UDC 669.3

Ref. No.: ISO/R 429 - 1965 (E)

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION
R 429

CLASSIFICATION OF COPPER-NICKEL ALLOYS

1st EDITION
March 1965

For each individual country the only valid standard is the national standard of that country.

Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 429, *Classification of Copper-Nickel Alloys*, was drawn up by Technical Committee ISO/TC 26, *Copper and Copper Alloys*, the Secretariat of which is held by the Deutscher Normenausschuss (DNA).

Work on this question by the Technical Committee began in 1960 and led, in 1962, to the adoption of a Draft ISO Recommendation.

In December 1962, this Draft ISO Recommendation (No. 547) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies:

Australia	Germany	Romania
Belgium	Greece	Spain
Brazil	India	Sweden
Canada	Iran	Switzerland
Chile	Italy	Turkey
Denmark	Japan	United Kingdom
Finland	Netherlands	Yugoslavia
France	Poland	

One Member Body opposed the approval of the Draft: U.S.S.R.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in March 1965, to accept it as an ISO RECOMMENDATION.

ISO Recommendation R 429 March 1965

CLASSIFICATION OF COPPER-NICKEL ALLOYS

1. SCOPE

This ISO Recommendation relates to the chemical composition and forms of semi-manufactured products of the following wrought copper alloys:

Copper-nickel alloys,

currently available in commercial quantities.

It is intended as a classification and not as a specification for the various types. For the classification principles, see Appendix.

2. GENERAL

The chemical compositions given below show only the main constituent elements and usual impurities. It is the responsibility of the supplier to ensure that any element not specifically limited by this ISO Recommendation is not present in an amount such as is generally accepted as having an adverse effect on the product. If the purchaser's requirements necessitate limits for any element not specified, these should be agreed upon between supplier and purchaser.

3. CHEMICAL COMPOSITION (PER-CENT)

TABLE 1

Designation	Ni	Fe	Mn	Cu	Maximum impurities					Other elements*	Average density**
					Fe	Sn+Pb	Zn	S	C	Total	kg/dm³
Cu Ni5 Fe1 Mn	4.0-6.0	0.9-1.5	0.3-0.8	The remainder	—	0.05	0.3	0.05	0.05	0.1	8.90
Cu Ni10 Fe1 Mn	9.0-11.0	0.5-2.0	0.3-1.0		—	0.05	0.5	0.05	0.05	0.1	8.90
Cu Ni20	19.0-22.0	—	0-0.5		0.3	0.05	0.2	0.05	0.05	0.1	8.95
Cu Ni20 Mn1 Fe	19.0-22.0	0.4-1.0	0.5-1.5		—	0.05	0.5	0.05	0.05	0.1	8.95
Cu Ni25	24.0-27.0	—	0-0.5		0.3	0.05	0.2	0.05	0.05	0.1	8.95
Cu Ni30	29.0-32.0	—	0-0.5		0.5	0.05	0.2	0.08	0.06	0.1	8.95
Cu Ni30 Mn1 Fe	29.0-32.0	0.4-1.0	0.5-1.5		—	0.05	0.5	0.08	0.06	0.2	8.90
Cu Ni44 Fe Mn	43.0-45.0	0-0.5	0-1.0		—	0.02	0.2	0.08	0.06	0.1	8.90

* Co maximum 0.5 per cent. Co counts as Ni.
** For information only.

4. FORMS OF SEMI-MANUFACTURED PRODUCTS

TABLE 2

Alloy	Plate, Sheet	Strip	Rod, Bar	Sections*	Tube	Wire	Forgings
Cu Ni5 Fe1 Mn	x	(x)			x	(x)	
Cu Ni10 Fe1 Mn	x	(x)			x		
Cu Ni20	x	x	x	x	(x)	(x)	
Cu Ni20 Mn1 Fe	x	(x)			x		
Cu Ni25	(x)	x				x	
Cu Ni30	x	(x)			(x)	(x)	
Cu Ni30 Mn1 Fe					x		
Cu Ni44 Fe Mn		x				x	

* sections or shapes made by extruding, or by a combination of extruding and drawing.

x indicates the main forms manufactured.

(x) indicates forms manufactured in smaller quantities, e.g. in certain countries only or for special purposes.

If no symbol is given the form is not considered of importance for that alloy, but it does not necessarily indicate that such a product cannot be manufactured.