

Belmont

Casting Alloys For Rubber Molds

BISMUTH BASE • LEAD BASE • TIN BASE • ZINC BASE

Belmont Metals, Inc. has been a major producer of quality non ferrous alloys since 1896. We offer a greater variety of non ferrous metals than any other producer in North America, utilizing our modern, in-house laboratory to assure high quality. In addition, we have the technical expertise required to customize our products to meet your particular needs, and create new alloys.

Belmont offers extensive experience in the production of standard and custom alloys for the casting of jewelry, decorative and industrial products. Our capability covers standard and special (Bismuth, Lead, Tin and Zinc) alloys for a broad variety of applications. This allows us not only to serve your special casting needs, but also to help you with considerations such as metal price, complying with various regulations, color, and many other factors that influence the best alloy choice for your application.

The properties summary that follows covers data for some of our Bismuth, Lead, Tin and Zinc alloys used in rubber molds as well as other casting technologies. Feel free to inquire about others, or specials. While the data is based on the latest available information, actual results may vary due to design and casting conditions. Thus, the data is intended to serve only as a valuable aid in alloy selection. Feel free to contact us for assistance via phone, fax or e-mail.

Belmont: *The Non Ferrous Specialists*

For maximum variety in non ferrous metals, alloys, formulations and shapes.
Custom shapes and compositions available.



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Bismuth-Base Group

Belmont Alloy No. Name/Comp.	Tensile Strength p.s.i.	Brinell Hardness No.	Density lbs./cu. in.	Ductility	Fluidity	Casting Range °F.	Comments
2505 158° F Low Melt Alloy (50% Bi, 26.7% Pb, 13.3% Sn, 10% Cd)	5,990	9.2	.339	Excellent	Good	210-260	Very low casting temperature. Excellent mold life. Low cost.
2531 203° F Low Melt Alloy (52.5% Bi, 32% Pb, 15.5% Sn)	4,070	9.0	.350	Excellent	Good	255-305	Low casting temperature. Excellent mold life. Cadmium free. Low cost.
2581 281° F Low Melt Alloy (58% Bi, 42% Sn)	8,000	8.7	.315	Excellent	Good	330-380	Good mold life. Lead and cadmium free. Somewhat higher cost. Good strength.
2405 281-338° F Low Melt Alloy (40% Bi, 60% Sn)	8,000	8.2	.296	Excellent	Good	390-440	Higher melting point than alloys above. Lead and cadmium free.

Lead-Base Group

Belmont Alloy No. Name/Comp.	Tensile Strength p.s.i.	Brinell Hardness No.	Density lbs./cu. in.	Ductility	Fluidity	Casting Range °F.	Comments
5632 35% Pewter (62% Pb, 35% Sn, 3% Sb)	7,800	13	0.341	Fair-Good	Fair-Good	510-600	Lower cost than tin-base pewters. Good choice for plated/enamelled pieces.
5731 25% Pewter (73% Pb, 25% Sn, 2% Sb)	6,200	12	0.357	Fair	Fair	550-675	Used for inexpensive end use prod- ucts. Lower cost than 35% pewters.

5841 412 Metal (84% Pb, 12% Sb, 4% Sn)	10,000	22	0.380	Good	Good	575-675	Best strength and hardness of lead-base alloys. Casts well. Good ductility.
5877 C-10 Metal (87% Pb, 10% Sb, 3% Sn)	9,000	16	0.375	Fair-Good	Excellent	590-680	Specially treated alloy to give excellent fluidity and ductility at a low cost.
5933 6% Antimonial Lead (93% Pb, 6% Sb, 1% Sn)	7,500	16	0.370	Fair	Good	600-700	Good castability. Somewhat brittle.
5956 4% Antimonial Lead (95% Pb, 4% Sb, 1% Sn)	6,800	13	0.390	Poor-Fair	Fair	620-700	Low cost. Fair castability. Brittle.

Tin-Base Group

Belmont Alloy No. Name/Comp.	Tensile Strength p.s.i.	Brinell Hardness No.	Density lbs./cu. in.	Ductility	Fluidity	Casting Range °F.	Comments
7921 Britannia (91.75% Sn, 8% Sb, 0.25% Cu)	7,200	20	0.263	Excellent	Very Good	525-625	Lead-free. Highest strength and hardness of tin-base alloys. Attractive appearance without plating. Used for model-making as well as finished pieces.
7924 Special High-Tin Pewter (92% Sn, 4% Sb, 4% Pb)	6,800	16	0.270	Excellent	Excellent	525-625	Special pewter for figurines and other pieces with heavy sections where porosity is a problem. Better casting characteristics than lead-free pewter.
79010 Levalloy I (90% Sn, 6% Pb, 2% Sb, 2% Cd)	6,800	18	0.273	Excellent	Excellent	515-580	Special pewter for pieces with flat surfaces requiring porosity-free polished surface. Lower melting point helps mold life.

Al=Aluminum • Sb=Antimony • Bi=Bismuth • Cd=Cadmium • Cu=Copper • Pb=Lead • Sn=Tin • Zn=Zinc

Tin-Base Group (continued)

Belmont Alloy No. Name/Comp.	Tensile Strength p.s.i.	Brinell Hardness No.	Density lbs./cu. in.	Ductility	Fluidity	Casting Range °F.	Comments
7604 60% Pewter (60% Sn, 37% Pb 3% Sb)	7,500	14	0.304	Good	Good	475-550	Lowest melting point of tin-base group. Longest mold life. Usually plated or enameled.

Zinc-Base Group

Belmont Alloy No. Name/Comp.	Tensile Strength p.s.i.	Brinell Hardness No.	Density lbs./cu. in.	Ductility	Fluidity	Casting Range °F.	Comments
8934 Superdie I (93% Zn, 4% Al, 3% Cu)	35,000	90	0.245	Very Good	Good	780-850	Good strength and ductility with good castability. Best all-purpose alloy for silicone rubber molds.
8952 955 Zinc (95% Zn, 5% Al)	25,000	70	0.240	Fair-Poor	Excellent	735-835	Used for fine detail and thin wall castings. Not as strong as Superdie I.
8871 ZA-12 (88% Zn, 11% Al, 1% Cu)	45,000	115	0.218	Good	Fair	825-875	High strength and hardness. Fair castability. Used for industrial and similar casting where strength is primary consideration. Prototypes for pressure die casting.
8707 Levalloy II (70% Zn, 30% Cd)	12,000	30	0.275	Very Good	Excellent	700-760	Substitute for high-tin pewters, particularly in silicone rubber molds. Lower cost than tin alloys with excellent properties.

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