

Standards of Titanium Products [Commercially-Pure Titanium/Corrosion-Resistant Titanium Alloys]

Classification	Standard	Chemical composition [mass%]										Tensile properties		
		C	H	O	N	Fe	Pd	Co	Ru	Ni	Ti	0.2%proof stress [MPa]	Tensile strength [MPa]	Elongation [%]
Commercially-Pure titanium	ASTM/ASME Grade1	≤0.08	≤0.015	≤0.18	≤0.03	≤0.20	—	—			rem.	138—310	≥240	≥24
	ASTM/ASME Grade2	≤0.08	≤0.015	≤0.25	≤0.03	≤0.30	—	—			rem.	275—450	≥345	≥20
	ASTM/ASME Grade3	≤0.08	≤0.015	≤0.35	≤0.05	≤0.30	—	—			rem.	380—550	≥450	≥18
	ASTM/ASME Grade4	≤0.08	≤0.015	≤0.40	≤0.05	≤0.50	—	—			rem.	483—655	≥550	≥15
	JIS Class 1	≤0.08	≤0.013	≤0.15	≤0.03	≤0.20	—	—			rem.	≥165	270—410	≥27
	JIS Class 2	≤0.08	≤0.013	≤0.20	≤0.03	≤0.25	—	—			rem.	≥215	340—510	≥23
	JIS Class 3	≤0.08	≤0.013	≤0.30	≤0.05	≤0.30	—	—			rem.	≥345	480—620	≥18
	JIS Class 4	≤0.08	≤0.013	≤0.40	≤0.05	≤0.50	—	—			rem.	≥485	550—750	≥15
Corrosion-resistant titanium alloys	ASTM/ASME Gr.17	≤0.08	≤0.015	≤0.18	≤0.03	≤0.20	0.04—0.08	—			rem.	138—310	≥240	≥24
	ASTM/ASME Gr.30	≤0.08	≤0.015	≤0.25	≤0.03	≤0.30	0.04—0.08	0.20—0.80			rem.	275—450	≥345	≥20
	ASTM/ASME Gr.31	≤0.08	≤0.015	≤0.35	≤0.05	≤0.30	0.04—0.08	0.20—0.80			rem.	380—550	≥450	≥18
	JIS Class 17	≤0.08	≤0.015	≤0.18	≤0.03	≤0.20	0.04—0.08	—			rem.	≥170	240—380	≥24
	JIS Class 19	≤0.08	≤0.015	≤0.25	≤0.03	≤0.30	0.04—0.08	0.20—0.80			rem.	≥275	345—515	≥20
	JIS Class 20	≤0.08	≤0.015	≤0.35	≤0.05	≤0.30	0.04—0.08	0.20—0.80			rem.	≥380	450—590	≥18
	ASTM/ASME Grade11	≤0.08	≤0.015	≤0.18	≤0.03	≤0.20	0.12—0.25	—			rem.	138—310	≥240	≥24
	ASTM/ASME Grade7	≤0.08	≤0.015	≤0.25	≤0.03	≤0.30	0.12—0.25	—			rem.	275—450	≥345	≥20
	JIS Class 11	≤0.08	≤0.013	≤0.15	≤0.03	≤0.20	0.12—0.25	—			rem.	≥165	270—410	≥27
	JIS Class 12	≤0.08	≤0.013	≤0.20	≤0.03	≤0.25	0.12—0.25	—			rem.	≥215	340—510	≥23
	JIS Class 13	≤0.08	≤0.013	≤0.30	≤0.05	≤0.30	0.12—0.25	—			rem.	≥345	480—620	≥18
	ASTM/ASME Grade13	≤0.08	≤0.015	≤0.10	≤0.03	≤0.20			0.04—0.06	0.4—0.6	rem.	≥170	≥275	≥24
	ASTM/ASME Grade14	≤0.08	≤0.015	≤0.15	≤0.03	≤0.30			0.04—0.06	0.4—0.6	rem.	≥275	≥410	≥20
	JIS Class 21	≤0.08	≤0.015	≤0.10	≤0.03	≤0.20			0.04—0.06	0.40—0.60	rem.	≥170	275—450	≥24
	JIS Class 22	≤0.08	≤0.015	≤0.15	≤0.03	≤0.30			0.04—0.06	0.40—0.60	rem.	≥275	410—530	≥20