



Catalyst OrthoScience, Inc
Dale Davison
Sr VP-Manufacturing and Product Development
14710 Tamiami Trail North, Suite 102
Naples, Florida 34110

June 23, 2022

Re: K213349

Trade/Device Name: Catalyst R1 Reverse Shoulder System
Regulation Number: 21 CFR 888.3660
Regulation Name: Shoulder joint metal/polymer semi-constrained cemented prosthesis
Regulatory Class: Class II
Product Code: PHX, HSD
Dated: May 20, 2022
Received: May 23, 2022

Dear Dale Davison:

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. Although this letter refers to your product as a device, please be aware that some cleared products may instead be combination products. The 510(k) Premarket Notification Database located at <https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfpmn/pmn.cfm> identifies combination product submissions. 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) for devices or postmarketing safety reporting (21 CFR 4, Subpart B) for combination products (see <https://www.fda.gov/combination-products/guidance-regulatory-information/postmarketing-safety-reporting-combination-products>); good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820) for devices or current good manufacturing practices (21 CFR 4, Subpart A) for combination products; and, if applicable, the electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR 1000-1050.

Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21 CFR Part 807.97). For questions regarding the reporting of adverse events under the MDR regulation (21 CFR Part 803), please go to <https://www.fda.gov/medical-devices/medical-device-safety/medical-device-reporting-mdr-how-report-medical-device-problems>.

For comprehensive regulatory information about medical devices and radiation-emitting products, including information about labeling regulations, please see Device Advice (<https://www.fda.gov/medical-devices/device-advice-comprehensive-regulatory-assistance>) and CDRH Learn (<https://www.fda.gov/training-and-continuing-education/cdrh-learn>). Additionally, you may contact the Division of Industry and Consumer Education (DICE) to ask a question about a specific regulatory topic. See the DICE website (<https://www.fda.gov/medical-devices/device-advice-comprehensive-regulatory-assistance/contact-us-division-industry-and-consumer-education-dice>) for more information or contact DICE by email (DICE@fda.hhs.gov) or phone (1-800-638-2041 or 301-796-7100).

Sincerely,

For Jiping Chen, M.D., Ph.D., M.P.H.
Acting Division Director
DHT6A: Division of Joint Arthroplasty Devices
OHT6: Office of Orthopedic Devices
Office of Product Evaluation and Quality
Center for Devices and Radiological Health

Enclosure

Indications for Use

510(k) Number (if known)

K213349

Device Name

Catalyst R1 Reverse Shoulder System

Indications for Use (Describe)

The Catalyst R1 Reverse Shoulder System is a reverse total shoulder replacement for patients with a functional deltoid muscle and a grossly deficient rotator cuff joint suffering from pain and dysfunction due to:

- Severe arthropathy with a grossly deficient rotator cuff;
- Previously failed joint replacement with a grossly deficient rotator cuff;
- Fracture of glenohumeral joint from trauma or pathologic conditions of the shoulder including humeral head fracture, displaced 3- or 4-part fractures of proximal humerus, or reconstruction after tumor resection;
- Bone defect in proximal humerus;
- Non-inflammatory degenerative disease including osteoarthritis and avascular necrosis of the natural humeral head and/or glenoid;
- Inflammatory arthritis including rheumatoid arthritis;
- Correction of functional deformity

The humeral stems are intended for cemented or uncemented applications.

The glenoid baseplate is intended for uncemented use with the addition of screws for fixation.

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.

This section applies only to requirements of the Paperwork Reduction Act of 1995.

DO NOT SEND YOUR COMPLETED FORM TO THE PRA STAFF EMAIL ADDRESS BELOW.

The burden time for this collection of information is estimated to average 79 hours per response, including the time to review instructions, search existing data sources, gather and maintain the data needed and complete and review the collection of information. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden, to:

Department of Health and Human Services
Food and Drug Administration
Office of Chief Information Officer
Paperwork Reduction Act (PRA) Staff
PRASStaff@fda.hhs.gov

"An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB number."

510(k) Summary

Prepared: May 20, 2022

Submitter: Catalyst OrthoScience, Inc.
14710 Tamiami Trail North, Suite 102
Naples, FL 34110

Contact: Dale Davison
Sr. VP of Manufacturing & Product Development
Catalyst OrthoScience, Inc.
1-239-325-9976 ext. 102
ddavison@catalystortho.com

Proprietary Name: Catalyst R1 Reverse Shoulder System

Common Name: Shoulder Prosthesis

Classification Name: 21 CFR 888.3660 - Shoulder joint metal/polymer semi-constrained cemented prosthesis

21 CFR 888.3690 – Shoulder joint humeral (hemi-shoulder) metallic uncemented prosthesis

Regulatory Class: Class II

Product Code: PHX – Shoulder Prosthesis, Reverse Configuration

HSD – Shoulder Prosthesis, Hemi-, Humeral, Metallic, Uncemented

Primary Predicate: Encore Medical (DJO) Altivate Reverse Shoulder System (K190290)

Device Description:

The Catalyst R1 Reverse Shoulder System is a total shoulder prosthesis designed for use in patients with a non-functional rotator cuff. The articulation of this reverse design is inverted compared to a traditional anatomic total shoulder prosthesis, where the articulating sphere is on the glenoid side of the joint, and the mating insert is fixed into the humeral stem implant.

The Catalyst R1 Reverse Shoulder System was previously cleared per K202611 and modified to add semi-constrained polyethylene inserts per K211991. This submission is to add humeral spacers to the R1 Reverse Shoulder System. The humeral spacers allow for a height extension of the humeral stems cleared in K202611. These humeral spacers are an additional option and are compatible with all components within the Catalyst R1 Reverse Shoulder System.

Intended Use / Indications For Use:

The Catalyst R1 Reverse Shoulder System is a reverse total shoulder replacement for patients with a functional deltoid muscle and a grossly deficient rotator cuff joint suffering from pain and dysfunction due to:

- Severe arthropathy with a grossly deficient rotator cuff;
- Previously failed joint replacement with a grossly deficient rotator cuff;
- Fracture of glenohumeral joint from trauma or pathologic conditions of the shoulder including humeral head fracture, displaced 3- or 4-part fractures of proximal humerus, or reconstruction after tumor resection;
- Bone defect in proximal humerus;
- Non-inflammatory degenerative disease including osteoarthritis and avascular necrosis of the natural humeral head and/or glenoid;
- Inflammatory arthritis including rheumatoid arthritis;
- Correction of functional deformity

The humeral stems are intended for cemented or uncemented applications.

The glenoid baseplate is intended for uncemented use with the addition of screws for fixation.

Comparison of Technologies:

The Catalyst R1 Reverse Shoulder System with humeral spacers are substantially equivalent to the predicate device regarding intended use and indications, material, technological characteristics, performance tests and design intent. Any noted differences do not raise different questions of safety and effectiveness.

Performance Data / Non-Clinical Testing:

Construct fatigue tests were completed, and the results of these tests indicate that the performance of the Catalyst R1 Reverse Shoulder supports determination of substantial equivalence to the predicate device.

Clinical Testing:

Clinical testing was not necessary to demonstrate substantial equivalence of the Catalyst R1 Reverse Shoulder System with humeral spacer to the predicate device.

Conclusions

The Catalyst R1 Reverse Shoulder System with humeral spacers is substantially equivalent to the predicate device. The subject device has the same design features, uses the same material, has the same intended use and indications, and the same design intent as the predicate device. Any noted differences do not raise different questions of safety and effectiveness, nor are there new technological issues. The tests performed and results indicate that the subject device is substantially equivalent to the predicate device.