



**International Alloy Designations
and
Chemical Composition Limits
for
Wrought Aluminum and
Wrought Aluminum Alloys**

Unified North American and International Registration Records

The Aluminum Association

Incorporated

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FOREWORD

Listed herein are designations and chemical composition limits for wrought aluminum and wrought aluminum alloys registered with The Aluminum Association. Numerical designations are assigned in accordance with the *Recommendation—International Designation System for Wrought Aluminum and Wrought Aluminum Alloys*, which is printed on pages 18 through 20. Additions may be made in accordance with the rules outlined in the Declaration of Accord printed on page 21, and alloys will be deleted when no longer in commercial use (see table of inactive alloys).

Since the International Designation System for Wrought Aluminum and Wrought Aluminum Alloys is based on USA's national standard "*American National Standard Alloy and Temper Designation System for Aluminum ANSI H35.1*," the system limits introduction of experimental alloy compositions to USA registrations. An experimental alloy registered by USA under this system is indicated by the prefix "X" and is subject to the following rules:

1. A composition shall not be designated as experimental ("X") for more than five years.
2. The "X" is dropped when the alloy is no longer experimental.
3. An experimental composition that is inactivated shall retain the prefix "X" for the duration of its inactive status. If reactivated, the "X" shall be removed.

Some of the registered alloys may be the subject of patent or patent applications, and their listing herein is not to be construed in any way as the granting of a license under such patent right.

A list of the organizations that are signatories to the Declaration of Accord on the Recommendation is printed on pages ii-iii.

SIGNATORIES TO THE DECLARATION OF ACCORD

The following organizations are signatories to the Declaration of Accord on an International Alloy Designation System for Wrought Aluminum and Wrought Aluminum Alloys which is printed on page 21 of this publication.

The Aluminum Association Inc. 900 19th Street, N.W. Washington, D.C. 20006 <u>USA</u>	USA	Australian Aluminium Council Limited Level 1, Dickson Square P. O. Box 63 Dickson, ACT 2602 <u>AUSTRALIA</u>	AUSTRALIA
All-Russian Institute of Aviation Materials (VIAM) 17 Radio Ulitza 105005 Moscow <u>RUSSIA</u>	RUSSIA	Aluminium Center Belgium Boulevard A. Reyers 80 B-1030, Brussels <u>BELGIUM</u>	BELGIUM
Aluminium Association of Canada 1010 Sherbrooke Street West, Suite 1600 Montreal, Quebec H3A2R7 <u>CANADA</u>	CANADA	Centro Nacional de Investigaciones Metalurgicas (CENIM) Avda. Gregorio del Amo, 8 Ciudad Universitaria 28040 Madrid <u>SPAIN</u>	SPAIN
Aluminium Federation Limited Broadway House, Calthorpe Road, Five Ways Birmingham B15 1TN <u>UNITED KINGDOM</u>	UK	China Nonferrous Metals Techno-Economic Research Institute No. 9 Xizhang Hutong, Xizhimennei Street Beijing, 100035 <u>PEOPLES REPUBLIC OF CHINA</u>	CHINA
Aluminium Federation of South Africa P. O. Box 423 Isando, 1600 <u>REPUBLIC OF SOUTH AFRICA</u>	SOUTH AFRICA	European Aluminium Association Avenue de Broqueville, 12 B-1150 Brussels <u>BELGIUM</u>	EAA
Gesamtverband Der Deutschen Aluminium- industrie e.V. Am Bonnheshof 5 D-40474 Dusseldorf <u>GERMANY</u>	GERMANY	Fachverband der Metallindustrie Oesterreichs Wiedner Hauptstrasse 63 Postfach 338 A-1045 Wien IV <u>AUSTRIA</u>	AUSTRIA
Associacao Brasileira Do Aluminio—ABAL Rua Humberto 1, No. 220-4 Andar Vila Mariana 04018-030 Sao Paulo-SP <u>BRAZIL</u>	BRAZIL	Federation Des Chambres Syndicales Des Minerais Mineraux Industriels Et Metaux Non Ferreux 30, Avenue de Messine F-75008 Paris <u>FRANCE</u>	FRANCE
The European Association of Aerospace Industries—Standardization Gulledelle 96 B-1200 Bruxelles <u>BELGIUM</u>	A.E.C.M.A.	RAM—Instituto Argentino De Normalizacion Peru 556 C1068AAB Buenos Aires <u>ARGENTINA</u>	ARGENTINA
Assomet Associazione Nazionale Industrie Metalli Non Ferrosi Centro Direzionale Ambrosiano—Pal. A/1 Via Dei Missaglia, 97 20142 Milano <u>ITALY</u>	ITALY		

SIGNATORIES (Continued)

Instituto Mexicano del Alumino, A.C. Petarca 133-9 Piso Col. Polanco <u>MEXICO</u> , 11560, DF	MEXICO	S.C. Alprom S.A. 1 Milcov Street Slatina 0500, Olt County <u>ROMANIA</u>	ROMANIA
Institute of Non-Ferrous Metals Light Metals Divison 32-050 Skawina Ul. Pilsudskiego 19 <u>POLAND</u>	POLAND	Skandaluminium P. O. Box 7076 Majorstua N-0306 Oslo <u>NORWAY</u>	DENMARK FINLAND NORWAY SWEDEN
Japan Aluminium Association Tsukamoto-Sozan Building 2-15, Ginza 4-Chome Tokyo, Chuo-ku, 104-0061 <u>JAPAN</u>	JAPAN	Vereniging Nederlands Aluminium Instituut P.O. Box 190 2700 AD Zoetermeer <u>NETHERLANDS</u>	NETHERLANDS
Peruvian Aluminum Association (APAL) Carretera Central Km 8.6 Ate—Vitarte Lima 03 <u>PERU</u>	PERU	Vereinigung Schweizerischer Aluminium-Halbzeugwerke (VSAH) Dufourstrasse 31 Postfach CH-8024 Zurich <u>SWITZERLAND</u>	SWITZERLAND

CHEMICAL COMPOSITION LIMITS^{1/2}

Only composition limits which are identical to those listed herein for a registered designation are applicable to that designation.

NATURAL IMPURITY LIMITS FOR WROUGHT UNALLOYED ALUMINUM

REGISTERED DESIGNATION														OTHERS ^{3/2}		ALUMINUM	
AA No.	DATE	BY	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Ca	V	Each	Total ^{3/2}	Minimum	
1035	1973-08-22	USA	0.35	0.6	0.10	0.05	0.05	...	...	0.10	0.03	...	0.05	0.03	...	99.35 ⁴	
1040	1973-08-22	USA	0.30	0.50	0.10	0.05	0.05	...	...	0.10	0.03	...	0.05	0.03	...	99.40 ⁴	
1045	1973-08-22	USA	0.30	0.45	0.10	0.05	0.05	...	...	0.05	0.03	...	0.05	0.03	...	99.45 ⁴	
1050	1954-07-01	USA	0.25	0.40	0.05	0.05	0.05	...	...	0.05	0.03	...	0.05	0.03	...	99.50 ⁴	
1050A	1972-09-22	EAA	0.25	0.40	0.05	0.05	0.05	...	...	0.07	0.05	...	...	0.03	...	99.50 ⁴	
1060	1954-07-01	USA	0.25	0.35	0.05	0.03	0.03	...	...	0.05	0.03	...	0.05	0.03	...	99.60 ⁴	
1065	1973-08-22	USA	0.25	0.30	0.05	0.03	0.03	...	...	0.05	0.03	...	0.05	0.03	...	99.65 ⁴	
1070	1954-07-01	USA	0.20	0.25	0.04	0.03	0.03	...	...	0.04	0.03	...	0.05	0.03	...	99.70 ⁴	
1070A	1972-09-22	EAA	0.20	0.25	0.03	0.03	0.03	...	...	0.07	0.03	...	...	0.03	...	99.70 ⁴	
1080	1954-07-01	USA	0.15	0.15	0.03	0.02	0.02	...	...	0.03	0.03	0.03	0.05	0.02	...	99.80 ⁴	
1080A	1972-09-22	EAA	0.15	0.15	0.03	0.02	0.02	...	...	0.06	0.02	0.03	...	0.02	...	99.80 ⁴	
1085	1954-07-01	USA	0.10	0.12	0.03	0.02	0.02	...	...	0.03	0.02	0.03	0.05	0.01	...	99.85 ⁴	
1090	1954-07-01	USA	0.07	0.07	0.02	0.01	0.01	...	...	0.03	0.01	0.03	0.05	0.01	...	99.90 ⁴	
1098	1972-02-15	GERMANY	0.010	0.006	0.003	...	...	...	...	0.015	0.003	...	...	0.003	...	99.98 ⁵	

REGISTERED COMPOSITIONS

REGISTERED DESIGNATION																OTHERS ^{3/2}		ALUMINUM
AA No.	DATE	BY	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Ca	V	Each	Total ^{3/2}	Minimum		
1100	1954-07-01	USA		0.95 Si + Fe	0.05-0.20	0.05	....	....	....	0.10	....	....	....	0.05	0.15	99.00 ⁴		
1200	1966-09-23	USA		1.00 Si + Fe	0.05	0.05	....	....	....	0.10	0.05	....	....	0.05	0.15	99.00 ⁴		
1200A	1991-03-22	NORWAY		1.00 Si + Fe	0.10	0.30	0.30	0.10	....	0.20-0.50	....	....	....	0.05	0.15	99.00 ⁴		
1300 ^{6/8}	2006-12-13	FRANCE	0.20	0.30	0.05	0.03	0.03	....	....	....	0.03	....	....	0.05	0.15	99.00 ⁴		
1110	1987-06-15	FRANCE	0.30	0.8	0.04	0.01	0.25	0.01	....	....	....	....	0.02 B, 0.03 V + Ti	0.03	....	99.10 ⁴		
1120	1982-07-07	AUSTRALIA	0.10	0.40	0.05-0.35	0.01	0.20	0.01	....	0.05	....	0.03	0.05 B, 0.02 V + Ti	0.03	0.10	99.20 ⁴		
1230 ^{6/8}	1954-07-01	USA		0.70 Si + Fe	0.10	0.05	0.05	....	....	0.10	0.03	....	0.05	0.03	....	99.30 ⁴		
1235	1954-07-01	USA		0.65 Si + Fe	0.05	0.05	0.05	....	....	0.10	0.06	....	0.05	0.03	....	99.35 ⁴		
1435	1959-03-05	USA	0.15	0.30-0.50	0.02	0.05	0.05	....	....	0.10	0.03	....	0.05	0.03	....	99.35 ⁴		
1145	1954-07-01	USA		0.55 Si + Fe	0.05	0.05	0.05	....	....	0.05	0.03	....	0.05	0.03	....	99.45 ⁴		
1345	1956-10-08	USA	0.30	0.40	0.10	0.05	0.05	....	....	0.05	0.03	....	0.05	0.03	....	99.45 ⁴		
1445	1973-09-14	AUSTRALIA		0.50 Si + Fe ²⁰	0.04 ²⁰	....	....	....	....	....	....	....	....	....	0.05	99.45 ⁴		
1150	1973-08-02	AUSTRALIA		0.45 Si + Fe	0.05-0.20	0.05	0.05	....	....	0.05	0.03	....	....	0.03	....	99.50 ⁴		
1350 ^{1/8}	1975-01-24	USA	0.10	0.40	0.05	0.01	....	0.01	....	0.05	....	0.03	0.05 B, 0.02 V + Ti	0.03	0.10	99.50 ⁴		
1350A	1979-02-15	GERMANY	0.25	0.40	0.02	....	0.05	....	....	0.05	....	....	0.03 Cr + Mn + Ti + V	0.03	....	99.50 ⁴		
1450	1990-11-14	EAA	0.25	0.40	0.05	0.05	0.05	....	....	0.07	0.10-0.20	....	....	0.03	....	99.50 ⁴		
1280	1954-07-01	USA		0.40 Si + Fe	0.04	0.01	0.03	....	....	0.05	0.03	....	0.05	0.03	....	99.60 ⁴		

See footnotes on page 10.

CHEMICAL COMPOSITION LIMITS^{1,2}

REGISTERED COMPOSITION—Continued

Only composition limits which are identical to those listed herein for a registered designation are applicable to that designation.

REGISTERED DESIGNATION				ALUMINUM											
AA No.	DATE	BY	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Ga	OTHERS ^{3B}		
													Each	Total ³	
			Minimum												
1370	1976-04-20	FRANCE	0.10	0.25	0.02	0.01	0.02	0.01	...	0.04	...	0.03	...	0.02 B, 0.02 V + Ti	0.10
1275	1986-03-24	SPAIN	0.08	0.12	0.05-0.10	0.02	0.02	...	...	0.03	0.02	0.03	0.03	...	99.70 ⁴
1185	1954-07-01	USA	0.15 Si + Fe	...	0.01	0.02	0.02	...	...	0.03	0.02	0.03	0.05	...	99.75 ⁴
1285	1954-07-01	USA	0.08 ⁷	0.08 ⁷	0.02	0.01	0.01	...	...	0.03	0.02	0.03	0.05	...	99.85 ⁴
1385	1987-06-15	FRANCE	0.05	0.12	0.02	0.01	0.02	0.01	...	0.03	...	0.03	...	...	99.85 ⁴
1188	1954-07-01	USA	0.06	0.06	0.005	0.01	0.01	...	...	0.03	0.01	0.03	0.05	...	99.85 ⁴
1180	1987-06-15	FRANCE	0.05	0.07	0.01	0.01	0.01	0.01	...	0.02	...	0.02	...	...	99.88 ⁴
1193	1984-09-29	USA	0.04	0.04	0.006	0.01	0.01	...	...	0.03	0.01	0.03	0.05	...	99.90 ⁴
1188	1980-10-04	FRANCE	0.010	0.006	0.006	0.006	...	...	...	0.010	0.006	0.006	...	...	99.93 ⁴
1189	1955-03-12	USA	0.006	0.006	0.006	0.002	0.006	...	...	0.006	0.002	0.005	0.005	...	99.98 ⁵
															99.99 ⁵
2001	1979-08-22	FRANCE	0.20	0.20	5.2-6.0	0.15-0.50	0.20-0.45	0.10	0.05	0.10	0.20	...	...	0.05 Zr ⁴²	0.15
2002	1975-08-25	FRANCE	0.35-0.8	0.30	1.5-2.5	0.20	0.50-1.0	0.20	...	0.20	0.20	...	...	...	0.15
2004	1980-08-07	UK	0.20	0.20	5.5-6.5	0.10	0.50	...	...	0.20	0.05	...	...	0.30-0.50 Zr	0.15
2005	1983-01-10	ARGENTINA	0.8	0.7	3.5-5.0	1.0	0.20-1.0	0.10	0.20	0.50	0.20	...	...	0.20 Bi, 1.0-2.0 Pb	0.15
2006	1983-01-10	ARGENTINA	0.8-1.3	0.7	1.0-2.0	0.6-1.0	0.50-1.4	...	0.20	0.20	0.30	...	...	...	0.15
2007	1979-02-15	GERMANY	0.8	0.8	3.3-4.8	0.50-1.0	0.40-1.8	0.10	0.20	0.8	0.20	...	...	...	0.10
2007A	2001-02-21	ITALY	0.8	0.8	3.3-4.8	0.20-1.0	0.40-1.8	0.10	0.20	0.8	0.20	...	...	...	0.30
2008	1987-07-01	USA	0.50-0.8	0.40	0.7-1.1	0.30	0.25-0.50	0.10	...	0.25	0.10	...	0.05	...	0.15
2009	1980-01-24	USA	0.25	0.05	3.2-4.4	...	1.0-1.6	...	...	0.10	...	...	...	...	0.15
2010	1980-09-21	USA	0.50	0.50	0.7-1.3	0.10-0.40	0.40-1.0	0.15	...	0.30	...	...	...	...	0.15
2011	1954-07-01	USA	0.40	0.7	5.0-6.0	...	...	...	...	0.30	...	...	...	...	0.15
2011A	1982-02-11	SWITZERLAND	0.40	0.50	4.5-6.0	...	...	...	...	0.30	...	...	...	...	0.15
2111	1989-07-07	USA	0.40	0.7	5.0-6.0	...	...	...	...	0.30	...	...	...	...	0.15
2111A	2001-02-21	ITALY	0.40	0.7	5.0-6.0	0.15	0.15	...	...	0.30	0.05	...	...	...	0.15
2111B	2001-09-05	SWITZERLAND	0.30	0.50	4.8-6.0	0.05	0.05	...	...	...	...	...	...	...	0.15
2012	1983-05-23	USA	0.40	0.7	4.0-5.5	...	...	...	...	0.30	...	...	...	0.30-0.6 Bi, 0.30-0.7 Sn	0.15
2014	1954-07-01	USA	0.50-1.2	0.7	3.9-5.0	0.40-1.2	0.20-0.8	0.10	...	0.25	0.15	...	...	...	0.15
2014A	1976-09-30	AECMA	0.50-0.9	0.50	3.9-5.0	0.40-1.2	0.20-0.8	0.10	0.10	0.25	0.15	...	...	0.20 Zr+Ti	0.15
2214	1954-07-01	USA	0.50-1.2	0.30	3.9-5.0	0.40-1.2	0.20-0.8	0.10	...	0.25	0.15	...	...	...	0.15
2017	1954-07-01	USA	0.20-0.8	0.7	3.5-4.5	0.40-1.0	0.40-0.8	0.10	...	0.25	0.15	...	...	...	0.15
2017A	1972-09-22	EAA	0.20-0.8	0.7	3.5-4.5	0.40-1.0	0.40-0.8	0.10	...	0.25	0.15	...	...	0.25 Zr+Ti	0.15
2117	1954-07-01	USA	0.8	0.7	2.2-3.0	0.20	0.20-0.50	0.10	...	0.25	...	...	...	...	0.15
2018	1954-07-01	USA	0.9	1.0	3.5-4.5	0.20	0.45-0.9	0.10	1.7-2.3	0.25	...	...	...	...	0.15
2218	1954-07-01	USA	0.9	1.0	3.5-4.5	0.20	1.2-1.8	0.10	1.7-2.3	0.25	...	...	...	...	0.15
2518	1954-07-01	USA	0.10-0.25	0.9-1.3	1.9-2.7	...	1.3-1.8	...	0.9-1.2	0.10	0.04-0.10	...	...	...	0.15
2618A	1972-09-22	EAA	0.15-0.25	0.9-1.4	1.8-2.7	0.25	1.2-1.8	...	0.8-1.4	0.15	0.20	...	...	0.25 Zr+Ti	0.15
2219 ¹⁰	1954-08-13	USA	0.20	0.30	5.6-6.8	0.20-0.40	0.02	...	...	0.10	0.02-0.10	...	0.05-0.15	0.10-0.25 Zr	0.15
2319	1959-06-05	USA	0.20	0.30	5.6-6.8	0.20-0.40	0.02	...	...	0.10	0.10-0.20	...	0.05-0.15	0.10-0.25 Zr ⁶	0.15
2419	1972-10-12	USA	0.15	0.18	5.6-6.8	0.20-0.40	0.02	...	...	0.10	0.02-0.10	...	0.05-0.15	0.10-0.25 Zr	0.15
2519	1985-02-07	USA	0.25 ^{2B}	0.30 ^{2B}	5.3-6.4	0.10-0.50	0.05-0.40	...	...	0.10	0.02-0.10	...	0.05-0.15	0.10-0.25 Zr	0.15
2021	1981-05-28	UK	0.20	0.30	5.6-6.8	0.20-0.40	0.02	...	...	0.10	0.02-0.10	...	0.05-0.15	0.10-0.25 Zr ^{2B}	0.15
2024	1954-07-01	USA	0.50	0.50	3.8-4.9	0.30-0.9	1.2-1.8	0.10	...	0.25	0.15	...	...	...	0.15
2024A	1986-02-14	FRANCE	0.15	0.20	3.7-4.5	0.15-0.8	1.2-1.5	0.10	...	0.25	0.15	...	...	...	0.15
2124	1970-10-02	USA	0.20	0.30	3.8-4.9	0.30-0.9	1.2-1.8	0.10	...	0.25	0.15	...	...	...	0.15
2224	1976-05-04	USA	0.12	0.15	3.8-4.4	0.30-0.9	1.2-1.8	0.10	...	0.25	0.15	...	...	...	0.15
2224A	1971-10-10	RUSSIA	0.10	0.15	3.8-4.5	0.40-0.8	1.2-1.6	...	0.05	0.25	0.01-0.07	...	...	...	0.15
2324	1976-05-04	USA	0.10	0.12	3.8-4.4	0.30-0.9	1.2-1.8	0.10	...	0.25	0.15	...	...	...	0.15
2424	1984-01-28	USA	0.10	0.12	3.8-4.4	0.30-0.6	1.2-1.6	...	...	0.20	0.10	...	...	...	0.15
2524	1985-11-20	USA	0.08	0.12	4.0-4.5	0.45-0.7	1.2-1.6	0.05	...	0.15	0.10	...	...	...	0.15

See footnotes on page 10.

CHEMICAL COMPOSITION LIMITS^{1,2}

Only composition limits which are identical to those listed herein for a registered designation are applicable to that designation.
REGISTERED COMPOSITION—Continued

REGISTERED DESIGNATION			Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Ca	V	OTHERS ^{3D}		ALUMINUM
AA No.	DATE	BY												Each	Total ²	
2025	1954-07-01	USA	0.50-1.2	1.0	3.8-5.0	0.40-1.2	0.05	0.10	...	0.25	0.15	...	...	0.05	0.15	Remainder
2026	1959-05-24	USA	0.05	0.07	3.6-4.3	0.30-0.8	1.0-1.8	...	...	0.10	0.06	...	...	0.05	0.15	Remainder
2027	2001-12-19	FRANCE	0.12	0.15	3.9-4.9	0.50-1.2	1.0-1.5	...	...	0.20	0.08	...	...	0.05	0.15	Remainder
2030	1972-09-22	EAA	0.8	0.7	3.3-4.5	0.20-1.0	0.50-1.3	0.10	...	0.50	0.20	...	...	0.10	0.30	Remainder
2031	1974-02-05	UK	0.50-1.3	0.8-1.2	1.8-2.8	0.50	0.8-1.2	...	0.8-1.4	0.20	0.20	...	...	0.05	0.15	Remainder
2034	1984-01-18	USA	0.10	0.12	4.2-4.8	0.8-1.3	1.3-1.9	0.05	...	0.20	0.15	...	...	0.05	0.15	Remainder
2036	1970-08-13	USA	0.50	0.50	2.2-3.0	0.8-1.3	0.30-0.6	0.10	...	0.25	0.15	...	...	0.05	0.15	Remainder
2037	1977-06-01	USA	0.50	0.50	1.4-2.2	0.10-0.40	0.30-0.8	0.10	...	0.25	0.15	...	0.05	0.05	0.15	Remainder
2038	1980-09-23	USA	0.50-1.3	0.6	0.8-1.8	0.10-0.40	0.40-1.0	0.20	...	0.50	0.15	0.05	0.05	0.05	0.15	Remainder
2039	1999-03-17	SWITZERLAND	0.20	0.30	4.5-5.5	0.20-0.50	0.40-0.8	...	...	...	0.15	0.10	0.10-0.25 Zr ²¹	0.05	0.15	Remainder
2048	1972-09-02	USA	0.15	0.20	2.8-3.8	0.20-0.6	1.2-1.8	...	...	0.10	0.10	...	...	0.05	0.15	Remainder
2080	1990-03-28	USA	0.10	0.20	3.3-4.1	0.05	1.5-2.2	...	...	0.10	...	...	0.08-0.25 Zr ⁴⁵	0.05	0.15	Remainder
2080	1994-08-06	USA	0.10	0.12	2.4-3.0	0.25	0.25	0.05	...	0.10	0.15	...	0.08-0.15 Zr ³⁰	0.05	0.15	Remainder
2091	1985-08-03	FRANCE	0.20	0.30	1.8-2.5	0.10	1.1-1.9	0.10	...	0.25	0.10	...	0.04-0.16 Zr ³⁵	0.05	0.15	Remainder
2094	1990-06-04	USA	0.12	0.15	4.4-5.2	0.25	0.25-0.8	...	...	0.25	0.10	...	0.04-0.18 Zr ⁴⁶	0.05	0.15	Remainder
2095	1990-06-04	USA	0.12	0.15	3.9-4.6	0.25	0.25-0.8	...	...	0.25	0.10	...	0.04-0.18 Zr ⁴⁷	0.05	0.15	Remainder
2195	1992-11-20	USA	0.12	0.15	3.7-4.3	0.25	0.25-0.8	...	...	0.25	0.10	...	0.08-0.16 Zr ⁵⁹	0.05	0.15	Remainder
2196	2000-12-08	USA	0.12	0.15	2.5-3.3	0.35	0.25-0.8	...	...	0.35	0.10	...	0.04-0.18 Zr ²⁷	0.05	0.15	Remainder
2097	1993-06-30	USA	0.12	0.15	2.5-3.1	0.10-0.6	0.35	...	...	0.35	0.15	...	0.08-0.16 Zr ⁸¹	0.05	0.15	Remainder
2197	1993-09-21	USA	0.10	0.10	2.5-3.1	0.10-0.50	0.25	...	...	0.05	0.12	...	0.08-0.15 Zr ⁸²	0.05	0.15	Remainder
2297	1997-08-18	USA	0.10	0.10	2.5-3.1	0.10-0.50	0.25	...	...	0.05	0.12	...	0.08-0.15 Zr ⁶⁵	0.05	0.15	Remainder
2397	2002-04-03	USA	0.10	0.10	2.5-3.1	0.10-0.50	0.25	...	...	0.05-0.15	0.12	...	0.08-0.15 Zr ⁶⁵	0.05	0.15	Remainder
2098	2000-06-22	USA	0.12	0.15	3.2-3.8	0.35	0.25-0.8	...	...	0.35	0.10	...	0.04-0.18 Zr ³⁸	0.05	0.15	Remainder
3002	1981-07-03	USA	0.08	0.10	0.15	0.05-0.25	0.05-0.20	...	...	0.05	0.03	...	...	0.03	0.10	Remainder
3102	1972-03-01	USA	0.40	0.7	0.10	0.05-0.40	...	...	...	0.30	0.10	...	...	0.05	0.15	Remainder
3003	1954-07-01	USA	0.6	0.7	0.05-0.20	1.0-1.5	...	...	...	0.20	...	...	...	0.05	0.15	Remainder
3103	1972-09-22	EAA	0.50	0.7	0.10	0.9-1.5	0.30	0.10	...	0.20	...	...	0.10 Zr + Ti	0.05	0.15	Remainder
3103A	1991-03-22	NORWAY	0.50	0.7	0.10	0.7-1.4	0.30	0.10	...	0.20	...	...	0.10 Zr + Ti	0.05	0.15	Remainder
3103B	2002-04-05	USA	0.50-1.3	0.8	0.50	0.7-1.3	0.50	...	...	0.50	0.20	...	6	0.05	0.15	Remainder
3203	1973-08-22	AUSTRALIA	0.6	0.7	0.05	1.0-1.5	...	...	...	0.10	...	...	...	0.05	0.15	Remainder
3403	2001-05-14	USA	1.3	0.8	0.50	0.8-1.5	0.6	0.10	...	0.40	0.10	...	...	0.05	0.15	Remainder
3004	1954-07-01	USA	0.30	0.7	0.25	1.0-1.5	0.8-1.3	...	...	0.25	...	...	...	0.05	0.15	Remainder
3004A	1985-07-09	AUSTRALIA	0.40	0.7	0.25	0.8-1.5	0.8-1.5	0.10	...	0.25	0.05	...	0.03 Pb	0.05	0.15	Remainder
3104	1978-08-30	USA	0.6	0.8	0.05-0.25	0.8-1.4	0.8-1.3	...	...	0.25	0.10	0.05	...	0.05	0.15	Remainder
3204	1991-07-11	USA	0.30	0.7	0.10-0.25	0.8-1.5	0.8-1.5	...	...	0.40	0.10	...	...	0.05	0.15	Remainder
3304	2001-05-14	USA	0.7	0.8	0.6	0.8-1.4	0.8-1.4	0.10	...	0.40	0.10	...	...	0.05	0.15	Remainder
3005	1954-07-01	USA	0.6	0.7	0.30	1.0-1.5	0.20-0.6	0.10	...	0.25	0.10	...	...	0.05	0.15	Remainder
3005A	1997-06-12	NORWAY	0.7	0.8	0.30	1.0-1.5	0.20-0.6	0.10	...	0.40	0.10	...	...	0.05	0.15	Remainder
3105	1960-05-27	USA	0.6	0.7	0.30	0.30-0.8	0.20-0.8	0.20	...	0.40	0.10	...	...	0.05	0.15	Remainder
3105A	1990-10-04	FRANCE	0.6	0.7	0.30	0.30-0.8	0.20-0.8	0.20	...	0.25	0.10	...	...	0.05	0.15	Remainder
3105B	1997-06-12	NORWAY	0.7	0.9	0.30	0.30-0.9	0.20-0.8	0.20	...	0.50	0.10	...	0.10 Pb	0.05	0.15	Remainder
3006	1973-08-24	USA	0.50	0.7	0.10-0.30	0.50-0.8	0.30-0.6	0.20	...	0.15-0.40	0.10	...	...	0.05	0.15	Remainder
3007	1976-03-17	USA	0.50	0.7	0.05-0.30	0.30-0.8	0.6	0.20	...	0.40	0.10	...	...	0.05	0.15	Remainder
3107	1977-11-11	SPAIN	0.6	0.7	0.05-0.15	0.40-0.9	...	...	...	0.20	0.10	...	...	0.05	0.15	Remainder
3207	1979-02-15	GERMANY	0.30	0.45	0.10	0.40-0.8	0.10	...	...	0.10	...	...	...	0.05	0.15	Remainder
3207A	1990-11-28	NORWAY	0.35	0.6	0.25	0.30-0.8	0.40	0.20	...	0.25	...	...	...	0.05	0.15	Remainder
3307	1986-08-20	USA	0.6	0.8	0.30	0.50-0.9	0.30	0.20	...	0.40	0.10	...	...	0.05	0.15	Remainder
3009	1978-03-03	GERMANY	1.0-1.8	0.7	0.10	1.2-1.8	0.10	0.05	0.05	0.05	0.10	...	0.10 Zr	0.05	0.15	Remainder
3010	1978-08-25	USA	0.10	0.20	0.03	0.20-0.9	...	0.05-0.40	...	0.05	0.05	...	0.10-0.30 Zr	0.03	0.10	Remainder
3011	1978-08-25	USA	0.40	0.7	0.05-0.20	0.8-1.2	...	0.10-0.40	...	0.10	0.10	...	...	0.05	0.15	Remainder
3012	1983-01-10	ARGENTINA	0.6	0.7	0.10	0.50-1.1	0.10	0.20	...	0.10	0.10	...	...	0.05	0.15	Remainder

See footnotes on page 10.