

# ISO/TR 4644:2021 (E)

## Nickels, ferronickels and nickel alloys — Standards for the determination of chemical composition

---

### Contents

	Foreword
1	Scope
2	Normative references
3	Terms and definitions
4	International Standards for the determination of the chemical composition of nickels, ferronickels and nickel alloys
4.1	Nickels
4.2	Ferronickels
4.3	Nickel alloys
5	Range of application and principle of the methods
5.1	Nickels
5.1.1	Silver, bismuth, cadmium, cobalt, copper, iron, manganese, lead and zinc [Ag, Bi, Cd, Co, Cu, Fe, Mn, Pb and Zn]
5.1.2	Silver, arsenic, bismuth, cadmium, lead, antimony, selenium, tin, tellurium and thallium [Ag, As, Bi, Cd, Pb, Sb, Se, Sn, Te and Tl]
5.1.3	Boron, B
5.1.4	Phosphorus, P
5.1.5	Sulfur, S
5.2	Ferronickels
5.2.1	Carbon, C
5.2.2	Chromium, cobalt, copper, manganese and phosphorus [Cr, Co, Cu, Mn and P]
5.2.3	Cobalt, Co
5.2.4	Nickel, Ni
5.2.5	Phosphorus, P
5.2.6	Sulfur, S
5.2.7	Silicon, Si
5.3	Nickel alloys
5.3.1	Aluminium, Al
5.3.2	Boron, B
5.3.3	Cobalt, chromium, copper, iron and manganese [Co, Cr, Cu, Fe and Mn]
5.3.4	Chromium, Cr
5.3.5	Molybdenum, Mo
5.3.6	Niobium, Nb
5.3.7	Nickel, Ni
5.3.8	Phosphorus, P
5.3.9	Lead, Pb
5.3.10	Sulfur, S
5.3.11	Silicon, Si
5.3.12	Tantalum, Ta
5.3.13	Titanium, Ti
5.3.14	Vanadium, V
Annex A	(informative) Graphical representation of the scope of methods described in this document
Annex B	(informative) Bilingual key of the abbreviated terms used in the figures given in Annex A