

ASTM F899-09

EN	ASTM	MAX HB IN THE ANNEALED CONDITION	HARDENING °C	COOLING	TEMPERING °C	HARDNESS (HRC)
1.4006	410	210	1010	oil / air	260	43
					371	43
					482	42
					538	30
					593	24
1.4005	416	262	982	oil	149	41
					260	39
					371	41
					482	36
					538	31
(1.4021)	420	220	1010	warm oil	593	26
					149	53
					204	50
					260	48
					315	48
(1.4028)	420	235	1038	warm oil	371	48
					427	48
					149	52
					204	52
					260	50
(1.4034)	420	262	1038	warm oil	315	50
					371	49
					427	49
					149	58
					204	55/56
1.4057	431	285	1038	oil	260	53/54
					371	53/54
					482	53/54
					593	54/55
					427	55
1.4112	440B	285	1038	warm oil	260	42
					371	42
					482	45
					593	34
					149	58/59
1.4125	440C	285	1038	warm oil	204	56/57
					260	53/54
					315	53
					371	54
					427	54
1.4125	440C	285	1038	warm oil	149	60
					204	59
					260	57
					315	56
					371	56
					427	56

It is not recommended that free-machining grades be used for surgical instruments.

EXAMPLES OF SELECTED STAINLESS STEELS USED FOR SURGICAL INSTRUMENTS

EN	ASTM	CUTTING INSTRUMENTS	NON-CUTTING INSTRUMENTS
1.4305	303		Pliers, drills, handles, hammers, punches, spreaders, rulers, screws.
1.4301	304		Cannula, clamps, pliers, holders, retractors, spreaders, aspiration tubes, tendon passers.
1.4401	316		Cannula, clamps, pliers, holders, retractors, spreaders, aspiration tubes, tendon passers.
1.4006	410	Chisels, curettes, dissectors, osteotomes, reamers, scissors with inserts.	Clips, elevators, pliers, hemostats, holders, needle holders, punches, spreader, sounds, dilators.
1.4005	416	Chisels, curettes, dissectors.	Clamps, punches, retractors, skin hooks, spreaders.
(1.4021) (1.4028) (1.4034)	420 420 420	Chisels, cutters, bone cutting forceps, knives, rongeurs, scalpels, skin punches, conchotomes.	Clamps, elevators pliers, dissectors, retractors, needles.
1.4057	431		Cheek retractors, insertion wrenches, orthopedic instruments.
1.4112 1.4125	440B 440C	Chisels, knives, osteotomes, scalpels.	Drills, retractors, spreaders, pliers.

Stainless steels can be furnished hot-finished, cold-finished, annealed, solution-treated, solution-treated and aged, quenched and tempered.



Surgical curette