

6026^{LF} by EURAL

LEAD FREE



FREE CUTTING Aluminum alloy

EURAL

GNUTTI S.p.A.

According to
EU directives RoHS II, ELV, REACH

Application fields

6026^{LF} LEAD FREE by EURAL is extremely versatile due to its medium-high mechanical properties, good attitude to anodizing, good weldability, good attitude to forging and good corrosion resistance.

6026^{LF} LEAD FREE by EURAL is suitable for components used in several industries such as automotive, electric and electronics, valves, oleo-hydraulic, pneumatics, furniture & lighting.

Green choice

For many years RoHS II regulations permit, with an exception, a maximum lead content in aluminum alloys up to 0.4% by weight. Such limit is under discussion for a further reduction. REACH recently included lead in SVHC list as highly toxic element for human health.

6026^{LF} LEAD FREE by EURAL is ready in anticipation to any possible future changes because it is free of lead.



Alloy with high recycled aluminum content.

Birth of 6026^{LF}

6026^{LF} LEAD FREE by EURAL is an innovative alloy designed and developed by Eural Gnutti S.p.A. R&D laboratories in order to meet the strictest requirements in critical automotive applications such as brake systems.

Today 6026^{LF} LEAD FREE by EURAL is approved for several different business applications.

High machinability

6026^{LF} LEAD FREE by EURAL is particularly suitable for being machined on high speed automatic lathes thanks to its thin chip formation.



No tin

In many 6000 series alloys lead (Pb) has been replaced by tin (Sn) which, as it has been proved, can cause weakness and cracking of the machined parts when submitted to stress and high temperature (>320°F).

Tin, due to its brittle nature, has the dangerous tendency to break without significant previous deformation (strain).

6026^{LF} LEAD FREE by EURAL does not contain tin.



Ultrasonic tested billets

All semi-finished products in 6026^{LF} LEAD FREE by EURAL are made of 100% ultrasonic tested billets according to SAE AMS-STD-2154 class A.



Production program

6026^{LF} LEAD FREE by EURAL is available in drawn or extruded conditions.

Drawn round bars Ø 0.236 – 3.15"

Temper T6, T8 and T9.

Extruded round bars Ø 1.181 – 10"

Temper T6.

Square, rectangular, hexagonal bars are available.

A wide range of drawn bars are also available in h9 tolerance.

Alternative to:

6026^{LF} LEAD FREE by EURAL is the best alternative to several aluminum alloys such as 6012, 6012A, 6020, 6021, 6023, 6028, 6033, 6040, 6041, 6042, 6061, 6065, 6082, 6262, 6064A, 6262A, 6351, and 7020.

6026^{LF} LEAD FREE by EURAL is an excellent replacement of brass due to its excellent machinability, good attitude to forging, and medium-high mechanical properties. Moreover, since 6026^{LF} has a specific gravity of 1/3 compared to brass, it results extremely convenient costwise.

Compatibility in drawings

Original alloy 6026 was born in 2002 and has been registered by Eural to the Aluminum Association and to EN standards with a lead content of $Pb \leq 0.4\%$ (0 - 0.4%).

Therefore, 6026^{LF} LEAD FREE by EURAL does not need any variations in drawings where 6026 is already indicated.

Lead (Pb) and tin (Sn) can be present as traces within the limits of 0.05%, as any other chemical element, as prescribed by international regulations.

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Colour code
EU white



PRODUCTION PROGRAM

Unit: in.	●	■	■	◆
Drawn	0.236 - 3.15	0.394 - 2.559	Thick. 0.472 - 2.165	0.394 - 2.5
Extruded	1.181 - 10	1.969 - 6.5	Thick. 1.181 - 5	-

According to EU directives:
2000/53/EU - 2011/65/EU (RoHS II)
Ready to imminent restrictions on lead content
because LEAD FREE



PRESENTATION

Alloy 6026^{LF} LEAD FREE is the best option for machinability since recent limitations by RoHS (2018/740/EU) and REACH on lead content allowance (Pb ≤ 0.1%). It is particularly suitable for being machined on high-speed automatic lathes. 6026^{LF} LEAD FREE offers:

- Excellent chip forming performance
- Good attitude to anodizing, big thickness also
- Good corrosion resistance
- Excellent surface finishing (low roughness)
- Good for forging

It is definitely a better solution than aluminum + Tin (Sn) alloys because free from any limitations on possible application (final parts subjected to high stress, low or high temperatures). It can replace 6012, 6012A, 6020, 6021, 6023, 6028, 6033, 6040, 6041, 6042, 6061, 6065, 6082, 6262, 6064A, 6262A, 6351, 7020 alloys.

Main applications: automotive industry, electric and electronic industry, hot forging, screws, bolts, nuts, threaded parts, furniture & lighting.

Properties	T6	T8/T9
Machinability	Excellent	Excellent
Protective anodizing	Good	Good
Decorative anodizing	Good	Good
Hard anodizing	Good	Good
Resistance to atmospheric corrosion	Good	Good
Resistance to marine corrosion	Good	Good
MIG-TIG weldability	Good	Good
Resistance weldability	Good	Good
Brazing weldability	Good	Good
Plastic formability when cold	Good	Good
Plastic formability when hot	Good	Good

Legend



Samples of finished products made of Eural bars



Chemical composition	
Si	0.60 - 1.40
Fe	≤ 0.70
Cu	0.20 - 0.50
Mn	0.20 - 1.00
Mg	0.60 - 1.20
Cr	≤ 0.30
Ni	≤ 0.30
Zn	≤ 0.30
Ti	≤ 0.20
Sn	≤ 0.05
Pb	≤ 0.05* (traces)
Bi	0.50 - 1.50
Others	Each 0.05 Total 0.15
Al	Remainder

Physical properties	
Density	lb / in ³ 0.0983
Modulus of elasticity	ksi 10,950
Coefficient of thermal expansion	x10 ⁻⁶ / °F 13.0
Thermal conductivity at 68°F	Btu / ft h °F 98.8
Typical electrical resistivity at 68°F	Ω mm ² / m 0.039

Minimum mechanical properties						
	Temper	Diam. in	UTS		YTS	
			ksi	ksi	A%	Typical
Drawn	T6	≤ 3.15	54.0	44.0	8	95
	T8	≤ 3.15	50.0	46.0	4	95
	T9	≤ 3.15	52.0	48.0	4	95
Extruded	T6	≤ 5.5	54.0	44.0	8	95
	T6	5.5 < D ≤ 8	49.0	36.0	8	90
	T6	8 < D ≤ 10	44.0	29.0	8	90