

# MEMO

DJO Surgical  
 A DJO Global Company  
 9800 Metric Boulevard  
 Austin, TX 78758-5445  
 T 512.832.9500  
 DJOglobal.com

DATE: 22 Jan 2018  
 TO:  
 FROM: Adam Shallenberg, P.E., Engineering Manager, Hips  
 SUBJECT: Nickel Content in DJO Surgical Titanium Hip Implants

*Adam S*  
 22 JAN 2018

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

- TaperFill femoral stems
- Linear femoral stems
- FMP acetabular cups
- Bone screws

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		