

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 209

COMPOSITION OF WROUGHT PRODUCTS
OF ALUMINIUM AND ALUMINIUM ALLOYS
CHEMICAL COMPOSITION (PER CENT)

3rd EDITION

August 1971

This third edition supersedes the second edition

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BRIEF HISTORY

The ISO Recommendation R 209, *Composition of wrought products of aluminium and aluminium alloys*, was drawn up by Technical Committee ISO/TC 79, *Light metals and their alloys*, the Secretariat of which is held by the Association Française de Normalisation (AFNOR).

Work on this question by the Technical Committee began in 1956 and led, in 1958, to the adoption of a Draft ISO Recommendation.

In November 1959, this Draft ISO Recommendation (No. 327) was circulated to all the ISO Member Bodies for enquiry. It was approved by 22 Member Bodies and disapproved by 1 Member Body.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in July 1961, to accept it as an ISO RECOMMENDATION.

BRIEF HISTORY CONCERNING THE 2nd EDITION

Work on the revision of ISO Recommendation R 209-1961 led to the adoption of Draft ISO Recommendation No. 1066, which was circulated to all the ISO Member Bodies for enquiry in August 1966. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Australia	Hungary	Sweden
Austria	India	Thailand
Belgium	Japan	Turkey
Brazil	Korea, Rep. of	U.A.R.
Canada	Netherlands	United Kingdom
Chile	Norway	U.S.A.
Czechoslovakia	Poland	U.S.S.R.
France	South Africa, Rep. of	Yugoslavia
Germany	Spain	

Two Member Bodies opposed the approval of the Draft :

Italy
Switzerland

The Draft Revision of ISO Recommendation R 209-1961 was then submitted by correspondence to the ISO Council which decided, in March 1968, to accept it.

The new title, *Composition of wrought products of aluminium and aluminium alloys – Chemical composition (per cent)*, superseded the title of the first edition : *Composition of wrought products of aluminium and aluminium alloys*.

BRIEF HISTORY CONCERNING THE 3rd EDITION

The third edition of ISO Recommendation R 209, drawn up by Technical Committee ISO/TC 79, results from a Draft Revision, which was the subject of Draft ISO Recommendation No. 2087.

This Draft ISO Recommendation was circulated to all ISO Member Bodies for enquiry in July 1970. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Belgium	Israel	South Africa, Rep. of
Canada	Italy	Spain
Czechoslovakia	Korea, Rep. of	Sweden
Finland	Netherlands	Switzerland
France	New Zealand	Thailand
Germany	Norway	U.A.R.
Greece	Poland	United Kingdom
India	Portugal	U.S.A.
Iran	Romania	U.S.S.R.

The following Member Body opposed the approval of the Draft :

Japan

This Draft ISO Recommendation, included in a Draft Revision of ISO Recommendation R 209, was then submitted by correspondence to the ISO Council, which decided to accept it as the third edition of ISO Recommendation R 209.

This third edition of ISO Recommendation R 209 supersedes all previous editions and cancels the second edition.

**COMPOSITION OF WROUGHT PRODUCTS
OF ALUMINIUM AND ALUMINIUM ALLOYS
CHEMICAL COMPOSITION (PER CENT)**

1. SCOPE

This ISO Recommendation specifies the chemical composition (per cent) of wrought products of aluminium and aluminium alloys.

2. ALUMINIUM

TABLE 1

Grade (ISO symbol)	Maximum impurities					
	Cu	Si	Fe	Mn	Zn	Total Cu+ Si+ Fe+ Mn+ Zn
Al 99.0	0.10	0.5	0.8	0.1	0.1	1.0
Al 99.5	0.05	0.3	0.4	0.05	0.10	0.5
Al 99.7	0.03	0.20	0.25	0.03	0.07	0.3
Al 99.8	0.03	0.15	0.15	0.03	0.06	0.2

3. ALUMINIUM ALLOYS

TABLE 2

Alloy (ISO symbol)	Chemical composition									Remarks	Al
	Cu	Mg	Si	Fe	Mn	Zn	Cr	Ti+ Zr			
Al 99.0 Cu	min. 0.05 max. 0.20		— 0.5	— 0.8	— 0.1	— 0.1				Cu+ Si+ Fe+ Mn+ Zn : 1.0 max.	The remainder
Al-Mn 1	min. — max. 0.1	— 0.3	— 0.6	— 0.7	0.8 1.5	— 0.2				Ti+ Zr+ Cr : 0.2 max.	
Al-Mn 1 Cu	min. 0.05 max. 0.20		— 0.6	— 0.7	1.0 1.5	— 0.2				Ti+ Zr+ Cr : 0.2 max.	
Al-Mg 1	min. — max. 0.20	0.5 1.1	— 0.4	— 0.7	— 0.2	— 0.2	— 0.1	— 0.2			
Al-Mg 1.5	min. — max. 0.20	1.1 1.8	— 0.4	— 0.7	— 0.3	— 0.2	— 0.1	— 0.2			
Al-Mg 2	min. — max. 0.10	1.7 2.4	— 0.5	— 0.5	— 0.5	— 0.2	— 0.35	— 0.2		Mn+ Cr : 0.5 max.	
Al-Mg 2.5	min. — max. 0.10	2.2 2.8	— 0.5	— 0.5	— 0.5	— 0.2	— 0.35	— 0.2		Mn+ Cr : 0.5 max.	
Al-Mg 3	min. — max. 0.10	2.4 3.1	— 0.5	— 0.5	— 0.4	— 0.2	— 0.35	— 0.2			
Al-Mg 3 Mn	min. — max. 0.10	2.4 3.4	— 0.5	— 0.5	0.3 1.0	— 0.2	— 0.25	— 0.2			
Al-Mg 3.5	min. — max. 0.10	3.1 3.9	— 0.5	— 0.5	— 0.6	— 0.2	— 0.35	— 0.2			