheter. They will provided the information above to customers to document compatibility with known products.

Predicate Device(s)
Gelspheres Microspheres, Biocure, Inc., K023089
Gelspheres Microspheres & Bead Block Compressible Microspheres, Biocompatibles, U.K., Ltd., K033761

Discussion of whether the subject device has a significant change in technological characteristics
(b)(4) [redacted]
(b)(4) [redacted] Technologically the devices are substantially equivalent.

3. **Comparative Data (*in vitro*, animal and/or clinical)**

Safety Data - Subject Device
The sponsor notes in their Summary of Design Control Activities that because the manufacturing (b)(4) [redacted]
(b)(4) [redacted] was determined to be necessary. The sponsor cites all of the biocompatibility evaluations done in support of K023089.

Safety Data - Predicate Device(s)
A complete list of biocompatibility evaluations, as recommended for permanently implanted medical devices in the ISO 10993 document, was conducted in support of the device in K023089.

Effectiveness Data – Subject Device
(b)(4) [redacted]

Effectiveness Data - Predicate Device(s)
Bead physical characteristics and preclinical animal evaluations were done.

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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Discussion of whether the data demonstrate that the subject device is as safe and effective as the predicate(s)

(b)(4) [redacted]
(b)(4) [redacted] The device is substantially equivalent to the sponsor's own predicate product.

4. **Does the product contain drugs or biologicals?** No.

5. **Sterilization**
Sterilization method: Steam, traditional
Validation method: EN554, AAMI/ISO 11134,
Packaging:
Gelspheres™ are packaged in a sealed glass vial in a solution of (b)(4) [redacted]. The vial contents are sealed using a rubber stopper with metal retaining ring. The vials are placed in cardboard boxes.
Bead Block™ microspheres are packaged in syringes made of polycarbonate with silicone rubber bungs. The syringes are placed in a polycarbonate tray with a Tyvek® lid.

(b)(4) [redacted]

6. **Discussion of Labeling Adequacy**
(Prescription):
Package Insert (page 73, section 7.0)
Carton/Pouch Labels (page 59)

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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(b)(4) [redacted]

(b)(4) [redacted] The list of references contained in the device package insert in this submission is the same as what was previously cleared under K023089. The labeling is substantially equivalent to the predicate product label.

(b)(4) [redacted]

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

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(b)(4) [redacted]

8. **Has sponsor provided all administrative requirements?**
   - Truthful and Accurate Statement – page 8
   - 510(k) Summary – page 10
   - Class III Certification – letter referencing K023089 was provided
   - Indication for Use Page – page 7
   - FDA Establishment Registration Number: 3002124545

9. **Analysis of the Equivalence of the Subject and Predicate(s)**
   The subject device of the application is essentially identical to the sponsor's own predicate products. (b)(4) [redacted] (b)(4) [redacted] (b)(4) [redacted] The sponsor is now manufacturing the product in their own facility and not having the product manufactured for them by the previous 510(k) owner, Biocure.

(b)(4) [redacted] (b)(4) [redacted] The device is substantially equivalent to the predicates identified.

(b)(4) [redacted]

Name 11/8/04 Date

concur
mo 11/12/04

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.

Plastic and Reconstructive Surgery Devices Branch

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

Records processed under FOIA Request #2015-859; Released by CDRH on 04-11-2016.

Pre-market Notification Class III Certification and Summary

PREMARKET NOTIFICATION
CLASS III CERTIFICATION AND SUMMARY
(As Required by 21 CFR 807.94)

I certify that, in my capacity as Director, Regulatory Affairs of Biocompatibles UK LTD. that I have conducted a reasonable search of all information known or otherwise available about the types and causes of safety and/or effectiveness problems that have been reported for GelSpheres/BeadBlock. I further certify that I am aware of the types of problems to which the GelSpheres/BeadBlock is susceptible and that, to the best of my knowledge, the following summary of the types and causes of safety and/or effectiveness problems about GelSpheres/BeadBlock is complete and accurate.

Bibliography attached by reference to 510(k) #K023089. Authorization to reference the file for K023089 has been provided by the original 510K holder and included in the pre-market notification.

John Greenbaum/ For Dr. Alistair Taylor

November 8, 2004
(Date)

K043321
510(k) Number

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

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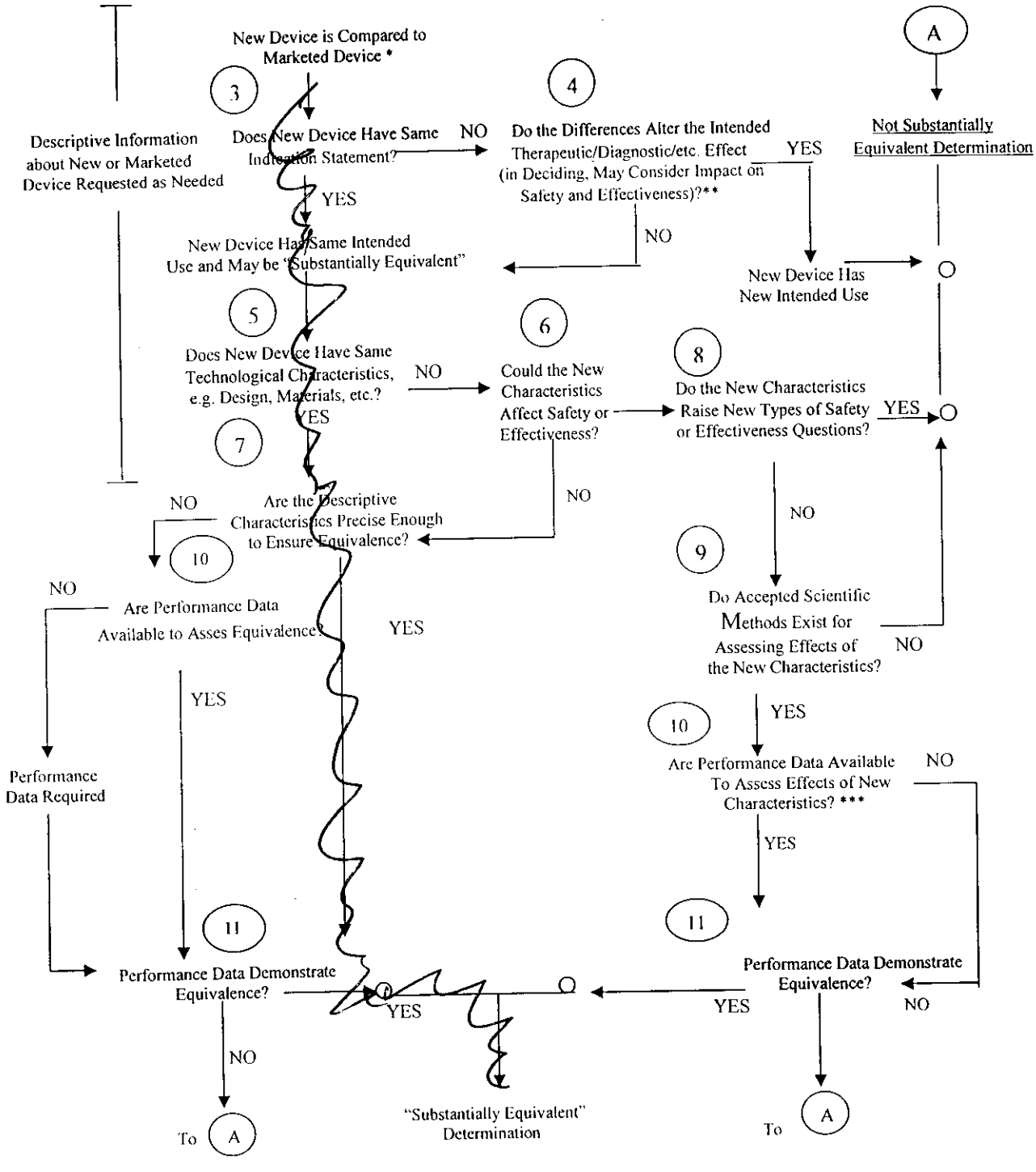
510(k) "SUBSTANTIAL EQUIVALENCE" DECISION-MAKING PROCESS



* 510(k) Submissions compare new devices to marketed devices. FDA requests additional information if the relationship between marketed and "predicate" (pre-Amendments or reclassified post-Amendments) devices is unclear.

** This decision is normally based on descriptive information alone, but limited testing information is sometimes required.

*** Data maybe in the 510(k), other 510(k)s, the Center's classification files, or the literature.

Questions? Contact FDA/CDRH/OCE/DID at CDRH-FOISTATUS@fda.hhs.gov or call 301-796-8118.