INTERNATIONAL STANDARD

ISO 15510

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Stainless steels — Chemical composition

Aciers inoxydables — Composition chimique

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 15510 was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 4, *Heat treatable and alloy steels*.

This first edition cancels and replaces ISO/TS 15510:2003, which has been technically revised.

Stainless steels — Chemical composition

1 Scope

This International Standard lists the chemical compositions of stainless steels agreed by ISO/TC 17/SC 4, mainly on the basis of a composition of the specifications in existing ISO, ASTM, EN, JIS and GB (Chinese) standards. They apply to all wrought product forms, including ingots and semi-finished material.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 6929:1987, *Steel products — Definitions and classification*

3 Terms and definitions

For the purposes of this document, the terms and definition given in ISO 6929:1987 and the following apply.

3.1
stainless steel
steel with at least 10,5 % (mass fraction) Cr and maximum 1,2 % (mass fraction) C

NOTE For the classification of stainless steels according to their structure, composition and application, see Annex C.

4 Chemical composition

The chemical composition of stainless steels approved by ISO/TC 17/SC 4 is given in Table 1.

WARNING — Due to hazardous effects to health and environmental problems of lead (Pb) it is recommended to use steels with sulfur additions instead. These steels generally have comparable properties relating to machinability.

NOTE If, in special cases, for example, an ISO committee charged with the establishment or revision of a standard for a specific product or application of stainless steels sees the necessity of deviating from the specifications in Table 1, it should inform ISO/TC 17/SC 4 (Secretariat's address: FES/DIN, Postfach 10 51 45, 40042 Dusseldorf, Germany) of the reasons for this and try, before such deviations are considered, to achieve consensus for a corresponding modification to Table 1.

5 Designation of comparable steels

The steel designation according to this International Standard is based on a 10-digit code presented in 4 subgroups of digits: 4 digits-3 digits-2 digits-1 digit.

XXXX-YYY-ZZ-A

The ISO designation of each grade is based on a decision of the ISO/TC 17/SC 4 group, taking into account several commonly used existing standards and designations.

In particular, the principles below have been used for the designation.

— The first subgroup contains 4 digits and is comparable to the European designation (EN numbers): keeping the number on the right side and dropping the “1.”.

— The second subgroup contains 3 digits and refers, in most cases, to the 3 middle digits of the UNS number used by ASTM. In the case of the ISO designation, contrary to the UNS system, no letter (an S or an N in the case of stainless steels) is used as a start. This 3-digit subgroup allows reference to the obsolete AISI numbers or to the numerical part of the standard designations used in other countries, such as Japan (JIS) and China (GB).

— The third subgroup contains 2 digits. In most cases, similar principles to those used in the UNS have been adopted. Care should be taken because some differences may exist between UNS, Chinese and ISO designations (see Table 2). The principles stated in Table 2 apply within each YYY series.

— The last digit is a single letter that allows the reader to identify, in a simple way, if the grade composition corresponds exactly to that included in one or more of the 4 existing standard practices from Europe, the USA, Japan or China. If the composition is a compromise between several standards, it is then a new and genuine ISO composition. The last digit of the ISO designation is then I (see Table 3).

Table 4 gives complementary explanations for the use of the ISO numbering system through examples.

Tables A.1, A.2 and A.3 give the designations of stainless steels which are listed in other designation systems and are identical or comparable to the grades in Table 1. In Table A.1, the sequence of steels is the same as in Table 1. In Table A.2, the sequence is given in the order of the second column. In Table A.3, the sequence is given in the order of the first column.

Table B.1 gives a list where the steel grades of Table 3 are to be found in other International Standards.

NOTE 1 To compare similar grades, it is necessary to check each element before making a substitution.

NOTE 2 The line number in the steel designation is an internal reference to ease the reading of the document. It is by no means a designation and it is not for commercial purposes or as a technical reference. The number in brackets behind gives the old line number as mentioned in ISO/TS 15510:2003.

Table 1 — Internationally agreed specifications for the composition of stainless steels (applicable for cast analysis)

Steel designation			% (mass fraction)[a]									
ISO number	ISO name	Line (old)	C	Si	Mn	P	S	N	Cr	Mo	Ni	Others
a) Austenitic steel												
4318-301-53-I	X2CrNiN18-7	A25A (04)	0,030	1,00	2,00	0,045	0,015	0,10 to 0,20	16,0 to 18,5	—	6,0 to 8,0	—
4319-301-00-I	X5CrNi17-7	A24H (05)	0,07	1,00	2,00	0,045	0,030[b]	0,10	16,0 to 18,0	—	6,0 to 8,0	—
4310-301-00-I	X10CrNi18-8	A26L (11)	0,05 to 0,15	2,00	2,00	0,045	0,030[b]	0,10	16,0 to 19,0	0,80	6,0 to 9,5	—
4325-302-00-E	X9CrNi18-9	A27N	0,030 to 0,15	1,00	2,00	0,045	0,030	0,10	17,0 to 19,0	—	8,0 to 10,0	—
4326-302-15-I	X12CrNiSi18-9-3	A27P (46)	0,15	2,00 to 3,00	2,00	0,045	0,030	—	17,0 to 19,0	—	8,0 to 10,0	—
4307-304-03-I	X2CrNi18-9	A27B (01)	0,030	1,00	2,00	0,045	0,030[b]	0,10	17,5 to 19,5	—	8,0 to 10,5[c]	—
4306-304-03-I	X2CrNi19-11	A30A (02)	0,030	1,00	2,00	0,045	0,030[b]	0,10	18,0 to 20,0	—	10,0 to 12,0[c]	—
4311-304-53-I	X2CrNiN18-9	A27A (03)	0,030	1,00	2,00	0,045	0,030[b]	0,12 to 0,22	17,5 to 19,5	—	8,0 to 11,0	—
4301-304-00-I	X5CrNi18-10	A28E (06)	0,07	1,00	2,00	0,045	0,030[b]	0,10	17,5 to 19,5	—	8,0 to 10,5[c]	—
4315-304-51-I	X5CrNiN19-9	A28F (10)	0,08	1,00	2,50	0,045	0,030	0,10 to 0,25	18,0 to 20,0	—	7,5 to 10,5	—
4948-304-09-I	X7CrNi18-9	A27L (07)	0,04 to 0,10	1,00	2,00	0,045	0,030[b]	0,10	17,5 to 19,5	—	8,0 to 11,0	—
4818-304-15-E	X6CrNiSiNCe19-10	A29J	0,04 to 0,08	1,00 to 2,00	1,00	0,045	0,015[b]	0,12 to 0,20	18,0 to 20,0	—	9,0 to 11,0	Ce: 0,03 to 0,08
4650-304-75-E	X2CrNiCu19-10	A29A	0,030	1,00	2,00	0,045	0,015	0,08	18,5 to 20,0	—	9,0 to 10,0	Cu: 1,00
4649-304-76-J	X6CrNiCu19-9-1	A28I	0,08	1,00	2,00	0,045	0,030	—	18,0 to 20,0	—	8,0 to 10,5	Cu: 0,70 to 1,30
4305-303-00-I	X10CrNiS18-9	A27M (14)	0,12	1,00	2,00	0,060	⩾ 0,15	0,10	17,0 to 19,0	—	8,0 to 10,0	Cu[d]
4625-303-23-X	X12CrNiSe18-9	A27O	0,15	1,00	2,00	0,20	0,060	—	17,0 to 19,0	—	8,0 to 10,0	Se: ⩾ 0,15
4570-303-31-I	X6CrNiCuS18-9-2	A27I (44)	0,08	1,00	2,00	0,045	⩾ 0,15	0,10	17,0 to 19,0	0,60	8,0 to 10,0	Cu: 1,40 to 1,80
4667-303-76-J	X12CrNiCuS18-9-3	A27Q	0,15	1,00	3,00	0,20	⩾ 0,15	—	17,0 to 19,0	—	8,0 to 10,0	Cu: 1,50 to 3,5
4615-201-75-E	X3CrMnNiCu15-8-5-3[e]	A28C	0,030	1,00	7,0 to 9,0	0,040	0,010	0,02 to 0,06	14,0 to 16,0	0,80	4,5 to 6,0	Cu: 2,0 to 4,0
4541-321-00-I	X6CrNiTi18-10	A28G (16)	0,08	1,00	2,00	0,045	0,030[b]	—	17,0 to 19,0	—	9,0 to 12,0[c]	Ti: 5xC to 0,70
4940-321-09-I	X7CrNiTi18-10	A28O (17)	0,04 to 0,10	1,00	2,00	0,045	0,030[b]	—	17,0 to 19,0	—	9,0 to 12,0[c]	Ti: 5xC to 0,80
4941-321-09-I	X6CrNiTiB18-10	A28J (18)	0,04 to 0,08	1,00	2,00	0,035	0,015	—	17,0 to 19,0	—	9,0 to 12,0	Ti: 5xC to 0,70 B: 0,001 5 to 0,005 0
4550-347-00-I	X6CrNiNb18-10	A28H (19)	0,08	1,00	2,00	0,045	0,030[b]	—	17,0 to 19,0	—	9,0 to 12,0[c]	Nb: 10xC to 1,00
4912-347-09-I	X7CrNiNb18-10	A28K (20)	0,04 to 0,08	1,00	2,00	0,045	0,030[b]	—	17,0 to 19,0	—	9,0 to 12,0[c]	Nb: 10xC to 1,00
4961-347-77-E	X8CrNiNb16-13	A29L	0,04 to 0,10	0,30 to 0,60	1,50	0,035	0,015	—	15,0 to 17,0	—	12,0 to 14,0	Nb: 10xC to 1,20

Table 1 (*continued*)

Steel designation			% (mass fraction)[a]									
ISO number	**ISO name**	**Line** (old)	**C**	**Si**	**Mn**	**P**	**S**	**N**	**Cr**	**Mo**	**Ni**	**Others**
a) Austenitic steel												
4567-304-30-I	X3CrNiCu18-9-4	A27F (15)	0,04	1,00	2,00	0,045	0,030[b]	0,10	17,0 to 19,0	—	8,0 to 10,5	Cu: 3,0 to 4,0
4567-304-76-I	X6CrNiCu17-8-2	A25J (45)	0,08	1,70	3,00	0,045	0,030	—	15,0 to 18,0	—	6,0 to 9,0	Cu: 1,00 to 3,0
4567-304-98-X	X6CrNiCu18-9-2	A27J	0,08	1,00	2,00	0,045	0,030	—	17,0 to 19,0	—	8,0 to 10,5	Cu: 1,00 to 3,0
4660-315-77-I	X6CrNiCuSiMo19-10-3-2	A30J	0,08	0,50 to 2,50	2,00	0,045	0,030	—	17,0 to 20,5	0,50 to 1,50	8,5 to 11,5	Cu: 1,50 to 3,5
4867-316-77-J	X40CrNiWSi15-14-3-2	A29P	0,35 to 0,45	1,50 to 2,50	0,60	0,040	0,030	—	14,0 to 16,0	—	13,0 to 15,0	W: 2,00 to 3,00
4303-305-00-I	X6CrNi18-12	A30I (08)	0,08	1,00	2,00	0,045	0,030[b]	0,10	17,0 to 19,0	—	10,5 to 13,0	—
4828-305-09-I	X15CrNiSi20-12	A32R	0,20	1,50 to 2,50	2,00	0,045	0,030	0,10	19,0 to 21,0	—	11,0 to 13,0	—
4835-308-15-U	X7CrNiSiNCe21-11	A32N	0,05 to 0,10	1,40 to 2,00	0,80	0,040	0,030	0,14 to 0,20	20,0 to 22,0	—	10,0 to 12,0	Ce: 0,03 to 0,08
4884-305-00-X	X6CrNiSi18-13-4	A31H	0,08	3,0 to 5,0	2,00	0,045	0,030	—	15,0 to 20,0	—	11,5 to 15,0	—
4389-384-00-I	X3NiCr18-16	A34F (09)	0,04	1,00	2,00	0,045	0,030[b]	0,10	15,0 to 17,0	—	17,0 to 19,0	—
4371-201-53-I	X2CrMnNiN17-7-5	A29B	0,030	1,00	6,0 to 8,0	0,045	0,015	0,15 to 0,25	16,0 to 17,5	—	3,5 to 5,5	Cu: 1,00
4372-201-00-I	X12CrMnNiN17-7-5	A29O (13)	0,15	1,00	5,5 to 7,5	0,045	0,030[b]	0,05 to 0,25	16,0 to 18,0	—	3,5 to 5,5	—
4597-204-76-I	X8CrMnCuN17-8-3	A25L (40)	0,10	2,00	6,5 to 8,5	0,040	0,030	0,15 to 0,30	16,0 to 18,0	1,00	2,00	Cu: 2,00 to 3,5
4617-201-76-J	X6CrNiMnCu17-8-4-2	A29I	0,08	1,70	3,0 to 5,0	0,045	0,030	—	15,0 to 18,0	—	6,0 to 9,0	Cu: 1,00 to 3,0
4618-201-76-E	X9CrMnNiCu17-8-5-2	A30L	0,10	1,00	5,5 to 9,5	0,070	0,010	0,15	16,5 to 18,5	—	4,5 to 5,5	Cu: 1,00 to 2,50
4373-202-00-I	X12CrMnNiN18-9-5	A32O	0,15	1,00	7,5 to 10,0	0,060	0,030	0,15 to 0,30	17,0 to 19,0	—	4,0 to 6,0	—
4982-215-00-E	X10CrNiMoMnNbVB 15-10-1	A32P	0,06 to 0,15	0,20 to 1,00	5,50 to 7,0	0,035	0,015	0,10	14,0 to 16,0	0,80 to 1,20	9,0 to 11,0	V: 0,15 to 0,40 Nb: 0,75 to 1,25 B: 0,003 to 0,009
4369-202-91-I	X11CrNiMnN19-8-6	A33L (43)	0,07 to 0,15	0,50 to 1,00	5,0 to 7,5	0,030	0,015	0,20 to 0,30	17,5 to 19,5	—	6,5 to 8,5	—
4890-202-09-X	X53CrMnNiN21-9-4	A34V	0,48 to 0,58	0,35	8,0 to 10,0	0,040	0,030	0,35 to 0,50	20,0 to 22,0	—	3,25 to 4,5	—
4648-315-77-I	X6CrNiSiCuMo19-13-3-3-1	A33I	0,08	2,50 to 4,0	2,00	0,045	0,030	—	17,0 to 20,5	0,50 to 1,50	11,0 to 14,0	Cu: 1,50 to 3,5
4404-316-03-I	X2CrNiMo17-12-2	A31A (21)	0,030	1,00	2,00	0,045	0,030[b]	0,10	16,5 to18,5	2,00 to 3,00	10,0 to 13,0[c]	—
4432-316-03-I	X2CrNiMo17-12-3	A32A (22)	0,030	1,00	2,00	0,045	0,030[b]	0,10	16,5 to18,5	2,50 to 3,00	10,5 to 13,0[c]	—
4435-316-91-I	X2CrNiMo18-14-3	A35A (23)	0,030	1,00	2,00	0,045	0,030	0,10	17,0 to 19,0	2,50 to 3,00	12,5 to 15,0	—
4406-316-53-I	X2CrNiMoN17-11-2	A30B (25)	0,030	1,00	2,00	0,045	0,030[b]	0,12 to 0,22	16,5 to 18,5	2,00 to 3,00	10,0 to 12,5[c]	—

Table 1 (*continued*)

Steel designation			% (mass fraction)[a]									
ISO number	**ISO name**	**Line** (old)	**C**	**Si**	**Mn**	**P**	**S**	**N**	**Cr**	**Mo**	**Ni**	**Others**
a) Austenitic steel												
4665-316-76-J	X6CrNiMoCu18-12-2-2	A32I	0,08	1,00	2,00	0,045	0,030	—	17,0 to 19,0	1,20 to 2,75	10,0 to 14,0	Cu: 1,00 to 2,50
4647-316-75-X	X2CrNiMoCu18-14-2-2	A34A	0,030	1,00	2,00	0,045	0,030	—	17,0 to 19,0	1,20 to 2,75	12,0 to 16,0	Cu: 1,00 to 2,50
4578-316-76-E	X3CrNiCuMo17-11-3-2	A30F	0,04	1,00	2,00	0,045	0,015	0,10	16,5 to17,5	2,00 to 2,50	10,0 to 11,0	Cu: 3,0 to 3,5
4429-316-53-I	X2CrNiMoN17-12-3	A32B (26)	0,030	1,00	2,00	0,045	0,030[b]	0,12 to 0,22	16,5 to 18,5	2,50 to 3,00	10,5 to 13,0[c]	—
4401-316-00-I	X5CrNiMo17-12-2	A31I (30)	0,08	1,00	2,00	0,045	0,030[b]	0,10	16,0 to 18,0	2,00 to 3,00	10,0 to 13,0	—
4436-316-00-I	X3CrNiMo17-12-3	A32F (31)	0,05	1,00	2,00	0,045	0,030[b]	0,10	16,5 to 18,5	2,50 to 3,00	10,5 to 13,0[c]	—
4449-316-76-E	X3CrNiMo18-12-3	A33F	0,035	1,00	2,00	0,045	0,015	0,08	17,0 to 18,2	2,25 to 2,75	11,5 to 12,5	Cu: 1,00
4910-316-77-E	X3CrNiMoBN17-13-3	A33G	0,04	0,75	2,00	0,035	0,015	0,10 to 0,18	16,0 to 18,0	2,00 to 3,0	12,0 to 14,0	B: 0,001 5 to 0,005 0
4494-316-74-J	X6CrNiMoS17-12-3	A32K	0,08	1,00	2,00	0,045	⩾ 0,10	—	16,0 to 18,0	2,00 to 3,0	10,0 to 14,0	—
4495-316-51-J	X6CrNiMoN17-12-3	A32H	0,08	1,00	2,00	0,045	0,030	0,10 to 0,22	16,0 to 18,0	2,00 to 3,0	10,0 to 14,0	—
4571-316-35-I	X6CrNiMoTi17-12-2	A31F (32)	0,08	1,00	2,00	0,045	0,030[b]	—	16,5 to 18,5	2,00 to 2,50	10,5 to 13,5[c]	Ti: 5xC to 0,70
4580-316-40-I	X6CrNiMoNb17-12-2	A31G (33)	0,08	1,00	2,00	0,045	0,030[b]	—	16,5 to 18,5	2,00 to 2,50	10,5 to 13,5	Nb: 10xC to 1,00
4879-317-77-J	X30CrNiMoPB20-11-2	A33R	0,25 to 0,35	1,00	1,20	0,18 to 0,25	0,030	—	19,0 to 21,0	1,8 to 2,50	10,0 to 12,0	B: 0,001 to 0,010
4438-317-03-I	X2CrNiMo19-14-4	A37A (24)	0,030	1,00	2,00	0,045	0,030[b]	0,10	17,5 to 20,0	3,0 to 4,0	12,0 to 15,0	—
4439-317-26-E	X2CrNiMoN17-13-5	A35B	0,030	1,00	2,00	0,045	0,015	0,12 to 0,22	16,5 to 18,5	4,0 to 5,0	12,5 to 14,5	—
4483-317-26-I	X2CrNiMoN18-15-5	A38A (28)	0,030	1,00	2,00	0,045	0,030	0,10 to 0,20	17,0 to 20,0	4,0 to 5,0	13,5 to 17,5	—
4434-317-53-I	X2CrNiMoN18-12-4	A34B (27)	0,030	1,00	2,00	0,045	0,030[b]	0,10 to 0,20	17,5 to 20,0	3,00 to 4,0	11,0 to 14,0[c]	—
4445-317-00-U	X6CrNiMo19-13-4	A36I	0,08	1,00	2,00	0,045	0,030	0,10	18,0 to 20,0	3,0 to 4,0	11,0 to 15,0	—
4476-317-92-X	X3CrNiMo18-16-5	A39F	0,04	1,00	2,50	0,045	0,030	—	16,0 to 19,0	4,0 to 6,0	15,0 to 17,0	—
4824-308-09-J	X20CrNiN22-11	A33Q	0,15 to 0,25	1,00	1,00 to 1,60	0,040	0,030	0,15 to 0,30	20,5 to 22,5	—	10,0 to 12,0	—
4950-309-08-E	X6CrNi23-13	A36J	0,04 to 0,08	0,70	2,00	0,035	0,015	0,10	22,0 to 24,0	—	12,0 to 15,0	—
4833-309-08-I	X18CrNi23-13	A36R	0,20	1,00	2,00	0,045	0,030	0,10	22,0 to 24,0	—	12,0 to 15,0	—
4496-309-51-J	X4CrNiMoN25-14-1	A40F	0,06	1,50	2,00	0,045	0,030	0,25 to 0,40	23,0 to 26,0	0,50 to 1,20	12,0 to 16,0	—
4335-310-02-I	X1CrNi25-21	A46A (12)	0,020	0,25	2,00	0,025	0,010	0,10	24,0 to 26,0	0,20	20,0 to 22,0	—
4951-310-08-I	X6CrNi25-20	A45L	0,04 to 0,10	0,70	2,00	0,035	0,015	0,10	24,0 to 26,0	—	19,0 to 22,0	—
4845-310-08-E	X8CrNi25-21	A46L	0,10	1,50	2,00	0,045	0,030	0,10	24,0 to 26,0	—	19,0 to 22,0	—

Table 1 (*continued*)

Steel designation			% (mass fraction)[a]									
ISO number	**ISO name**	**Line** (old)	**C**	**Si**	**Mn**	**P**	**S**	**N**	**Cr**	**Mo**	**Ni**	**Others**
a) Austenitic steel												
4845-310-09-X	X23CrNi25-21	A46O	0,25	1,50	2,00	0,040	0,030	—	24,0 to 26,0	—	19,0 to 22,0	—
4841-314-00-E	X15CrNiSi25-21	A46R	0,20	1,50 to 2,50	2,00	0,045	0,015	0,10	24,0 to 26,0	—	19,0 to 22,0	—
4466-310-50-E	X1CrNiMoN25-22-2	A49A (29)	0,020	0,70	2,00	0,025	0,010	0,10 to 0,16	24,0 to 26,0	2,00 to 2,50	21,0 to 23,0	—
4547-312-54-I	X1CrNiMoCuN20-18-7	A45A (34)	0,020	0,70	1,00	0,035	0,015	0,18 to 0,25	19,5 to 20,5	6,0 to 7,0	17,5 to 18,5	Cu: 0,50 to 1,00
4659-312-66-I	X1CrNiMoCuNW24-22-6	A52B (41)	0,020	0,70	2,0 to 4,0	0,030	0,010	0,35 to 0,50	23,0 to 25,0	5,5 to 6,5	21,0 to 23,0	Cu: 1,00 to 2,00 W: 1,50 to 2,50
4652-326-54-I	X1CrNiMoCuN24-22-8	A54A (38)	0,020	0,50	2,0 to 4,0	0,030	0,005	0,45 to 0,55	23,0 to 25,0	7,0 to 8,0	21,0 to 23,0	Cu: 0,30 to 0,60
4565-345-65-I	X2CrNiMnMoN25-18-6-5	A54B (42)	0,030	1,00	5,0 to 7,0	0,030	0,015	0,30 to 0,60	24,0 to 26,0	4,0 to 5,0	16,0 to 19,0	Nb: 0,15
4971-314-79-I	X12CrNiCoMoWMnNNb21-20-20-3-3-2	A64R	0,08 to 0,16	1,00	1,00 to 2,00	0,035	0,015	0,10 to 0,20	20,0 to 22,5	2,50 to 3,5	19,0 to 21,0	Co:18,5 to 21,0 W: 2,00 to 3,0 Nb: 0,75 to 1,25
4537-310-92-E	X1CrNiMoCuN25-25-5	A55A	0,020	0,70	2,00	0,030	0,010	0,17 to 0,25	24,0 to 26,0	4,7 to 5,7	24,0 to 27,0	Cu: 1,00 to 2,00
4656-089-04-I	X1NiCrMoCu22-20-5-2	A47A	0,020	1,00	2,00	0,040	0,030	0,10	19,0 to 21,0	4,0 to 5,0	21,0 to 23,0	Cu: 1,00 to 2,00
4539-089-04-I	X1NiCrMoCu25-20-5	A50A (35)	0,020	0,75	2,00	0,035	0,015	0,15	19,0 to 22,0	4,0 to 5,0	23,5 to 26,0	Cu: 1,00 to 2,00
4529-089-26-I	X1NiCrMoCuN25-20-7	A52A (37)	0,020	0,75	2,00	0,035	0,015	0,15 to 0,25	19,0 to 21,0	6,0 to 7,0	24,0 to 26,0	Cu: 0,50 to 1,50
4478-083-67-U	X2NiCrMoN25-21-7	A53A	0,030	1,00	2,00	0,040	0,030	0,18 to 0,25	20,0 to 22,0	6,0 to 7,0	23,5 to 25,5	Cu: 0,75
4958-088-77-E	X5NiCrAlTi31-20	A51J	0,03 to 0,08	0,70	1,50	0,015	0,010	0,030	19,0 to 22,0	—	30,0 to 32,5	Al: 0,20 to 0,50 Co: 0,50 Cu: 0,50 Nb: 0,10 Ti: 0,20 to 0,50 Al+Ti: 0,70 Ni+Co:30,0 to 32,5
4563-080-28-I	X1NiCrMoCu31-27-4	A62A (36)	0,020	0,70	2,00	0,030	0,010	0,10	26,0 to 28,0	3,0 to 4,0	30,0 to 32,0	Cu: 0,70 to 1,50
4876-088-00-I	X8NiCrAlTi32-21	A53L (54)	0,10	1,00	1,50	0,015	0,015	—	19,0 to 23,0	—	30,0 to 34,0	Al: 0,15 to 0,60 Ti:0,15 to 0,60 Cu: 0,70
4959-088-77-E	X8NiCrAlTi32-20	A52L	0,05 to 0,10	0,70	1,50	0,015	0,010	0,030	19,0 to 22,0	—	30,0 to 34,0	Al: 0,20 to 0,65 Co: 0,50 Cu: 0,50 Ti: 0,20 to 0,65 Ni+Co:30,0 to 34,0

Table 1 (*continued*)

Steel designation			% (mass fraction)[a]									
ISO number	**ISO name**	**Line** (old)	**C**	**Si**	**Mn**	**P**	**S**	**N**	**Cr**	**Mo**	**Ni**	**Others**
a) Austenitic steel												
4959-088-10-U	X7NiCrAlTi33-21	A54L	0,05 to 0,10	1,00	1,50	0,045	0,015	—	19,0 to 23,0	—	30,0 to 35,0	Cu: 0,75 Fe: ⩾ 39,5 Ti: 0,15 to 0,60 Al: 0,15 to 0,60
4959-088-11-U	X8NiCrAlTi33-21	A54M	0,06 to 0,10	1,00	1,50	0,040	0,015	—	19,0 to 23,0	—	30,0 to 35,0	Cu: 0,75 Fe: ⩾ 39,5 Ti: 0,15 to 0,60 Al: 0,15 to 0,60 Al+Ti: 0,85 to 1,2
4864-083-77-X	X13NiCr35-16	A51O	0,15	1,50	2,00	0,040	0,030	—	14,0 to 17,0	—	33,0 to 37,0	—
4657-080-20-U	X4NiCrCuMo35-20-4-3	A58F	0,07	1,00	2,00	0,045	0,035	—	19,0 to 21,0	2,00 to 3,00	32,0 to 38,0	Cu: 3,0 to 4,0 Nb: (8xC) to 1,00
4854-353-15-E	X6NiCrSiNCe35-25	A60J	0,04 to 0,08	1,20 to 2,00	2,00	0,040	0,015	0,12 to 0,20	24,0 to 26,0	—	34,0 to 36,0	Ce: 0,03 to 0,08
4479-089-36-U	X1NiCrMoMnN34-27-6-5[e]	A72A	0,020	0,50	4,0 to 6,0	0,025	0,010	0,30 to 0,50	26,0 to 28,0	5,0 to 6,0	33,0 to 35,0	Cu: 0,50
b) Austenitic-ferritic (duplex) steels												
4062-322-02-U	X2CrNiN22-2[e]	D24A	0,030	1,00	2,00	0,040	0,010	0,18 to 0,26	21,5 to 24,0	0,45	1,00 to 2,80	—
4162-321-01-E	X2CrMnNiN21-5-1[e]	D27F	0,040	1,00	4,0 to 6,0	0,040	0,015	0,20 to 0,25	21,0 to 22,0	0,10 to 0,80	1,35 to 1,70	Cu: 0,10 to 0,80
4362-323-04-I	X2CrNiN23-4	D27B (51)	0,030	1,00	2,00	0,035	0,015	0,05 to 0,20	22,0 to 24,0	0,10 to 0,60	3,5 to 5,5	Cu: 0,10 to 0,60
4424-315-00-I	X2CrNiMoSiMnN19-5-3-2-2	D29A	0,030	1,40 to 2,00	1,20 to 2,00	0,035	0,030	0,05 to 0,10	18,0 to 19,0	2,50 to 3,0	4,3 to 5,2	—
4462-318-03-I	X2CrNiMoN22-5-3[f]	D30A (52)	0,030	1,00	2,00	0,035	0,015	0,10 to 0,22	21,0 to 23,0	2,50 to 3,5	4,5 to 6,5	—
4481-312-60-J	X2CrNiMoN25-7-3	D35A	0,030	1,00	1,50	0,040	0,030	0,08 to 0,30	24,0 to 26,0	2,50 to 3,5	5,5 to 7,5	—
4507-325-20-I	X2CrNiMoCuN25-6-3	D34A (53)	0,030	0,70	2,00	0,035	0,015	0,20 to 0,30	24,0 to 26,0	3,0 to 4,0	6,0 to 8,0	Cu: 1,00 to 2,50
4507-325-50-X	X3CrNiMoCuN26-6-3-2	D35F	0,04	1,00	1,50	0,040	0,030	0,10 to 0,25	24,0 to 27,0	2,9 to 3,9	4,5 to 6,5	Cu: 1,50 to 2,50
4410-327-50-E	X2CrNiMoN25-7-4	D36A (54)	0,030	1,00	2,00	0,035	0,015	0,24 to 0,35	24,0 to 26,0	3,0 to 4,5	6,0 to 8,0	—
4501-327-60-I	X2CrNiMoCuWN25-7-4	D36B (56)	0,030	1,00	1,00	0,030	0,010	0,20 to 0,30	24,0 to 26,0	3,0 to 4,0	6,0 to 8,0	Cu: 0,50 to 1,00 W: 0,50 to 1,00
4460-312-00-I	X3CrNiMoN27-5-2	D34F (55)	0,050	1,00	2,00	0,035	0,030[b]	0,05 to 0,20	25,0 to 28,0	1,30 to 2,00	4,5 to 6,5	—
4480-329-00-U	X6CrNiMo26-4-2	D32F	0,08	0,75	1,00	0,040	0,030	—	23,0 to 28,0	1,00 to 2,00	2,5 to 5,0	—
4477-329-06-E	X2CrNiMoN29-7-2[e]	D38A	0,030	0,80	0,80 to 1,50	0,030	0,030	0,30 to 0,40	28,0 to 30,0	1,50 to 2,60	5,8 to 7,5	Cu: 0,80

Table 1 (*continued*)

Steel designation			% (mass fraction)[a]									
ISO number	**ISO name**	**Line** (old)	**C**	**Si**	**Mn**	**P**	**S**	**N**	**Cr**	**Mo**	**Ni**	**Others**
b) Austenitic-ferritic (duplex) steels												
4658-327-07-U	X2CrNiMoCoN28-8-5-1[e]	D42A	0,030	0,50	1,50	0,035	0,010	0,30 to 0,50	26,0 to 29,0	4,0 to 5,0	5,5 to 9,5	Cu: 1,00 Co: 0,50 to 2,00
4485-332-07-U	X2CrNiMoN31-8-4	D43A	0,030	0,80	1,50	0,035	0,010	0,40 to 0,60	29,0 to 33,0	3,0 to 5,0	6,0 to 9,0	Cu: 1,00
c) Ferritic steels												
4030-410-90-X	X2Cr12	F12A	0,030	1,00	1,00	0,040	0,030	—	11,0 to 13,5	—	—	—
4003-410-77-I	X2CrNi12	F12C (61)	0,030	1,00	2,00	0,040	0,015	0,030	10,5 to 12,5	—	0,30 to 1,10	—
4720-409-00-I	X2CrTi12[j]	F12B (62)	0,030	1,00	1,00	0,040	0,030[b]	0,030	10,5 to 12,5	—	0,50	Ti: 6x(C+N) to 0,65
4516-409-75-I	X6CrNiTi12	F13F (64)	0,08	1,00	2,00	0,040	0,015	0,030	10,5 to 12,5	—	0,50 to 1,50	Ti: 0,05 to 0,35
4000-410-08-I	X6Cr13	F13G (65)	0,08	1,00	1,00	0,040	0,030[b]	—	11,5 to 14,0	—	0,75	—
4002-405-00-I	X6CrAl13	F13H (66)	0,08	1,00	1,00	0,040	0,030[b]	—	11,5 to 14,0	—	—	Al: 0,10 to 0,30
4724-405-77-I	X10CrAlSi13	F13L	0,12	0,70 to 1,40	1,00	0,040	0,015	—	12,0 to 14,0	—	1,00	Al: 0,70 to 1,20
4012-429-00-X	X10Cr15	F15L	0,12	1,00	1,00	0,040	0,030	—	14,0 to 16,0	—	—	—
4595-429-71-I	X1CrNb15	F15A	0,020	1,00	1,00	0,035	0,015	0,020	14,0 to 16,0	—	—	Nb: 0,20 to 0,60
4589-429-70-E	X5CrNiMoTi15-2	F17H	0,08	1,00	1,00	0,040	0,015	—	13,5 to 15,5	0,2 to 1,2	1,00 to 2,50	Ti: 0,30 to 0,50
4016-430-00-I	X6Cr17	F17I (67)	0,08[g]	1,00	1,00	0,040	0,030[b]	—	16,0 to 18,0	—	—	—
4004-430-20-I	X7CrS17	F17L (68)	0,09	1,50	1,50	0,040	⩾ 0,15	—	16,0 to 18,0	0,60	—	—
4520-430-70-I	X2CrTi17	F17A	0,025	0,50	0,50	0,040	0,015	0,015	16,0 to 18,0	—	—	Ti: 8x(C+N) to 0,60[h]
4664-430-75-J	X2CrCuTi18	F18A	0,025	1,00	1,00	0,040	0,030	0,025	16,0 to 20,0	—	—	Ti: 8x(C+N) to 0,80[h] Cu: 0,30 to 0,80
4509-439-40-X	X2CrTiNb18	F18B	0,030	1,00	1,00	0,040	0,015	—	17,5 to 18,5	—	—	Ti: 0,10 to 0,60 Nb: 0,30 + 3xC to 1,00
4510-430-35-I	X3CrTi17	F17F (70)	0,05	1,00	1,00	0,040	0,030[b]	0,030	16,0 to 19,0	—	—	Ti: 0,15 to 0,75[h]
4511-430-71-I	X3CrNb17	F17G (73)	0,05	1,00	1,00	0,040	0,015	0,030	16,0 to 18,0	—	—	Nb: 12xC to 1,00
4742-430-77-I	X10CrAlSi18	F18N	0,12	0,70 to 1,40	1,00	0,040	0,015	—	17,0 to 19,0	—	1,00	Al: 0,70 to 1,20
4017-430-91-E	X6CrNi17-1	F18H	0,08	1,00	1,00	0,040	0,015	—	16,0 to 18,0	—	1,20 to 1,60	—

Table 1 (*continued*)

Steel designation			% (mass fraction)[a]									
ISO number	**ISO name**	**Line** (old)	**C**	**Si**	**Mn**	**P**	**S**	**N**	**Cr**	**Mo**	**Ni**	**Others**
c) Ferritic steels												
4113-434-00-I	X6CrMo17-1	F18I (69)	0,08	1,00	1,00	0,040	0,030[b]	—	16,0 to 18,0	0,75 to 1,40	—	—
4513-436-00-J	X2CrMoNbTi18-1	F19A	0,025	1,00	1,00	0,040	0,030	0,025	16,0 to 19,0	0,75 to 1,50	—	Ti+Nb+Zr: 8x(C+N) to 0,80
4609-436-77-J	X2CrMo19	F19B	0,025	1,00	1,00	0,040	0,030	0,025	17,0 to 20,0	0,40 to 0,80	—	Ti+Nb+Zr: 8x(C+N) to 0,80
4526-436-00-I	X6CrMoNb17-1	F18J (71)	0,08	1,00	1,00	0,040	0,015	0,040	16,0 to 18,0	0,80 to 1,40	—	Nb: 5xC to 1,00
4521-444-00-I	X2CrMoTi18-2	F20A (72)	0,025	1,00	1,00	0,040	0,015	0,030	17,0 to 20,0	1,75 to 2,50	—	Ti: $\geqslant$ 4x(C+N) and $0{,}15 \leqslant Ti \leqslant 0{,}75$[h]
4523-182-35-I	X2CrMoTiS18-2	F20B (74)	0,030	1,00	0,50	0,040	0,15 to 0,35	—	17,5 to 19,0	2,00 to 2,50	—	Ti: 0,30 to 0,80 (C + N) $\leqslant$ 0,040
4621-445-00-E	X2CrNbCu21	F21A	0,030	1,00	1,00	0,040	0,015	0,030	20, 0 to 21,5	—	—	Nb: 0,20 to 1,00 Cu: 0,10 to 1,00
4764-442-72-J	X8CrAl19-3	F19N	0,10	1,50	1,00	0,040	0,030	—	17,0 to 21,0	—	—	Al: 2,00 to 4,0
4128-445-92-J	X2CrMo23-1	F24A	0,025	1,00	1,00	0,040	0,030	0,025	21,0 to 24, 0	0,70 to 1,50	—	—
4129-445-92-J	X2CrMo23-2	F25A	0,025	1,00	1,00	0,040	0,030	0,025	21,0 to 24,0	1,50 to 2,50	—	—
4762-445-72-I	X10CrAlSi25	F25N	0,12	0,70 to 1,40	1,00	0,040	0,015	—	23,0 to 26,0	—	1,00	Al: 1,20 to 1,70
4749-446-00-I	X15CrN26	F26R	0,20	1,00	1,00	0,040	0,030	0,15 to 0,25	24,0 to 28,0	—	1,00	—
4131-446-92-C	X1CrMo26-1	F27A	0,010	0,40	0,40	0,030	0,020	0,015	25,0 to 27,5	0,75 to 1,50	—	—
4750-446-60-U	X2CrMoNi27-4-2	F33A	0,030	1,00	1,00	0,040	0,030	0,040	25,0 to 28,0	3,0 to 4,0	1,00 to 3,5	(Ti + Nb): 0,20 + 6 x (C+N) to 1,00
4135-447-92-C	X1CrMo30-2	F32A	0,010	0,40	0,40	0,030	0,020	0,015	28,5 to 32,0	1,50 to 2,50	—	—
d) Martensitic steels												
4006-410-00-I	X12Cr13	M13B (82)	0,08 to 0,15	1,00	1,50	0,040	0,030[b]	—	11,5 to 13,5	—	0,75	—
4024-410-09-E	X15Cr13	M13F	0,12 to 0,17	1,00	1,00	0,040	0,015	—	12,0 to 14,0	—	—	—
4119-410-92-C	X13CrMo13	M13G	0,08 to 0,18	0,60	1,00	0,040	0,030	—	11,5 to 14,0	0,30 to 0,60	—	—

Table 1 (*continued*)

Steel designation			% (mass fraction)[a]									
ISO number	ISO name	Line (old)	C	Si	Mn	P	S	N	Cr	Mo	Ni	Others
d) Martensitic steels												
4642-416-72-J	X13CrPb13	M13A	0,15	1,00	1,00	0,040	0,030	—	11,5 to 13,5	—	—	Pb: 0,05 to 0,30
4005-416-00-I	X12CrS13	M13C (83)	0,08 to 0,15	1,00	1,50	0,040	⩾ 0,15	—	12,0 to 14,0	0,60	—	—
4021-420-00-I	X20Cr13	M13I (84)	0,16 to 0,25	1,00	1,50	0,040	0,030[b]	—	12,0 to 14,0	—	—	—
4916-600-77-J	X18CrMnMoNbVN12	M12G	0,15 to 0,20	0,50	0,50 to1,00	0,040	0,030	0,05 to 0,10	10,0 to 13,0	0,30 to 0,90	0,60	Nb: 0,20 to 0,60 V: 0,10 to 0,40
4929-422-00-I	X23CrMoWMnNiV12-1-1	M13J	0,20 to 0,25	0,50	0,50 to1,00	0,040	0,025	—	11,0 to12,5	0,75 to 1,25	0,50 to1,00	V: 0,20 to 0,30 W: 0,75 to 1,25
4923-422-77-E	X22CrMoV12-1	M13H	0,18 to 0,24	0,50	0,40 to 0,90	0,025	0,015	—	11,0 to 12,5	0,8 to 1,2	0,30 to 0,80	V: 0,25 to 0,35
4028-420-00-I	X30Cr13	M13M (85)	0,26 to 0,35	1,00	1,50	0,040	0,030[b]	—	12,0 to 14,0	—	—	—
4029-420-20-I	X33CrS13	M13N	0,25 to 0,40	1,00	1,50	0,060	⩾ 0,15	—	12,0 to 14,0	0,60	0,60	—
4643-420-72-J	X33CrPb13	M13O	0,26 to 0,40	1,00	1,00	0,040	0,030	—	12,0 to 14,0	—	—	Pb: 0,05 to 0,30
4031-420-00-I	X39Cr13	M13P (86)	0,36 to 0,42	1,00	1,00	0,040	0,030[b]	—	12,5 to 14,5	—	—	—
4419-420-97-E	X38CrMo14	M14P	0,36 to 0,42	1,00	1,00	0,040	0,015	—	13,0 to 14,5	0,60 to 1,00	—	—
4123-431-77-E	X40CrMoVN16-2	M18T	0,35 to 0,50	1,00	1,00	0,040	0,015	0,10 to 0,30	14,0 to 16,0	1,00 to 2,50	0,50	V: 1,50
4034-420-00-I	X46Cr13	M13Q (87)	0,43 to 0,50	1,00	1,00	0,040	0,030[b]	—	12,5 to 14,5	—	—	—
4035-420-74-E	X46CrS13	M13R	0,43 to 0,50	1,00	2,00	0,040	0,15 to 0,35	—	12,5 to 14,0	—	—	—
4038-420-00-I	X52Cr13	M13U (88)	0,48 to 0,55	1,00	1,00	0,040	0,030[b]	—	12,5 to 14,5	—	—	—
4110-420-69-E	X55CrMo14	M14U	0,48 to 0,60	1,00	1,00	0,040	0,015	—	13,0 to 15,0	0,50 to 0,80	—	V: 0,15
4039-420-09-I	X60Cr13	M13V (89)	0,56 to 0,65	1,00	1,00	0,040	0,030[b]	—	12,5 to 14,5	—	—	—
4313-415-00-I	X3CrNiMo13-4	M17A (81)	0,05	0,70	0,50 to 1,00	0,040	0,015	—	12,0 to 14,0	0,30 to 1,00	3,5 to 4,5	—
4415-415-92-E	X2CrNiMoV13-5-2	M20A	0,030	0,50	0,50	0,040	0,015	—	11,5 to 13,5	1,50 to 2,50	4,5 to 6,5	Ti: 0,010 V: 0,10 to 0,50
4116-420-77-E	X50CrMoV15	M15U	0,45 to 0,55	1,00	1,00	0,040	0,015	—	14,0 to 15,0	0,50 to 0,80	—	V: 0,10 to 0,20
4057-431-00-X	X17CrNi16-2	M18G (91)	0,12 to 0,22	1,00	1,50	0,040	0,030	—	15,0 to 17,0	—	1,50 to 2,50	—
4058-429-99-J	X33Cr16	M16O	0,25 to 0,40	1,00	1,00	0,040	0,030	—	15,0 to 17,0	—	—	—
4418-431-77-E	X4CrNiMo16-5-1	M22A	0,06	0,70	1,50	0,040	0,015	⩾ 0,020	15,0 to 17,0	0,80 to 1,50	4,0 to 6,0	—

Table 1 (*continued*)

Steel designation			% (mass fraction)[a]									
ISO number	**ISO name**	**Line** (old)	**C**	**Si**	**Mn**	**P**	**S**	**N**	**Cr**	**Mo**	**Ni**	**Others**
d) Martensitic steels												
4019-430-20-I	X14CrS17	M17F (90)	0,10 to 0,17	1,00	1,50	0,040	⩾ 0,15	—	16,0 to 18,0	0,60	—	—
4122-434-09-I	X39CrMo17-1	M18R (92)	0,33 to 0,45	1,00	1,50	0,040	0,015	—	15,5 to 17,5	0,80 to 1,30	1,00	—
4040-440-02-X	X68Cr17	M17U	0,60 to 0,75	1,00	1,00	0,040	0,030	—	16,0 to 18,0	0,75	0,60	—
4041-440-03-X	X85Cr17	M17V	0,75 to 0,95	1,00	1,00	0,040	0,030	—	16,0 to 18,0	0,75	0,60	—
4023-440-04-I	X110Cr17	M17W	0,95 to 1,20	1,00	1,00	0,040	0,030	—	16,0 to 18,0	0,75	0,60	—
4025-440-74-X	X110CrS17	M17Z	0,95 to 1,20	1,00	1,25	0,060	⩾ 0,15	—	16,0 to 18,0	0,75	0,60	—
4766-440-77-X	X80CrSiNi20-2	M20U	0,75 to 0,85	1,75 to 2,25	0,20 to 0,60	0,030	0,030	—	19,0 to 20,50	—	1,15 to 1,65	—
e) Precipitation-hardening steels												
4594-155-92-E	X5CrNiMoCuNb14-5	P19I	0,07	0,70	1,00	0,040	0,015	—	13,0 to 15,0	1,20 to 2,00	5,0 to 6,0	Cu: 1,20 to 2,00 Nb: 0,15 to 0,60
4542-174-00-I	X5CrNiCuNb16-4	P20I (101)	0,07	1,00	1,50	0,040	0,030[b]	—	15,0 to 17,0	0,60	3,0 to 5,0	Cu: 3,0 to 5,0 Nb: 0,15 to 0,45
4568-177-00-I	X7CrNiAl17-7	P24L (102)	0,09	1,00	1,00	0,040	0,015	—	16,0 to 18,0	—	6,5 to 7,8[i]	Al: 0,70 to 1,50
4530-455-77-E	X1CrNiMoAlTi12-9-2	P23A	0,015	0,10	0,10	0,010	0,005	0,01	11,5 to 12,5	1,85 to 2,15	8,5 to 9,5	Ti: 0,28 to 0,37 Al: 0,60 to 0,80
4596-455-77-E	X1CrNiMoAlTi12-10-2	P24A	0,015	0,10	0,10	0,010	0,005	0,02	11,5 to 12,5	1,85 to 2,15	9,2 to 10,2	Ti: 0,28 to 0,40 Al: 0,80 to 1,10
4532-157-00-I	X8CrNiMoAl15-7-2	P24M (103)	0,10	1,00	1,20	0,040	0,015	—	14,0 to 16,0	2,00 to 3,00	6,5 to 7,8	Al: 0,75 to 1,50
4534-138-00-X	X3CrNiMoAl13-8-3	P24H	0,05	0,10	0,20	0,010	0,008	0,010	12,3 to 13,2	2,00 to 3,00	7,5 to 8,5	Al: 0,90 to 1,35
4645-469-10-U	X2CrNiMoCuAlTi12-9-4-3[e]	P25A	0,030	0,70	1,00	0,030	0,015	—	11,0 to 13,0	3,5 to 5,0	8,0 to 10,0	Al: 0,15 to 0,50 Cu: 1,50 to 3,5 Ti: 0,50 to 1,20
4457-350-00-X	X9CrNiMoN17-5-3	P25M	0,07 to 0,11	0,50	0,50 to 1,25	0,040	0,030	0,07 to 0,13	16,0 to 17,0	2,5 to 3,2	4,0 to 5,0	—
4980-662-86-X	X6NiCrTiMoVB25-15-2	P42J	0,08	1,00	2,00	0,040	0,030	—	13,5 to 16,0	1,00 to 1,50	24,0 to 27,0	Ti: 1,90 to 2,35 Al: 0,35 V: 0,10 to 0,50 B: 0,001 to 0,010
4644-662-20-U	X4NiCrMoTiMnSiB26-14-3-2	P43J	0,08	0,40 to 1,00	0,40 to 1,00	0,040	0,030	—	12,0 to 15,0	2,0 to 3,5	24,0 to 28,0	Ti: 1,80 to 2,10 Al: 0,35 B: 0,001 to 0,010