

JUN 16 1998

510K Notification
Rockwell Medical Supply, LLC. Dri-Sate Acid Concentrate Mixes
March 10th, 1998

510K(k) SUMMARY

SUBMITTER: Rockwell Medical, LLC.
Rockwell Medical Supply, LLC.
28025 Oakland Oaks
Wixom, MI 48393
Phone: 810-546-0040

DATE PREPARED: March 10th, 1998

DEVICE NAME: Dri-Sate Acid Concentrate Mix

CLASSIFICATION NAMES: Concentrate Solutions for Hemodialysis
Accessories to Hemodialysis

PREDICATE DEVICE: Dial Medical, Inc. Acetate-Based
Concentrate

Device Description:

The Rockwell Medical Supply, LLC. Dri-Sate Acid Concentrate Mixes / hemodialysis concentrate solutions and powders contain salt, sugar, and non-sugar and water containing solutions and powders are formulated and intended for use in hemodialysis when mixed or proportioned with the appropriate volume of purified water and bicarbonate solution/powder. These solutions and powders when proportioned/ mixed with pre-treated or purified water meeting or exceeding AAMI Standards, may be used in conventional and commercially available hemodialysis machines or monitors as a hemodialysis solution. The hemodialysis concentrate solutions and powders presented in this 510K Notification are intended to be used in three stream hemodialysis machines in which an acidified concentrate is proportioned into one stream, a bicarbonate, chloride and sodium concentrate solution which has been prepared by mixing the powder with a specified volume of water and glacial acetic acid is proportioned into the second stream of the hemodialysis machine, and water is proportioned into the third stream. These three streams are then mixed to prepare a final proportioned hemodialysis solution. These types of a final hemodialysis solutions are commonly referred to as "Bicarbonate Hemodialysis Solutions." These proportioned hemodialysis solutions are then heated to body temperature and then perfused through the dialysis fluid compartment of artificial kidneys or hemodialyzers. These bicarbonate hemodialysis solutions are separated from the patient's blood by means of a semi-permeable cellulosic or non-cellulosic membrane which serves as a molecular weight selective barrier to the passage of molecules beyond a certain molecular weight. The molecular weigh cut-off of each type of membrane may vary depending on the membrane type, manufacturing process, etc. The semi-permeable membrane in a hemodialyzer permits the passage of smaller molecular weight (less than 5,000 daltons for conventional cellulosic membranes), ionized and non-ionized molecules, waste products and toxins (i.e. blood urea nitrogen, creatinine, potassium, etc.) contained in the patient's blood circulating through the dialyzer, to pass through the semi-permeable membrane into the bicarbonate hemodialysis solutions, exit the hemodialyzer, enter the

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hemodialysis monitor and exit the monitor and are ultimately discarded. The ionic and molecular composition of the hemodialysis solution establishes the concentration gradient between the blood and the hemodialysis solution passing through the hemodialyzer which permits the effective removal of waste products and toxins found in excess in the patient's blood during acute and end-stage renal failure.

Since different patients have different requirements for the removal rates and quantities of various molecules and toxins (i.e. blood urea nitrogen, creatinine, potassium, phosphate, magnesium, chloride, sodium calcium water, etc.) in acute and chronic renal failure, it necessitates having a variety of different bicarbonate containing hemodialysis solutions to satisfy the needs of all acute and end-stage renal failure patients. In addition, there a number of different types of hemodialysis machines which have different proportioning rates. The concentrate mixes and solutions presented in this 510K Notification are designed or formulated to be used with hemodialysis machines that proportion according to the following dilution ratios:

TABLE I

Stream 1	Stream 2 Acidifier Concentrate Proportioning Ratios	Stream 3: Bicarbonate Concentrate Proportioning Ratios
Water	1:35.83 or 1:44.00 or 1:34.00	1:19.13 or 1:27.57 or 1:25.16

It is for these reasons that a manufacturer of these hemodialysis solutions and powders must provide a number of different formulations to contain varying concentrations of the various molecular components. The concentrations of these various molecular components are varied in the final hemodialysis solution within physiological and non-physiological ranges to permit the efficient removal of lack thereof from the patient's blood during hemodialysis. Please refer to the Labeling Section of this 510K for a complete listing of each formulation.

Predicate Devices:

The Rockwell Medical Supply, LLC. Concentrate Solutions for Acetate Dialysate are substantially equivalent to the Renal Systems Sta-Pak acid component of the bicarbonate hemodialysis bath concentrate solutions / powders.

Examination of the information pertaining to the Rockwell Medical Supply, LLC. Acetate hemodialysis concentrate for bicarbonate hemodialysis demonstrates that this device is substantially equivalent in composition, intended use, packaging and labeling to other hemodialysis solutions and powders currently approved for commercial distribution in the United States by the FDA. There are no significant differences between these marketed products and our proposed device.

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TABLE I

PREDICATE DEVICE

Device Name	Renal Systems Hemodialysis Concentrate Solutions
Intended Use	Renal Systems Sta-Pak Bicarbonate Hemodialysis Bath Concentrate Solutions & Powders
510K Document Number	Unknown
Approval Date	Unknown
FDA Regulatory Class	II

Intended Use:

The Rockwell Medical Supply LLC. Dri-Sate Acid Concentrate Solutions and powders for Bicarbonate Dialysate are indicated for use in acute and chronic hemodialysis and to be used with the appropriate hemodialysis machine/ monitor and bicarbonate concentrate.

This indication statement is essentially the same as the indication statement for the predicate device.

Technological Characteristics:

Comparing the proposed device to the predicate device, both devices utilize the same range of chemical compositions, packaging and formulations. There are no significant differences.

Summary of Non-Clinical Tests:

In vitro testing was performed was performed to determine the chemical composition and range of composition.. The results of these tests confirmed that the proposed device is substantially equivalent to the proposed device for these parameters.

Clinical Test Results:

Clinical testing was not performed

Conclusions:

Testing performed on the Rockwell Medical LLC Dri-Sate Acid Concentrate Solutions and Powders for Bicarbonate Dialysate indicates that it is safe, effective, and performs as well as the predicate device, when used in accordance with the instructions for use.

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Food and Drug Administration
9200 Corporate Boulevard
Rockville MD 20850Rockwell Medical Supply LLC
c/o Jeffrey R. Shideman, Ph.D.
International Medical Products, Inc.
4503 Moorland Avenue
Minneapolis, MN 55435Re: K981003
Dri-Safe Acid Concentrate Mixes
Dated: March 10, 1998
Received: March 18, 1998
Regulatory Class: II
21 CFR 876.5820/Procode: 78 KPO

Dear Dr. Shideman:

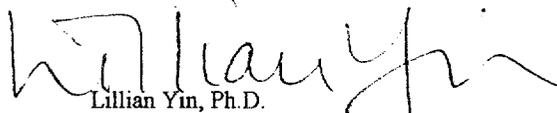
We have reviewed your Section 510(k) notification of intent to market the device referenced above and we have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments, or to devices that have been reclassified in accordance with the provisions of the Federal Food, Drug, and Cosmetic Act (Act). 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 (Premarket Approval), it may be subject to such additional controls. Existing major regulations affecting your device can be found in the Code of Federal Regulations, Title 21, Parts 800 to 895. A substantially equivalent determination assumes compliance with the Current Good Manufacturing Practice requirements, as set forth in the Quality System Regulation (QS) for Medical Devices: General regulation (21 CFR Part 820) and that, through periodic QS inspections, the Food and Drug Administration (FDA) will verify such assumptions. Failure to comply with the GMP regulation may result in regulatory action. In addition, FDA may publish further announcements concerning your device in the Federal Register. Please note: this response to your premarket notification submission does not affect any obligation you might have under sections 531 through 542 of the Act for devices under the Electronic Product Radiation Control provisions, or other Federal laws or regulations.

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

If you desire specific advice for your device on our labeling regulation (21 CFR Part 801 and additionally 809.10 for in vitro diagnostic devices), please contact the Office of Compliance at (301) 594-4613. 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" (21 CFR 807.97). Other general information on your responsibilities under the Act may be obtained from the Division of Small Manufacturers Assistance at its toll-free number (800) 638-2041 or (301) 443-6597 or at its Internet address "<http://www.fda.gov/cdrh/dsma/dsmamain.html>".

Sincerely yours,



Lillian Yin, Ph.D.
Director, Division of Reproductive,
Abdominal, Ear, Nose and Throat
and Radiological Devices
Office of Device Evaluation
Center for Devices and
Radiological Health

Enclosure

510(k) Number (if known): K981003

Device Name: Rockwell Medical Supply, LLC Dri-Sate Acid Concentrate Mixe

Indications For Use:

The Rockwell Medical Supply LLC. Dri-Sate Acid Concentrate Solutions and powders for Bicarbonate Dialysate are indicated for use in acute and chronic hemodialysis and to be used with the appropriate hemodialysis machine/ monitor and bicarbonate concentrate.

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

Concurrence of CDRH, Office of Device Evaluation (ODE)

Robert P. Rathling
(Division Sign-Off)
Division of Reproductive, Abdominal, ENT,
and Radiological Devices
510(k) Number K981003

Prescription Use
(Per 21 CFR 801.109)

OR

Over-The-Counter Use