DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration
10903 New Hampshire Avenue
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Silver Spring, MD 20993-0002

January 23, 2015

Teva Medical Ltd.
C/O Mr. Roger Gray
VP Quality and Regulatory
Donawa Lifescience Consulting
Piazza Albania 10
00153 ROME, ITALY

Re: K141448
Trade/Device Name: TEVADAPTOR® Closed Drug Reconstitution and Transfer System
Regulation Number: 21 CFR 880.5440
Regulation Name: Intravascular administration set
Regulatory Class: II
Product Code: ONB
Dated: December 22, 2014
Received: December 24, 2014

Dear Mr. Gray:

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. Please note: CDRH does not evaluate information related to contract liability warranties. We remind you, however, that device labeling must be truthful and not misleading.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), it may be subject to 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); medical device reporting (reporting of medical device-related adverse events) (21 CFR 803); 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.

If you desire specific advice for your device on our labeling regulation (21 CFR Part 801), please contact the Division of Industry and Consumer Education at its toll-free number (800) 638-2041 or (301) 796-7100 or at its Internet address http://www.fda.gov/MedicalDevices/ResourcesforYou/Industry/default.htm. Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21CFR Part 807.97). For questions regarding the reporting of adverse events under the MDR regulation (21 CFR Part 803), please go to http://www.fda.gov/MedicalDevices/Safety/ReportaProblem/default.htm for the CDRH's Office of Surveillance and Biometrics/Division of Postmarket Surveillance.

You may obtain other general information on your responsibilities under the Act from the Division of Industry and Consumer Education at its toll-free number (800) 638-2041 or (301) 796-7100 or at its Internet address http://www.fda.gov/MedicalDevices/ResourcesforYou/Industry/default.htm.

Sincerely yours,

for Erin I. Keith, M.S.
Director
Division of Anesthesiology, General Hospital,
Respiratory, Infection Control and
Dental Devices
Office of Device Evaluation
Center for Devices and
Radiological Health

Enclosure

DEPARTMENT OF HEALTH AND HUMAN SERVICES
Food and Drug Administration

Indications for Use

Form Approved: OMB No. 0910-0120
Expiration Date: January 31, 2017
See PRA Statement below.

510(k) Number *(if known)*
K141448

Device Name
TEVADAPTOR Closed Drug Reconstitution and Transfer System

Indications for Use *(Describe)*
TEVADAPTOR is a Closed System Drug Transfer Device (CSTD) that mechanically prohibits the release of the drug in vapor, aerosol or liquid form during preparation and administration, and prevents the introduction of microbial and airborne contaminants into the drug or fluid path, allowing the system to minimize exposure of individuals, healthcare personnel, and the environment to hazardous drugs.

Type of Use *(Select one or both, as applicable)*

☒ Prescription Use (Part 21 CFR 801 Subpart D) ☐ Over-The-Counter Use (21 CFR 801 Subpart C)

CONTINUE ON A SEPARATE PAGE IF NEEDED.

510(k) Summary in accordance with 21 CFR 807.92(c) K141448

Device Name:	TEVADAPTOR® Closed Drug Reconstitution and Transfer System
Type of 510(k) submission:	Abbreviated
Date of Submission:	27 May 2014
Manufacturer:	Teva Medical Ltd., MIGADA Plant North Industrial Zone Kiryat Shmona 10258 ISRAEL
FDA Registration Number:	9611423
Owner/Operator Number:	9001925
510(k) Owner:	Teva Medical Ltd., MIGADA Plant North Industrial Zone Kiryat Shmona 10258 ISRAEL
Phone: **Fax:**	+972 (0)46 908822 +972 (0)39 267865
510(k) Submitter and Contact:	Mr Roger Gray VP Quality and Regulatory Donawa Lifescience Consulting Piazza Albania 10 00153 Rome Italy Phone: +39 06 578 2665 Fax: +30 06 574 3786 Email: rgray@donawa.com
FDA Product Code:	ONB
FDA Regulation Number:	880.5440
FDA Classification Name:	Closed antineoplastic and hazardous drug reconstitution and transfer system
Classification Panel:	General Hospital
Common Name:	Closed System Drug Transfer Device (CSTD)
FDA Classification:	Class II
FDA Identification:	An intravascular administration set is a device used to administer fluids from a container to a patient's vascular system through a needle or catheter inserted into a vein. The device may include the needle or catheter, tubing, a flow regulator, a

drip chamber, an infusion line filter, an I.V. set stopcock, fluid delivery tubing, connectors between parts of the set, a side tube with a cap to serve as an injection site, and a hollow spike to penetrate and connect the tubing to an I.V. bag or other infusion fluid container.

Indications for Use:

TEVADAPTOR® is a Closed System Drug Transfer Device (CSTD) that mechanically prohibits the release of the drug in vapor, aerosol or liquid form during preparation and administration, and prevents the introduction of microbial and airborne contaminants into the drug or fluid path, allowing the system to minimize exposure of individuals, healthcare personnel, and the environment to hazardous drugs.

Device Description:

It is common practice in healthcare facilities to have parenteral drugs reconstituted and compounded into infusion or injection containers according to specific physician's prescriptions. Those operations are normally performed in compounding centers, by or under the supervision of a pharmacist, or in the wards by authorized healthcare personnel.

The TEVADAPTOR® Closed Drug Reconstitution and Transfer System, developed by Teva Medical, is a closed system to be used by pharmacists or other healthcare professionals to prepare drugs, including cytotoxic drugs, for infusion, injection, or instillation.

The TEVADAPTOR® Closed Drug Reconstitution and Transfer System is a system of components that allow the safe reconstitution of liquid or pre-dissolved powder drugs into infusion bags, flexible bottles or syringes. Single, partial or multiple vials can be used for each infusion solution container. The TEVADAPTOR® Closed Drug Reconstitution and Transfer System prevents contamination of the user or the environment by the drug through the use of elastomeric seals and an active carbon filter. Sterility of the drug in the vial is maintained because any air entering the vial during pressure equalization enters through of a hydrophobic acrylic copolymer membrane with a pore size of 0.2 micron.

The components of the TEVADAPTOR® system are:

- Vial Adaptor 20 mm with 13 mm Vial Converter
- Vial Adaptor 28 mm
- Syringe Adaptor
- Spike Port Adaptor
- Connecting Set
- Luer Lock Adaptor

Each of the above component parts is sold separately.

The materials used in the manufacture of the components of the TEVADAPTOR® Closed Drug Reconstitution and Transfer System are, in the main, identical, and processed in an identical manner, to those used in the predicate device TEVADAPTOR® System that was the subject of K071741, cleared by FDA on 24 September 2007. For any materials not previously used, technical and safety information has been assessed.

A risk Assessment was carried out for the TEVADAPTOR® on the basis of ISO 14971:2007 and Teva Medical standard operating procedures. The process included evaluation of the risks and mitigation activities.

A number of bench tests have been carried out to confirm compliance with applicable standards and demonstrate that the subject device meets the criteria for a Closed Drug Reconstitution and Transfer System, in accordance with the requirements of FDA Product Code ONB.

The bench tests carried were:

- Bidirectional flow
- Vial adaptor to syringe adaptor force test
- Vial adaptor to vial force test
- Airtightness test
- Fluid tightness test
- Luer connector test
- Microbiological ingress test
- Filter efficiency test

The results of the bench tests confirm that the TEVADAPTOR® Closed Drug Reconstitution and Transfer System meet the NIOSH and ISOPP definition of a closed system transfer device (CSTD), which is:

> *"A drug transfer device that mechanically prohibits the transfer of environmental contaminants into the system and the escape of hazardous drug or vapor concentrations outside the system."*

The TEVADAPTOR® components are supplied sterile. The devices are sterilized by Ethylene Oxide (EtO), validated according to standard ISO 11135-1:2007, 'Medical devices - Validation and routine control of ethylene oxide sterilization'. The validation was conducted according to the 'overkill' (half cycle) approach. Routine process monitoring is by use of biological indicators. The sterility assurance level (SAL) reached as a result of these processes is 10^{-6}. Residuals of ethylene oxide and ethylene chlorhydrine (ECH) were tested after aeration and found to be in compliance with the requirements of standard ISO 10993-7:2008 for prolonged exposure devices (more than 24 hours and up to 30 days).

A shelf life of three years was established for the components of the TEVADAPTOR® Drug Reconstitution and Transfer System. This shelf life was established by exposing sterilized samples of TEVADAPTOR® components to real-time aging for three years.

With reference to Annex A of ISO 10993-1:2009 and to FDA Blue Book Memo (G95-1), biocompatibility tests performed to demonstrate biocompatibility of the subject devices were:

- Cytotoxicity (ISO 10993-5:2009)
- Sensitization (ISO 10993-10:2009)
- Irritation or intracutaneous reactivity (ISO 10993-10:2009)
- Acute systemic toxicity (ISO 10993-11:2006)
- Haemocompatibility (ISO 10993-4:2006)
- Pyrogenicity (ISO 10993-11:2006)

Material characterization tests were also conducted on the subject device components as follows:

- Determination of extractable species by Infrared spectroscopy for three extracts (PW, IPA and Hexane)
- Physicochemical Tests for Plastics (Non-Aqueous), Non-Volatile Residue
- Physicochemical Tests for Plastics (Aqueous), Non-Volatile Residue
- Determination of Extractable Semi-Volatile Organic Compounds by GC/MS for three extracts (PW, IPA and Hexane)
- Determination of Extractable Elements by Inductively Coupled Plasma/Mass Spectroscopy (ICP/MS)
- Ultra Performance Liquid Chromatography/Mass Spectrometry (UPLC/MS) for three extracts (PW, IPA and Hexane)
- Infusion Equipment for Medical Use, ISO 8536-4:2010, Annex B, Chemical Tests

The conclusion of the biocompatibility and material characterization tests is that the components of the TEVADAPTOR® System are biocompatible, and that the amount of leachables and extractables as identified by the chemical tests does not alter or adversely affect the biocompatibility of the device components.

Comparison with predicate device:

The predicate devices selected for comparison with the TEVADAPTOR® Closed Drug Reconstitution and Transfer System are identified as follows:

Predicate Device 1 (PD 1):	TEVADAPTOR® Closed Drug Reconstitution and Transfer System
510(k) Sponsor:	Teva Medical, Migada, Israel
510(k) Number:	K071741
Clearance Date:	24 September 2007
FDA Product Code:	LHI
Classification Name:	Set, I.V., Fluid Transfer
Regulation No:	880.5440

Predicate Device 2 (PD 2):	BD PhaSeal Closed System Drug Transfer Device
510(k) Sponsor:	Becton Dickinson & Co, New Jersey, USA
510(k) Number:	K123213 and K130197
Clearance Date:	09 January 2013 and 27 February 2013
FDA Product Code:	ONB
Classification Name:	Closed antineoplastic and hazardous drug reconstitution and transfer system
Regulation No:	880.5440

Predicate Device 3 (PD 3):	ChemoLock Closed System Drug Transfer Device
510(k) Sponsor:	ICU Medical Inc., Utah, USA
510(k) Number:	K131549
Clearance Date:	26 July 2013
FDA Product Code:	ONB
Classification Name:	Closed antineoplastic and hazardous drug reconstitution and transfer system
Regulation No:	880.5440

The subject device and one or more of the predicate devices share many identical features and parameters. Differences exist in the following areas:

- The subject device includes an additional, with respect to PD 1, Vial Adaptor designed to fit vials with a 28 mm neck size.
- The following aspects of the subject device Vial Adaptor are modified from that of PD 1:
    - The connecting lug windows are closer to the body of the component;
    - The length of the connecting lugs is reduced;
    - The spike slit is longer.
- Pressure equalization in the subject device during reconstitution and withdrawal of drug from a vial is achieved by means of a double filter venting mechanism, instead if by an internal balloon, as is the case with PD 2 and PD 3.

Substantial Equivalence Conclusion:

Based on the information contained in this submission, it is concluded that the TEVADAPTOR®**,** Closed Drug Reconstitution and Transfer System is substantially equivalent to the identified predicate devices already in interstate commerce within the USA.