

Chemicals (Inner sintered layer)	CN-797	CN-799	CN-820	CN-830	CN-840	CN783
	SAE-797	SAE-799	DIN17670	BS PB1	CuSn6 (2.1020)	SAE783
	CuPb10Sn10	CuPb24Sn4	CuPb6Sn6Zn3	CuSn10	CuSn6.5P	AlSn20Cu
Cu	Balance	Balance	Balance	Balance	Balance	0.7-1.3
Pb	9.0-11.0	21.0-27.0	2.0-4.0	0.1	0.1	-
Sn	9.0-11.0	3.0-4.5	5.0-7.0	9.0-10.0	6.0-6.8	17.5-22.5
Zn	0.5	0.5	5.0-7.0	0.3	0.3	-
P	0.1	0.1	0.1	0.1	0.1-0.3	-
Fe	0.5	0.7	0.6	0.5	0.6	0.7
Ni	0.5	0.3	0.3	0.5	0.5	0.1
Al	-	-	-	-	-	Balance
Other	0.5	0.5	0.5	0.5	0.5	0.5

Reference of Material Standard Code

Material	Alloy Composition	Alloy Hardness	International Standard
CN-797	CuPb10Sn10	80~120HB	JIS-LBC3, SAE-797, DIN CuPb10Sn, UNS C93700, CLEVITE F100, CC495K, DAIDO L10, D.A.B. D57, Federal Mogul HF2, Glacier SY, GLYCO66, ACL F100
CN-799	CuPb24Sn4	45~70HB	JIS-LBC6, SAE-799, GLYCO 68, DAIDO L23, Glacier rsx, ACL F250
CN-820	CuPb6Sn6Zn3	70~100HB	Din17670
CN-830	CuSn10	70~100HB	Din G-CuSn10; BS PB1
CN-840	CuSn6.5P	70~100HB	DIN CuSn6(2.1020); JIS H3110
CN-783	AlSn20Cu	30~40HB	JIS-AJL, SAE-783, GLYCO74, Glacier AS15,ACL820

Main Features

① Sliding	★★★★★	★★★★★	★★★★	★★★★★	★★★★	★★★★
② Abrasion Resistance	★★★★★	★★★	★★★★	★★★★	★★★★	★★★★
③ Hardness	★★★★★	★★	★★★★	★★★	★★★★	★★
④ Anti-bite Shaft	★★★★	★★★★★	★★★	★★★	★★★	★★★★
⑤ Corrosion-resistant	★★★★★	★★	★★★★	★★★★	★★★★	★★★★
⑥ High loading	★★★★★	★★	★★★★	★★★★	★★★★	★★★★
⑦ Anti-fatigue	★★★★★	★★★	★★★★	★★★★	★★★★	★★★★
⑧ Environmental protection	x	x	x	★★	★★	★

Data		CN-797	CN-799	CN-820	CN-830	CN-840	CN-783
		SAE-797	SAE-799	DIN17670	BS PBI	CuSn6 (2.1020)	SAE-783
		CuPb10Sn10	CuPb24Sn4	CuPb6Sn6Zn3	CuSn10	CuSn6.5P	AlSn20Cu
Material		Steel+CuPb10Sn10	Steel+CuPb24Sn4	Steel+CuPb6Sn6Zn	Steel+CuSn10	Steel+CuSn6.5P	Steel+AlSn20Cu
Alloy layer hardness HB		80~120	45~70	70~100	70~100	70~100	30~40
Max dynamic Load P N/mm ²		150	130	130	130	130	100
Max.Speed V m/s		3.5	2.5	2.5	2.5	-	-
Max.PV limit N/mm ² ·m/s	Grease lubrication	2.8	2.8	2.8	2.8	2.8	-
Friction Coefficient u		0.05~0.10	0.05~0.15	0.05~0.15	0.05~0.15	0.05~0.15	-
Max.Speed V m/s		8	10	5	5	5	15
Max.PV limit N/mm ² ·m/s	Oil lubrication	10	10	10	10	10	8
Friction Coefficient u		0.04~0.12	0.04~0.12	0.04~0.12	0.04~0.12	0.04~0.12	0.05~0.02
Max Working Temperature °C	Grease lubrication	150	150	150	150	150	150
	Oil lubrication	250	250	250	250	250	250
Thermal conductivity W/mk		60	60	60	60	60	47
Coeff. of linear expansion x10 ⁻⁶ /K-1		18	19	18 x10 ⁻⁶ /K-1	18 x10 ⁻⁶ /K-1	19 x10 ⁻⁶ /K-1	18 x10 ⁻⁶ /K-1
Match Axis	Hardness HRC	>=53	>=45	>=53	>=53	>=53	>=270
	Roughness Ra	0.32~0.63	0.32~0.63	0.16~0.63	0.32~0.63	0.16~0.63	0.16~0.63

Material Trademark	Alloy Composition	Alloy Hardness
JF-800	CuPb10Sn10	70~100HB
JF-720	CuPb24Sn4	45~70HB
JF-700	CuPb30	30~45HB
JF-20	AlSn20Cu	30~40HB
JF-930	CuPb6P0.1	69~90HB

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JF-930	CuPb6P0.1	69~90HB

Technical Q&A Summary

Q: Which material in the JF Bimetal series is most suitable for heavy-duty applications requiring maximum load resistance? **A:** The CN-797 alloy is the primary choice for such requirements. It features a CuPb10Sn10 sintered layer with an alloy hardness of 80~120 HB. This model achieves a 5-star rating for both high loading and anti-fatigue performance, supporting a maximum dynamic load of 150 N/mm².

Q: How does the lubrication type affect the performance limits of these bushings? **A:** Lubrication significantly alters the operational thresholds. For instance, under grease lubrication, the Max PV limit for most

models is 2.8 N/mm²·m/s. However, when switched to oil lubrication, the Max PV limit increases substantially to 10 N/mm²·m/s, and the maximum speed can reach up to 10 m/s for the CN-799 model.

Q: What is the primary difference in lead content between CN-797 and CN-799, and how does this impact their performance? A:

According to the composition analysis, CN-797 contains 9.0~11.0% Pb, while CN-799 contains a much higher concentration of 21.0~27.0% Pb. This higher lead content gives CN-799 a superior 5-star rating in anti-bite shaft properties and sliding performance, though it results in lower hardness (45~70 HB) compared to CN-797.

Q: Are there lead-free or environmentally friendly options available in this series? A:

The CN-830 and CN-840 alloys are the more environmentally conscious choices, as their lead content is restricted to 0.1%. Both models receive a 2-star rating for environmental protection. They utilize tin-bronze compositions (CuSn10 and CuSn6.5P) and offer balanced 4-star ratings in abrasion resistance and load capacity.

Q: For high-speed applications, why might the CN-783

aluminum-based bushing be considered? A: The CN-783 (AlSn20Cu) is specifically designed for high-velocity environments. It boasts the highest maximum speed limit in the series at 15 m/s under oil lubrication. While its hardness is relatively low (30~40 HB), it maintains a 4-star rating for anti-bite shaft properties, making it ideal for specialized sliding applications.

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