Alloys and applications

RED BRONZES

DENOMINATION	COMPOSITION %	APPLICATIONS
RG-5	Cu: 85	Excellent material for medium loads and friction. For working at good speeds and average pressures, suitable for friction accessories in railways and machinery. Efficient sliding properties and hydrostatic and steam pressure tightness. Ideal for valves in general and hydraulic equipment.
	Sn: 5	
	Pb: 5	
	Zn: 5	
RG-7	Cu: 83	Structurally strong alloy, for use in severe conditions. Suitable for work in which there is small tapping. Recommendable for high wear bearings. Due to its low friction coefficient and its resistance to wear, it is the ideal material for valve guides, plunger bearings, big end caps and flanges, agricultural machinery,etc
	Sn: 7	
	Pb: 6	
	Zn: 4	
RG-10	Cu: 88	Hard material, resistant to seawater for sliding bearings and coupling parts subjected to moderate forces.
	Sn: 10	
	Zn:2	

TIN BRONZES

DENOMINATION	COMPOSITION %	APPLICATIONS

DENOMINATION	COMPOSITION %	APPLICATIONS
90/10	Cu: 90 Sn:10	Hard material, with large percentage of expansion, resistant to corrosion and to seawater. Suitable for steering wheels, and turbine blades.
88/12	Cu: 88 Sn:12	Material with resistance to wear, corrosion and seawater, suitable for spindle nuts, worm wheels and cylinder liners.
86/14	Cu: 86 Sn: 14	Alloys with great tenacity for work where great hardness is required. For bushing and bearings which support heavy-duty loads, small speeds and without tapping. Suitable for crowns of endless screws high pressure hydraulic elements, refrigeration equipment, etc.

LEAD BRONZES

DENOMINATION	COMPOSITION %	APPLICATIONS
Pb-10	Cu: 80 Sn: 10 Pb: 10	Great anti-friction properties and good resistance to corrosion. For the manufacture of bearings with perfect lubrication – avoiding lead. Recommendable for lathe bearings in contact with mineral water or sulphur liquids.
Pb-15	Cu: 77 Sn: 8 Pb: 15	For parts where lubrication is poor. For its adaptation, the load and speed the material is to be subjected must be calculated, as well as the lubrication it is to receive. Adapted to high pressure bearings in which resistance may be produced at the edges, ingots of anti-friction bearings, support for locomotive shafts and railway carriages, electric tram bearings, bearings for cold rolling, etc
Pb-20	Cu: 75 Sn: 4,5 Pb: 20	The large amount of lead and less tin allows work with greater revolutions without stiffness, not being advisable for heavy-duty loads, due to its low hardness and tensile strength. Its use is ideal for rods,crankshafts, submersible pumps, naval tail shafts, etc

ALUMINIUM-MANGANESE BRONZES

DENOMINATION	COMPOSITION %	APPLICATIONS
AL	Cu: 89	Parts resistant to corrosion in the chemical industry, in food products, petroleum and mining industries. Friction parts for heavy-duty loads, such as gun adjustments and closures, ball bearing cages, carters, endless screws, pinions, high pressure taps and steam system reinforcing. For aviation: valve guides and seats, as well as propellor clamping screw nuts.
	Al: 9,5	
	Fe: 1,5	
ALFE	Cu: 86	
	Al: 10	
	Fe: 3	
ALNI	Cu: 79,5	
	Al: 10	
	Ni: 5,5	
	Fe: 4,5	
HR	Cu: 60	
	Al: 5	
	Ni: 2	
	Fe: 2,5	
	Mn: 4	
	Zn: R	