

RS Alloys

Micro Engines



RSP Technology develops, produces and sells aluminium super alloys with high end properties. By using its own Meltspinning process, ultra fast cooling rates can be reached, converting more than 1 million degrees per second. As a result very fine nanostructured alloys with new functionalities are being developed and produced.

RSP has supplied piston materials to almost every World Champion engine since 2000. Based on this extensive specialised experience in the micro engines field, RSP has developed an alloy line for piston applications. The different character of the piston alloys cover every type of application involved. From mid end recreative use through mid end racing to top end championships. From off-road to on-road. From small to big. RSA alloys offer not only top performance, but also long life. RSA-431 offers the most universal compromise of properties, often used in combination with brass liners. Depending on customers requirements, RSP is able to offer an optimised solution. If this is not enough, RSP is always listening to end customer needs, and is able to produce alloys on demand.

RSP alloys are available in the following standard diameters: D18mm, D23mm, D26mm, D35mm.

Alloy	Condition	Typical composition	Physical properties					Mechanical properties								
			Density ρ [gr/cm ³]	Thermal Expansion α [10 ⁻⁶ /K]	Stiffness E-mod [Gpa]	Specific Stiffness [Gpa/ (g/cc)]	Thermal Conductivity k [W/m.K]	Elongati on at e 250°C [%]	Hardness [HB]	Ultimate Tensile Strength UTS [Mpa] at Temp:						Fatigue S [Mpa] 250°C
									20°C	100°C	150°C	200°C	250°C	300°C		
RSA-444	T6	Al Si30 Fe1 Ni1,5 Cu1,5 Mg1,2	2,63	14,6	96	37	115	2,0	200	465	430	410	360	260	160	105
RSA-431	T6	Al Si30 Cu1,5 Mg1,2 Fe0,4 Ni0,4	2,60	15,5	95	36	120	3,5	190	435	425	400	340	250	140	100
RSA-462	T6	Al Si24 Cu1,8 Mg1,2 Fe0,4 Ni0,4	2,63	16,8	90	34	130	5,0	185	470	460	410	345	250	135	100
RSA-461	T6	Al Si21 Cu4 Mg1,2 Fe2,5 Ni1,5	2,76	17,1	90	33	120	4,5	210	550	525	480	400	300	175	120
RSA-612	T6	Al Si7 Cu2 Mg13,5	2,55	18,0	85	33	130	5,5	165	450	445	430	375	300	180	120
M-124	T6	Al Si12 Cu1 Mg1 Ni1	2,68	21,0	80	30	135	5,0	110	340	320	290	235	175	105	78

Exposure time at temperature prior to tensile testing = 0,5 hours

