



Material Properties

Mechanical Properties	Magnesium										Aluminum		Zinc	
	AZ91D	AM50A	AM60B	AM20	AE42	AE44	MRI 153M	MRI 230D	AS21	AJ62	A380	A383	AG40A	ZA27
Ultimate Tensile Strength (Mpa)	240	210	225	190	230	245	250	245	175	234	320	310	283	426
Yield Strength (Mpa)	160	125	130	90	145	142	170	180	110	140	160	150		365
Elongation % ub 2 in (51mm)	3	10	8	12	10	10	6	5	9	7	3.5	3.5	10	2
Hardness Brinell	70	60	65	45	60	62	72	71	55	61	80	75	82	115
Elastic Modulus (Gpa)	45	45	45	45	45	45	45	45	45	45	71	71		78
Charpy Impact (unnotched) (J)	6	18	17	18	5	15	8	6	5	13.3	4	4	53	4
Physical Properties	Magnesium										Aluminum		Zinc	
	AZ91D	AM50A	AM60B	AM20	AE42	AE44	MRI 153M	MRI 230D	AS21	AJ62	A380	A383	AG40A	ZA27
Density (g / cm ³)	1.81	1.77	1.80	1.75	1.79	1.82	1.82	1.82	1.76	1.80	2.74	2.74	6.60	5.00
Melting Range F C	815-1,108 435-598	8151,238 435-620	815-1,139 435-615	815-1,180 435-638	1,094- 1,157 590-625	1,071-1,148 577-620	946-1,116 508-602	977-1,123 525-606	815-1,170 435-632	959-1,134 515-612	1,004- 1,103 540-595	1,035-1,105 557-596	718-732 381-389	707-903 375-484
Specific Heat (kJ/kg k)	1.02	1.02	1.02	1.02	1.02	1.02	1.09	1.04	1.02	1.15	0.963	0.963	0.418	0.522

Coefficient of Thermal Expansion (um / m - k)	26.0	26.0	26.0	26.0	26.1	25.2	25.9	25.1	26.1	27.3	22.0	22.0	27.4	26.0
Thermal Conductivity (W / m - k)	51	65	61	94	84	85	64	77	84	77	96	96	113	123
Electrical Conductivity MS/m	6.60	9.10	nm	13.10	11.70	11.70	nm	nm	10.80	nm	nm	nm	nm	nm
Corrosion Rate mg/cm²/day	0.05	0.10	0.09	0.60	0.06	0.05	0.09	0.10	0.20	0.04	0.34	0.33	nm	nm
info@jxd-machining.com jxd-machining.com														