

Aluminum Alloy and its Spproximate Equivalents

UK / INDIA	ISO	EN AC-	FRANCE	GERMANY	ITALY UNI	USA AA / ASTM	USA SAE	JAPAN
LM 0	Al 99.5		A5		3950	150		
LM 2	Al-Si10Cu2Fe	46 100	A-S9U3-Y4		5076	384	383	ADC 12
LM 4	Al-Si6Cu3	45 200	A-S5U3	G-AlSi6Cu4 (225)	3052	319	326	AC 2A
LM 5	Al-Mg5Si1 AlMg6	51 300	AG6	G-AlMg5 (244)	3058	514	320	AC 7A
LM 6	Al-Si12 Al-Si12Fe	44 100	AS 13	G-AlSi12 (230)	4514	A413		AC 3A
LM 9	Al-Si10Mg	43 100	A-S10G	G-AlSi10Mg (233)	3049	A360	309	AC 4A
LM 12	Al-Cu10Si2Mg		A-U10G		3041	222	34	
LM 13	Al-Si12Cu Al-Si12CuFe	48 000	A-S12UN		3050	336	321	AC 8A
LM 16	Al-Si5Cu1Mg	45 300	A-S4UG		3600	355	322	AC 4D
LM 20	Al-Si12Cu Al-Si12CuFe	47 000	A-S12-Y4	G-AlSi12(Cu) (231)	5079	A413	305	
LM 21	Al-Si6Cu4	45 000	A-S5U2	G-AlSi6Cu4 (225)	7369/4	308	326	AC 2A
LM 22	Al-Si5Cu3	45 400	A-S5U	G-AlSi6Cu4 (225)	3052	319	326	AC 2A
LM 24	Al-Si8Cu3Fe	46 500	A-S9U3A-Y4	G-AlSi8Cu3 (226)	5075 3601	A380	306	AC 4B ADC10
LM 25	Al-Si7Mg	42 000	A-S7G	G-AlSi7Mg	3599	A356	323	AC 4C
LM 26	Al-Si9Cu3Mg-		A-S7U3G		3050	332	332	
LM 27	Al-Si7Cu2Mn0.5	46 600			7369			AC 2B
LM 28	Al-Si19CuMgNi				6251			
LM 29	Al-Si23CuMgNi				6251			
LM 30	Al-Si17Cu4Mg					390		
LM 31	Al-Zn5	71 000	A-Z5G		3602	712	310	

Aluminum Alloy and its Recommended end use

LM 0	Alloy suitable for Sand Casting, components for Electrical, Chemical and Food Processing Industries.
LM 2	One of the two most widely used alloys for all types of die-castings.
LM 4	The most versatile of the alloys, has very good casting characteristics and is used for a very wide range of applications. Strength and Hardness can be greatly increased by Heat Treatment.
LM 5	Suitable for Sand and Chill Castings requiring maximum corrosion resistance i.e. castings of marine application.
LM 6	Suitable for large, intricate and thin walled castings in all types of moulds, also used where corrosion resistance or ductility is required.
LM 9	Used for applications especially low pressure die casting requiring the characteristics of LM 6 with higher tensile strength after heat treatment.
LM 12	Mainly used for sand and chill castings requiring high strength and shock resistance. Requires special foundry techniques and heat treatment.
LM 13	Mainly used for piston and applications where thermal stresses are more. This alloy can withstand higher temperatures and loads. It has good wear resistance properties and machinability. Requires heat treatment.
LM 16	Suitable where high mechanical properties are desired in fairly intricate sand and chill castings. Requires heat treatment.
LM 20	Mainly used for pressure die casting. Similar to LM 6 but with better machinability and hardness.
LM 21	Generally similar to LM 4M in character and application but better machinability and proof strength.
LM 22	Used for chill castings requiring good foundry characteristics and good ductility. Requires heat treatment.
LM 24	Suitable for large, intricate and thin walled castings in all types of moulds, also used where corrosion resistance or ductility is required.
LM 25	Suitable where good corrosion resistance combined with thermal properties are required. Strength is attained by heat treatment.
LM 26	Mainly used for pistons as alternate to LM 13.
LM 27	A versatile sand and chill cast alloy introduced as an alternative to LM 4 and LM 21.
LM 28	Piston alloy with lower coefficient of thermal expansion than LM 13. This alloy use requires special foundry technique.
LM 29	Same characteristics as LM 28 but with still lower coefficient of thermal expansion than LM 28.
LM 30	For unlined die cast cylinder blocks with low expansion and excellent wear resistance.
LM 31	

Chemical Composition of Alloys (As per BS 1490:1988 Std.)

Alloy	Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Additional Elements	Others
LM 0	0.03	0.03	0.3	0.4	0.03	0.03	0.07	0.03	0.03		Al 99.50 min	
LM 2	0.7 - 2.5	0.3	9.0 - 11.5	1	0.5	0.5	2	0.3	0.2	0.2		0.5

LM 4	2.0 - 4.0	0.2	4.0 - 6.0	0.8	0.2 - 0.6	0.3	0.5	0.1	0.1	0.2	0.2
LM 5	0.1	3.0 - 6.0	0.3	0.6	0.3 - 0.7	0.1	0.1	0.05	0.05	0.2	0.2
LM 6	0.1	0.1	10.0 - 13.0	0.6	0.5	0.1	0.1	0.1	0.05	0.2	0.2
LM 9	0.2	0.2 - 0.6	10.0 - 13.0	0.6	0.3 - 0.7	0.1	0.1	0.1	0.05	0.2	
LM 12	9.0 - 11.0	0.2 - 0.4	2.5	1	0.6	0.5	0.8	0.1	0.1	0.2	0.2
LM 13	0.7 - 1.5	0.8 - 1.5	10.5 - 13.0	1	0.5	1.5	0.5	0.1	0.1	0.2	
LM 16	1.0 - 1.5	0.4 - 0.6	4.5 - 5.5	0.6	0.5	0.25	0.1	0.1	0.05	0.2	
LM 20	0.4	0.2	10.0 - 13.0	1	0.5	0.1	0.2	0.1	0.1	0.2	
LM 21	3.0 - 5.0	0.1 - 0.3	5.0 - 7.0	1	0.2 - 0.6	0.3	2	0.2	0.1	0.2	
LM 22	2.8 - 3.8	0.05	4.0 - 6.0	0.6	0.2 - 0.6	0.15	0.15	0.1	0.05	0.2	
LM 24	3.0 - 4.0	0.3	7.5 - 9.5	1.3	0.5	0.5	3	0.3	0.2	0.2	
LM 25	0.2	0.2 - 0.6	6.5 - 7.5	0.5	0.3	0.1	0.1	0.1	0.05	0.2	
LM 26	2.0 - 4.0	0.5 - 1.5	8.5 - 10.5	1.2	0.5	1	1	0.2	0.1	0.2	
LM 27	1.5 - 2.5	0.35	6.0 - 8.0	0.8	0.2 - 0.6	0.3	1	0.2	0.1	0.2	
LM 28	1.3 - 1.8	0.8 - 1.5	17.0 - 20.0	0.7	0.6	0.8 - 1.5	0.2	0.1	0.1	0.2	
LM 29	0.8 - 1.3	0.8 - 1.3	22.0 - 25.0	0.7	0.6	0.8 - 1.3	0.2	0.1	0.1	0.2	
LM 30	4.0 - 5.0	0.4 - 0.7	16.0 - 18.0	1.1	0.3	0.1	0.2	0.1	0.1	0.2	
LM 31	0.1	0.5 - 0.75	0.25	0.5	0.1	0.1	4.8 - 5.7	0.05	0.05	0.2	