



Consolidated Alloys

A Division of C.A. Group Australasia Pty. Limited inc in Vic.
ABN 83 005 084 097

www.cagroup.com.au

JUNE 2008

BEARING METALS

PRODUCT DESCRIPTION

Consolidated Alloys manufacture a wide range of Bearing Metal alloys (also known as White or Babbitt metal). This range is divided into two categories - Tin and Lead rich

STANDARDS

Alloys are manufactured to meet ASTM B23, BS 3332 and other international and internal company standards. Consolidated alloys own range covers the Cap alloy, A & F and Micnoid products.

FROM

All Bearing Metals are supplied in segmented ingots suitable for breaking off smaller amounts.

RANGE & USAGE

Contact Consolidated Alloys in your state for more information.

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ALLOY

USAGE

NO. 1

A high tin base alloy designed for the highest of rubbing speeds: racing cars, aviation, turbines, and refrigerating machinery.

Brinell Hardness

10/500/30 at 15°C, 20.9, at 100°C, 12.3.

Compression test:

To three-quarter length at 15°C, 8.2 tons per in² at 100°C, 4.7tons per in².

Structure:

Possesses the most uniform structure and continuity for hardening constituent without big areas. One that is conducive to lubrication.

Weight per cubic inch:

0.26lb.

Casting temperature:

Approximately 415°C - 440°C.

NO. X

A tin base alloy of the same type but harder than No 1. The metal with the higher compression test figures designed for car, diesel, tractor and aviation engines.

Brinell Hardness

10/500/30 at 15°C., 24.2 at 100°C., 12.7.

Compression test:

To three-quarter length at 15°C., 8.6 tons per in², at 100°C., 4.9 tons per in²

Structure:

Uniformly distributed hardness, sufficient to carry a heavy load without spreading.

Weight per cubic inch:

0.26lb.

Casting temperature

415°C - 440°C.

DIESEL

A high tin base alloy designed for extra strength required in the modern diesel, car and aviation engine where high operating temperatures and loadings prevail.

Brinell Hardness

10/500/30 at 15°C., 29.5 at 100°C., 17.2, at 130°C., 13.2.

Compression test:

To three-quarter length at 15°C., 10.4 tons per in², at 100°C., 4.9 tons per in² at 100°C

Structure:

Of a slightly coarser structure than No. X but very even.

Weight per cubic inch:

0.26lb.

Casting temperature

415°C - 440°C. Must not be overheated when casting.

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AUTO A high tin base alloy similar to but harder than No. X. For all automotive work.

Brinell Hardness 10/500/30 at 15°C., 25.5, 10/500/30 at 100°C., 14.8.
Compression test: To three-quarter length at 15°C., 9.03 tons per in², at 100°C., 4.92 tons per in²
Structure: Uniform hardness in a strong matrix able to withstand both high rubbing speeds and heavy loadings.
Weight per cubic inch: 0.26lb.
Casting temperature Approximately 415°C - 440°C. Conforms to ASTM B23-2

NO. Q A tin base alloy with balanced hardeners giving both the qualities of higher hardness and extreme toughness. This metal is ideal for heavy duty quarry and metallurgical crushing plant.

Brinell Hardness 10/500/30 at 20°C., 27, 10/500/30 at 100°C., 14.5.
Compression test: To three-quarter length at 20°C., 8.0 tons per in², at 100°C., 4.4 tons per in²
Structure: An even distribution of hardening compounds in a tough matrix.
Weight per cubic inch: 0.27lb.
Casting temperature 490°C - 510°C.

NO. 9 A high tin and lead base alloy with an exactly proportioned ratio of copper and antimony hardener balanced to give maximum hardness with toughness. Designed for any very heavy duty bearings up to 800 ft per minute depending on lubrication and pressures. Oil engines, compressors, gyratory crushers, locomotive axle boxes, etc. Should not be used where operation temperatures are high.

Brinell Hardness 10/500/30 ... 29
Compression test: To half length... 14 tons per sq in
Structure: A very even distribution of hardening that cannot segregate in setting even with large castings and capable of withstanding shocks, stresses and vibrations without deformation or cracking.
Weight per cubic inch: 0.29lb.
Casting temperature 375°C.

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ALL DUTY

An alloy so blended that it reduces frictional heat to a minimum and being hardened by a special process, does not flow under high pressures. This metal is giving wonderful results in such a wide range of applications as from con-rod and main bearings of modern high compression motor cars to stone (jaw) crusher bearing of bluestone quarry plants.

Brinell Hardness

10/500/30 at 15°C., 20.8,

Compression test:

To three-quarter length at 15°C., 7.2 tons per in².

Structure:

A perfect fine grained texture of great density that cannot be made to segregate.

Weight per cubic inch:

0.37lb.

Casting temperature

About 350°C.

GRADE F

A superior lead base alloy containing special hardening agents, thus enabling it to be used for arduous duty at all speeds, especially at elevated temperatures. This metal provides peak performance in the lead base bearing metal range. It can be satisfactorily used in both high speed, high compression engines and slow moving, heavy duty crusher and press plant.

Brinell Hardness

10/500/30 at 15°C., 29.0, 10/500/30 at 100°C., 15.

Structure:

A fine grained material of great density.

Weight per cubic inch:

0.36lb.

Casting temperature

350°C to 500°C.

MAGNOLIA

A lead base alloy containing tin & with antimony hardener in excess of eutectic. Designed for general engineering work where pressures are not severe. Being a lead base alloy, it is to be preferred where coming in contact with sea water, as in tail shaft bearings.

Brinell Hardness

10/500/30, 22.4.

Compression test:

Structure:

To half length.. 14.5 tons per sq in

Weight per cubic inch:

A close grained metal having good anti-frictional properties.

Casting temperature

0.37lb.

330°C

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NO. 3 A lead base alloy, small percentage of tin, and hardened with copper & antimony. Designed for axle boxes, cement-making machinery, fans, winches, line shafting, etc.

Brinell Hardness 10/500/30 18.9

Compression test: To half length 12.4ton per sq in

Structure: A metal carrying a smaller percentage of hardening constituent , but, nevertheless, sufficiently hard for light duties

Weight per cubic inch: 0.38lb.

Casting temperature 350°C

BABBIT The name babbit derived from the originator of this type of bearing, originally referred to a high tin base alloy, but now only indicates one of the cheaper grades for general purpose. Designed for low duty bearings and when a very fluid metal is required for casting.

Brinell Hardness 10/500/30 . 20.3

Compression test: To half length.. 10.3 tons per sq in

Weight per cubic inch: 0.37lb.

Casting temperature 300°C

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