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MEMO

DATE: 25 OCT 2023
 TO:
 FROM: Adam Shallenberg, P.E., Assoc. Director, Hip & Cement Engineering
 SUBJECT: Nickel Content in Enovis Titanium Hip Implants

This memo serves to document that there is no nickel content in Enovis titanium hip implants. This applies to the following product families:

- EMPOWR Acetabular cups
- EMPOWR Acetabular Bone Screws
- Exprt Precision System: Revision Hip
- TaperFill femoral stems
- EMPOWR blade femoral stems
- Linear femoral stems
- Revelation & Revelation MicroMax
- TaperFill femoral stems
- FMP acetabular cups
- Bone Screw

DJO manufactures titanium implants out of Ti-6Al-4V per ASTM F1472 or ASTM F136. Neither titanium alloy includes nickel in the chemical composition as shown in the tables below.

ASTM F1472-14 Chemical Requirements		ASTM F136-13 Chemical Requirements	
Element	Composition, %	Element	Composition, %
Nitrogen, max	0.05	Nitrogen, max	0.05
Carbon, max	0.08	Carbon, max	0.08
Hydrogen, max	0.015	Hydrogen, max	0.012
Iron, max	0.30	Iron, max	0.25
Oxygen, max	0.20	Oxygen, max	0.13
Aluminum	5.5-6.75	Aluminum	5.5-6.5
Vanadium	3.5-4.5	Vanadium	3.5-4.5
Yttrium, max	0.005	Titanium	Balance
Titanium	Balance		