



## Implantable Metallic Biomaterials for Medical and Surgical Devices

### 1. SPECIALTY STEELS

#### Material Designation

Fe-18Cr-14Ni-2.5Mo  
 Fe-18Cr-12.5Ni-2.5Mo, Cast  
 Fe-21Cr-10Ni-3.5Mn-2.5Mo  
 Fe-22Cr-12.5Ni-5Mn-2.5Mo  
 Fe-23Mn-21Cr-1Mo-1N

#### Common Name

Trade Name  
 316 L Stainless Steel  
 316 L Stainless Steel  
 "REX 734"  
 "XM-19"  
 "108"

#### UNS

Designation  
 S31673  
 Unassigned  
 S31675  
 S20910  
 S29108

#### ASTM

Standard  
 ASTM F 138  
 ASTM F 745  
 ASTM F 1586  
 ASTM F 1314  
 ASTM F 2229

#### ISO

Standard  
 ISO 5832-1  
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 ISO 5832-9  
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### 2. COBALT BASE ALLOYS

#### Material Designation

Co-28Cr-6Mo Casting Alloy  
 Co-28Cr-6Mo Wrought Alloy #1  
 Co-28Cr-6Mo Wrought Alloy #2  
 Co-28Cr-6Mo Wrought Alloy #3  
 Co-20Cr-15W-10Ni-1.5Mn  
 Co-20Ni-20Cr-5Fe-3.5Mo-3.5W-2Ti  
 Co-19Cr-17Ni-14Fe-7Mo-1.5Mn  
 Co-20Cr-15Ni-15Fe-7Mo-2Mn  
 Co-35Ni-20Cr-10Mo

#### Common Name

Trade Name  
 Cast CoCrMo  
 Wrought CoCrMo, Alloy 1  
 Wrought CoCrMo, Alloy 2  
 Wrought CoCrMo, "GADS"  
 "L-605"  
 "Syncoben"  
 Grade 2 "Phynox"  
 Grade 1 "Elgiloy"  
 "35N"

#### UNS

Designation  
 R30075  
 R31537  
 R31538  
 R31539  
 R30605  
 R30563  
 R30008  
 R30003  
 R30035

#### ASTM

Standard  
 ASTM F 75  
 ASTM F 1537  
 ASTM F 1537  
 ASTM F 1537  
 ASTM F 90  
 ASTM F 563  
 ASTM F 1058  
 ASTM F 1058  
 ASTM F 562

#### ISO

Standard  
 ISO 5832-4  
 ISO 5832-12  
 ISO 5832-12  
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 ISO 5832-5  
 ISO 5832-8  
 ISO 5832-7  
 ISO 5832-7  
 ISO 5832-6

### 3. TITANIUM AND TITANIUM ALLOYS

#### Material Designation

Ti CP-1  
 Ti CP-2  
 Ti CP-3  
 Ti CP-4  
 Ti-3Al-2.5V  
 Ti-5Al-2.5Fe  
 Ti-6Al-4V  
 Ti-6Al-4V, Cast  
 Ti-6Al-4V ELI  
 Ti-6Al-7Nb  
 Ti-15Mo  
 Ti-12Mo-6Zr-2Fe\*  
 Ti-11.5Mo-6Zr-4.5Sn  
 Ti-15Mo-5Zr-3Al  
 Ti-13Nb-13Zr\*  
 Ti-45Nb  
 Ti-35Nb-7Zr-5Ta\*

#### Common Name (Alloy Classification)

CP-1 (Alpha)  
 CP-2 (Alpha)  
 CP-3 (Alpha)  
 CP-4 (Alpha)  
 Ti-3Al-2.5V (Alpha/Beta)  
 Tikrutan (Alpha/Beta)  
 Ti-6Al-4V (Alpha/Beta)  
 Ti-6Al-4V (Alpha/Beta)  
 Ti-6Al-4V ELI (Alpha/Beta)  
 Ti-6Al-7Nb (Alpha/Beta)  
 Ti-15Mo (Metastable Beta)  
 "TMZF" (Metastable Beta)  
 "Beta 3" (Metastable Beta)  
 Ti-15Mo-5Zr-3Al (Metastable Beta)  
 Ti-13Nb-13Zr (Metastable Beta)  
 Ti-45Nb (Metastable Beta)  
 "TiOsteum" (Metastable Beta)

#### UNS

Designation  
 R50250  
 R50400  
 R50550  
 R50700  
 R56320  
 Unassigned  
 R56400  
 R56406  
 R56401  
 R56700  
 R58150  
 R58120  
 R58030  
 Unassigned  
 R58130  
 R58450  
 R58350

#### ASTM

Standard  
 ASTM F 67  
 ASTM F 67  
 ASTM F 67  
 ASTM F 67  
 ASTM F 2146  
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 ASTM F 1472  
 ASTM F 1108  
 ASTM F 136  
 ASTM F 1295  
 ASTM F 2066  
 ASTM F 1813  
 AMS-T-9046  
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 ASTM F 1713  
 ASTM B 348  
 F-04.12.23

#### ISO

Standard  
 ISO 5832-2  
 ISO 5832-2  
 ISO 5832-2  
 ISO 5832-2  
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 ISO 5832-10  
 ISO 5832-3  
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 ISO 5832-3  
 ISO 5832-11  
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 ISO 5832-14  
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### 4. SPECIALTY METALLIC BIOMATERIALS

#### Material Designation

Ta, Unalloyed, Cast  
 Zr-2.5Nb  
 Ni-45Ti

#### Common Name

Trade Name  
 Unalloyed Tantalum (Alpha)  
 "Zircadyne" 705  
 Nitinol (Intermetallic)

#### UNS

Designation  
 R05200  
 R60901  
 N01555

#### ASTM

Standard  
 ASTM F 560  
 ASTM F 2384  
 ASTM F 2063

#### ISO

Standard  
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#### Notes and references:

1. Material designations with asterisks are patented. Common names in quotation marks may be proprietary or registered trademarks.
2. Information in italics refers to ASTM task groups (standards "in progress"), or other standards organizations such as SAE.
3. "Annual Book of ASTM Standards 2009", Vol 13.01, ASTM, West Conshohocken PA USA, [www.astm.org](http://www.astm.org).
4. "Metals and Alloys in the Unified Numbering System", 11th Edition, ASTM, West Conshohocken PA USA, [www.astm.org](http://www.astm.org).
5. "Stahlschlüssel (Key to Steels)", Verlag Stahlschlüssel Wegst GmbH, D-71672 Marbach, Germany
6. Not all of the materials in this cross-reference table are manufactured by or offered for sale by ATI.