

Custom & Non-Ferrous Casting Alloys



Babbitt Metals • Jewelry Alloys • Lead Alloys • Lead Free Alloys • Low Melt Eutectic Alloys • Pewter Alloys • Solders • Tin Alloys • Zinc Alloys



Pewter Alloys are extensively used for high quality gift and statuary items. Our Alloys are Lead Free to assure your customer a safe material for their home or office.



▶ PEWTER ALLOYS



The definition of Pewter?

The American Pewter Guild (APG), The American Society for Testing and Materials (ASTM) and the Federal Trade Commission (FTC) all worked together to come up with a definition of what Pewter is. Their consensus? "A metal alloy product of which the chemical composition shall be not less than 90 % Grade 'A' Tin, with the remainder composed of metals appropriate for use in pewter."

Our definition of Pewter?

A Tin based alloy, greater than 90%, created with the best materials possible and produced to the highest quality, allowing it to become "A thing of beauty".

NEY has been producing Pewter alloys to help create stunningly designed items for 150 years. Our long history is filled with helping prestigious casting houses, such as Perth, Lance, Chilmark, Hudson, Legends, Michael Ricker, Seagull, Basic Spirit and so many more, create lifetime memories with beautiful heritage items.

Pewter and Tin alloys have been in existence for over 2000 years. Elaborate antique Pewter items have been created since the Bronze Age. One of the earliest pieces of antique Pewter was the Abydos Bottle found in an Egyptian tomb that dates back to 1450 BC, so Pewter is truly a Noble Metal.

Figurines, and Ornamental Items can be easily cast into molds of bronze, steel plaster or sand, using the gravity pour method. Our Pewter is best formed by centrifugal (spin) casting, using natural rubber or silicone molds. This method became popular in the 1960's. By pressing, rolling, spinning on a lathe or hand forming Pewter, it can be manipulated into many striking forms and designs like Plates, Flatware, Charms, Goblets and Tankards. These processes are still the primary techniques used by manufacturers of Quality Spun Pewter goods today.

Whatever type of Pewter or Custom Tin formulas you may require, NEY is your single alloy source. You can rely on our decades of experience, gained from our past, that is available to you today, for the products of tomorrow.



▶ JEWELRY ALLOYS

Tin Based Alloys, like Pewter, also have the look of Sterling Silver without the cost or constant upkeep. This ability to mimic precious metals was expanded upon in the early 20th Century when forming Fashion (Costume) Jewelry. It was a new and thriving industry. NEY was instrumental in designing those alloys for the new Power



Houses of Costume Jewelry, such as Coro, Monet, Napier, 1928, Miriam Haskell and Trifari, as many of them began their growth in Manhattan and then spread across the globe. Our alloys can still be found around the world, from individual works of art in Europe, to mass produced items in the Pacific Rim.

It is interesting to note that Bismuth was not a common metal found in Pewter. Only in the mid 1980's did it become a valuable addition. NEY (then Ney Smelting & Refining Co. Inc.) was instrumental in designing those new alloys with Bismuth and Silver, allowing them to cast well and remain Lead free. We worked alongside prestigious casting houses to formulate these new Lead Free Pewters. Today, those formulas are the building blocks for all NEY Lead Free alloys. Our bestselling ENTB formula is certified as food grade safe. As an ISO 9001 Company, trust in us for assurance that the safety of your product goes beyond just alloy compliance.

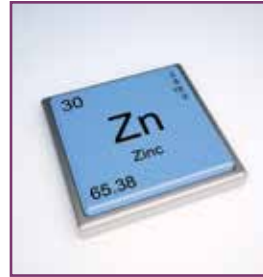


The quality of any Jewelry begins with quality materials. NEY Fashion Jewelry Alloys are designed to produce the optimum casting quality, from large necklaces with thick cross sections to delicate earrings with fine filigree.

FEATURED PRODUCTS	
Lead Free Pewter with Silver Alloy - 798NENTB	Tin: 97-99% with Bismuth and Silver in a proprietary formula. This is a high purity Tin based Lead Free Pewter Alloy, that meets or exceeds most Lead Free requirements. We certify it to be less than 50 ppm Lead Content. It works well in Spin Cast Rubber or Silicone Molds.
Lead Free Pewter with Silver Alloy - 798NENS	Tin: 97-99% with Bismuth and Silver in a proprietary formula. This is a high purity, economical version of our best selling ENTB Alloy. A Tin based Lead Free Pewter Alloy that does not contain Antimony. This is important for some regulations, especially in the European markets. Designed for castings with thick cross sections or a smooth, polished finish and some malleability.
Lead Free Pewter (Britannia) Alloy - 791NR8	Tin: 91-93% with Antimony and Copper. This is a Lead Free Pewter, also referred to as a <i>Britannia Alloy</i> that works well in Spin Cast Molds for designs, such as Fashion (Costume) Jewelry, with thin cross sections or fine filigree and maximum detail requiring less malleability and more strength.
Lead Free Pewter (Gravity Cast) Alloy - 791NB7	Tin: 91-93% with Antimony and Copper. This Lead Free Pewter Alloy is high in Copper to allow it to work well in Open Face, Gravity Pour, Sand and Cast Iron Molds with maximum detail. Has good strength for pronging, belt buckles, broaches, etc.
Lead Free Pewter Shot Form Alloy - 791NB7S	Tin: 91-93% with Antimony and Copper. This Lead Free Pewter Alloy is in shot form for small crucibles and special melts. Ideal for Trade School classroom environments. It is high in Copper for good strength and works well in Open Face, Gravity Pour, Sand Molds and Cast Iron Molds when you need maximum detail.



► ZINC ALLOYS



The NEY KOR-ZEE® brand of Zinc alloys are used throughout the world.

Zinc Based Alloys have been in demand for decades while quietly producing thousands of safe and efficient products for hundreds of applications throughout countless industries. There are probably a dozen of more products that you are using right now that would never exist without Zinc as a key ingredient for production.

From the belt you are wearing, to the emblems on your car, to the faucet in your kitchen or the zipper on your clothes to the handles and locks you touch each day, none of them would probably exist without Zinc. Alloys of Zinc are an indispensable part of your everyday life. Even that phone on your desk or the penny you left on the sidewalk has been manufactured with Zinc. The low cost and wide-ranging applications as a safe raw material, is only part of Zinc's mass appeal.

NEY has been producing Zinc alloys for almost 100 years by blending it together with Aluminum, Magnesium, Copper and other proprietary ingredients with grain refiners. Many of these alloys are in use worldwide as custom designed materials for use by the Centrifugal Spin Casting Industry or the Die Cast Industry.

Alloys, such as our environmentally friendly S1 and J1 series, are perfectly designed to help you produce high strength, low cost, dimensionally accurate castings. They are used to create basic items from Automotive or Tooling parts to beautifully finished Fashion Jewelry, Belt Buckles or Promotional products. They can be easily cast at moderate temperatures (< 810° F) in Silicone rubber or gravity cast molds.



NEY produces common Zinc alloys as well. These are known in the industry as Zamac or Zamak (Mazak-UK) alloys, Kirksite, ZA or ASTM B86 Alloys. We can manufacture to a specific ASTM or ZA formula (e.g. ZA3, ZA5, ZA7, ZA12, ZA27) or for Marine applications (MIL-A-18001 L) used to produce Zinc Anodes. We will also customize many other non-ferrous alloys to fit your production demands.



Our Zinc Alloys are designed to meet your engineering needs. We also supply Zinc in flat sheet form. These Zinc Sheets are used to create beautiful counter-tops or bar tops. They can also be used for roofing material and Architectural items.

NEY Zinc Alloys offer hardness and high strength, allowing for many solutions to your manufacturing and cost issues. They can be an alternative to stamped, machined or pressed components. Our alloys have excellent thin wall capability, high-quality finishing characteristics, high thermal conductivity. Many are used for corrosion control and corrosion resistance. They have the ability to be cold formed, have good electrical conductivity and are environmentally friendly and recyclable!

Our most successful, proprietary alloy is our NEY380® Fluxless Aluminum Solder. It is used for the joining of Aluminum without the use of a flux, usually required to remove oxides before soldering. From Aluminum joints to heat exchangers, NEY380® has been the industry leader since the 1960's and a solution for many diversified applications. Contact us or visit our website for detailed information.

Forms: Slab, Pig, Ingot, Bar, Ball, Cut Pieces, Rod, Wire, Shot, Grain or Sheet
Custom shapes and castings are available.



NEY Zinc Alloys can be spin cast in Silicone Rubber Molds. Our alloys produce incredibly detailed Fashion Jewelry items, castings for Belt Buckles and other Ornamental items.

FEATURED PRODUCTS	
Spin Cast Zinc Alloy 892NS1	90 to 94 Percent Zinc in a proprietary formula. This is our Original, Lead Free, Zinc Based Alloy that works well in Spin Cast Vulcanized Silicone Molds for designs with thick cross sections or minimal detail. Contains Proprietary Grain Refiners for improved casting properties.
Spin Cast Zinc Alloy 892NJ1	91 to 95 Percent Zinc in a proprietary formula. This is our most popular Lead Free Zinc Alloy that works well in Spin Cast Vulcanized Silicone Molds for designs with thin cross sections or maximum detail. Contains Proprietary Grain Refiners for improved flow into the mold.
NEY Slush Cast (Gravity Pour) Zinc Alloy 895N955	94 to 96 Percent Zinc. This is a standard Slush Cast, Gravity Pour Zinc Based Alloy that is known in the industry as 95/5. It can be used for thin wall castings that need fine detail. We add Proprietary Grain Refiners for improved casting properties.
ZAMAC (ZAMAK) # 2, 3, 4, 5 & 7	We can Supply all of the ZAMAC (ZAMAK) Alloys with the most common being numbers 2,3,4,5,6 & 7. These meet ASTM, EN, JIS, GB and AS Specifications (e.g. ASTM B86 Castings) The name ZAMAC stand for Zinc Alloyed with Magnesium (Mg) Aluminum (Al) and Copper (Cu) or Kupfer (K) and was produced in 1929 by NJ Zinc.
NEY 380 Fluxless Aluminum Solder	A Proprietary Solder composed of Zn, Al, Cu, Mg that will solder Aluminum to Aluminum without a Flux.



▶ LOW MELT EUTECTIC ALLOYS



Neylo® Low-Melting or Fusible alloys are combinations of non-ferrous alloys such as Tin, Bismuth, Indium and Lead.

It was discovered that by combining several higher temperature base metals (elements) together in specific combinations, the melting point of the new alloy can be dramatically lowered. Generally these alloys melt below 450° F. (233° C) and can be Eutectic (fixed melting point) or Non-Eutectic Alloys.

The low melting temperature and unique growth/shrinkage characteristics of these alloys allow for a great diversity of useful applications

Applications: From radiation therapy shielding to creating chucks for holding fragile turbine parts during machining, Low-Melting alloys are indispensable. They can be used for tube or pipe bending or as fusible elements in automatic fire sprinklers. Even oil wells that are no longer in use, can be capped with our Neylo® 281 Low-Melting alloy. New applications are constantly being discovered.



Our alloys can be used to create amazing things, from a simple magic spoon that bends in the palm of your hand (Neylo® 117) to the magic of Micro-Electro Mechanical Systems (MEMS) that are used in technology for automotive applications, biochemistry, telecommunication and medicine. MEMS are made up of dissimilar metals for the TLP-Bonding process. Our Neylo® Tin/ Indium alloy can be combined as a thin film material with Copper / Silver thin film. (See Belmont for Cu, Au alloys) to create a Transient Liquid Phase (TLP) bonding system via sputtering targets. This technology has proven to be revolutionary for hybrid applications.

Our Neylo® Alloys allow industries to design new processes that continue to have a profound impact on ourselves and the world we live in. Contact us to discuss your Low-Melt alloy needs.

Neylo® Low-Melting Alloys, also known as Eutectic Alloys, are designed to melt at a very specific temperature. These are used in critical applications such as fusible links for fire prevention products. Our Non-Eutectic alloys have a wider melting point known as the plastic range. The variance allows for special product design.

▶ SOLDERING ALLOYS



NEY Solders are often used to join two or more dissimilar metals together by melting and flowing a solder (filler) metal into the joint.

Solders, by definition have a lower melting point than the adjoining metals, which does not involve melting the metals to be joined. Until the 1980's most solders contained lead. Since 1989, NEY has been instrumental in designing new formulas that are Lead Free and still maintain the properties required for flow, strength and ease of use. Our Lead-Free alloys can be used from R&D, to Electronics, to Jewelry, to Stained Glass, to Plumbing & Heating.

NEY offers a range of high, moderate and low temperature soldering alloys to meet a variety of your production needs. Our Ney380® Fluxless Aluminum Solder will allow a bond that requires no flux, which is typically used to remove the surface oxides of aluminum before soldering. The major application is in aluminum heat exchangers. For Aluminum soldering that require lower melting temperatures, we offer our Tin/Zinc alloys that work with a flux.

Our low melt alloys, such as our Neylo® 281 Alloy that is a Lead and Cadmium Free material, can be used to solder tin based alloys, such as the NEY Pewter's. It can also be used as a fusible material where Fusible Links are soldered together for fire suppression systems.

Electrical and Plumbing Solders are now produced from Tin based alloys with additions of Antimony, Copper or Silver. For over a century we have produced alloys for solder applications world-wide and we can produce standard and custom formulas to meet your solders needs as well.

FEATURED PRODUCTS	
380 Fluxless Aluminum Solder	Our NEY 380 Solder is a proprietary formula. Requires no flux. Metal-to-metal bond. 100% metal alloy. Stronger than the base metal with up to 45,900 PSI.
70/30 Tin/Zinc Solder 7702BN	Tin 70%, Zinc 30% Designed for Low Temperature Soldering of Zinc and Aluminum Alloys to prevent the melting of the base metal while forming the bond.
NEYlo 281E Low Melt Alloy	58% Bismuth, 42% Tin. A Eutectic Formula that is Lead and Cadmium free, allowing it to be safe for general use.
60/40 Tin/Lead Solder Alloy	Regular bar Tin 60%, Lead -40% Used for soldering Copper-based products. Easy to use, with a low melting point near 361 °F. Not for potable water systems.
Tin / Silver Solder	95% Tin, 5% Silver. High purity Tin and Silver are blended to product Lead-free electronic solders. Also for high-end jewelry and food grade applications.
Custom Formulas & Shapes Upon Request	



Solders are used to seal stained glass into the metal came channels.

Lead free solders are available in many formulas, including solders produced from our Neylo® Low-Melting Alloys.



▶ BABBITT METALS

The use of Tin or Lead alloys as an anti-friction material was not new but the alloys utilized at that time were far from reliable. Not until the early 1800's did Non-Ferrous alloys become an important part of manufacturing. It was at that time that Mr. Isaac Babbitt, a goldsmith by trade, worked with a Tin based Pewter alloy and refined the formula to create a material that would prolong the life of machinery, from cannons to steam engines. With the industrial revolution in full swing, the U.S. Congress offered Mr. Babbitt a grant to design anti-friction alloys for the U.S. Navy. With that success, his name has remained on a family of alloys that are used in anti-friction bearing applications for manufacturing all over the world.



All Neylite® brand Babbitt's meet or exceed the manufacturers OEM material. We certify our metals to match stringent ASTM, QQ-T, SAE, NIST and other specifications for the most demanding applications.

Much like Isaac Babbitt, the NEY name has been synonymous with quality tin based alloys. Since our inception in 1867, the famous NEY logo has been cast into an immeasurable amount of White Metal alloys, including many designed for his famous Babbitt applications. Our Neylite® brand of Babbitt's have been used in a growing industry of applications. Both Tin based and Lead based Babbitt's are available in a variety of alloy compositions that meet the strict specifications provided by the American Society of Testing Materials (ASTM-B23), U.S. Government Specifications (QQ-T-390) and the Society of Automotive Engineers (SAE). Each designation allows for a different formula that provides a wide range of benefits. We can supply Babbitt alloys from high speed shaft applications to load bearing capacity or for the ability of the Babbitt to withstand high temperatures.



Although Tin-Based Babbitt alloys have many properties that are far superior to Lead-Based Babbitt alloys, Lead Babbitt's may be sufficient in performance for a specific application and at a competitive cost.

NEY can produce any of the formulas your production requires. From Babbitt's designed for gravity cast, to metal spray, to centrifugal casting methods, our Neylite® Babbitt Alloys are the materials of choice.

We also invite inquiries on Copper-based, Aluminum-based, and Zinc-based bearing alloys. Call us for all of your Non-Ferrous White Metal Alloy needs.



We can help you meet strict compliance standards and still allow you to work with Post Consumer and Post Industrial materials as part of a Greener Footprint.

Ask us how you can save money and help save the planet with our products!

▶ OTHER ALLOYS

NEY started as a metal refining company. Today, we go beyond refining metals to Redefining Alloys!

Non-Ferrous alloys are used to create some of the most important products available to mankind. Their reach can be found from common household items to life saving medical devices. Their impact is immeasurable. With a century and a half of knowledge, NEY has been tasked to produce hundreds of variations of alloys. These alloys reach well beyond our local shores to factories that span the globe.

Companies designing innovative products require innovative materials. NEY stands ready to meet those needs. In fact, to this day, an innovative material, our Ney380[®] Fluxless Aluminum Solder that bonds aluminum to aluminum without a flux, sits quietly on the moon as part of the Apollo Lunar Excursion Module (LEM). Designed by a local company called Grumman Aircraft, it was used to bond some of the panels that the LEM was fabricated from. We can help send your profits to the moon when you are developing custom alloys for out of this world applications. Give us a call!



A Word About Belmont Metals Inc. As our century old sister company, Belmont supplies standard and custom non-ferrous alloys that have a melting point up to 2800F (1538C). Through the combined knowledge of NEY & Belmont, we can offer customers more variety of alloy compositions and shapes than any other alloy manufacturer in the United States.

NEY Metals can supply the following:

Aluminum Solders	Indium & Alloys
Antimony & Alloys	Jewelry Alloys
Babbitt	Lead Free Alloys
Base Metals	Low Temperature Alloys
Bismuth & Alloys	Pewter
Britannia	Phosphorus Tin
Cadmium Free Alloys	R&D Alloys
Centrifugal Spin Cast Alloys	Solders
Custom Alloys	Tin & Alloys
Eutectic Alloys	ZAMAK (ZAMAC) Alloys
Fusible Alloys	Zinc & Alloys

Belmont Metals can supply the following:

Aluminum & Aluminum Alloys	Copper Master Alloys
Aluminum Master Alloys	Degasifiers & Deoxidizers
Anodes: Cathodic	Hardeners
Anodes: Electroplating	High Purity Metals
Binder Alloys	Lead & Lead Alloys
Brass & Bronze Alloys	Minor Metals
Brazing Alloys	Nickel & Alloys
Copper & Copper Alloys	Sculpture Alloys
	Custom Alloys

ASK ABOUT OUR EXTENSIVE R&D CAPABILITIES!



▶ ABOUT US

We are a Premier Non-Ferrous, White Metal Alloy Manufacturer with a long heritage of generating environmentally responsible, superior products for worldwide consumption to customers that demand nothing less than unmatched quality, impeccable service, on time delivery and outstanding value for their Casting, Spin Cast, Gravity Pour, Die Cast, Extrusion and Solder needs.

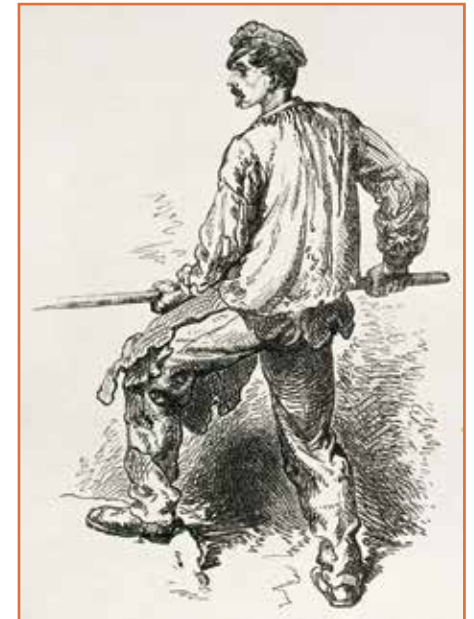
NEY was founded in Europe in the mid-1800's.

For 150 years NEY has been providing superior service to all trades using non-ferrous white metal alloys and products. In 1984 NEY purchased the LFI Brand of solders. This allowed us to expand into Lead Free formulas, such as Safeguard 50®. In 1987, we purchased the Kornblum Metals Inc. and continue to produce the KOR-ZEE® brand of Zinc alloys. In 2004, NEY merged its operation with Belmont Metals Inc, also based in Brooklyn, NY. As the leading, family run, non-ferrous red metals company, with over 120 years experience, Belmont shares in our corporate values of producing the highest quality materials while delivering unmatched service to their customers worldwide.

Our expertise in refining, alloying and manufacturing high purity metals has helped NEY maintain our position as a predominant force in the metal industry. Our flexibility to customize formulas has allowed us to remain competitive.

What we do best: Our knowledge in formulation produces outstanding products at understated prices. We have hundreds of formulas to work with. We can manufacture a single batch mix of a few pounds for R&D work to a few tons per heat for production runs. All manufacturing is done in our 80,000 square foot factory. We can supply high purity, virgin grade materials for quality assurance of each mix. We also offer consulting services, where we can help customize your alloy needs to meet specific product qualifications and cost allowances.

Advantages to our location: We are located in the heart of New York City. Our location allows us to ship your order without delay, whether it be by ground, air or port. Since freight is abundant and competitive, It also allows us to pass that savings on to our valued customers. Because of our location, we can draw on a large labor pool. This helps reduce overhead costs that we pass along in savings on to our customer.



▶ QUALITY ASSURANCE



We will always stand behind our products with a full guarantee of quality and workmanship. We have in house quality assurance and Lab testing methods for each batch and for critical certification, an independent analysis of our alloys from an outside source is also available.

To assure that those high standards are always met, we verify each heat by metallurgical analysis throughout the manufacturing cycle. We use SpectroMax state-of-the-art Spectroscopy (ICP-AES, ICP-MS AES) and utilizing the latest Standards for Traceability.

Our ISO 9001 Quality Assurance Audits guarantee that you will receive the most consistent products to meet your most stringent applications.

We also utilize XRF testing throughout our process, allowing a critical view in real time of the alloys being produced. This dedication to such high standards is what we believe is the key to our longevity. It offers a better product from us that continually assures a better production for you. That always translates into higher productivity and higher profitability at your factory.



From ASTM, to SAE, to MIL QQ Specifications, to ISO Certified Custom Formulas, NEY can produce all of your Non-Ferrous Alloy needs!



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