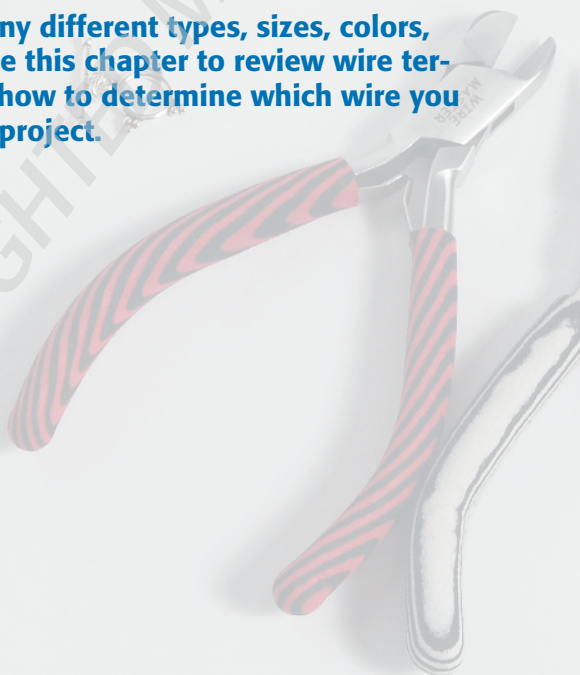


chapter

1

Jewelry Making Wire

Wire is available in many different types, sizes, colors, shapes, and metals. Use this chapter to review wire terminology and to learn how to determine which wire you should use for a given project.





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Types of Jewelry Wire

You can make wire jewelry with just about any wire that is soft and easy to bend. Generally, the wire sold at bead shops or through jewelry supply companies for “wirework” or “wire wrapping” will work well, but so will some wire that you find at the hardware store. (See “Jewelry Wire Metals” on the next page.)

Wire that is labeled as “craft wire” may or may not be appropriate for jewelry making. Wire made mostly of copper, like much of the color-coated wire sold through craft stores, is easy to bend into the shapes of jewelry components (although its color coating can be scratched by your pliers or hammer). Wire that is made of tempered steel or other stiff metals, including some floral wire, is usually not recommended. (*Tempered* wire is wire that has been hardened; see “Wire Temper” on p. 12.)

When in doubt, try to obtain a sample of wire to experiment with. Also check the packaging or ask your supplier what material the wire is made from.



TIP

Do not confuse wire used for wire-jewelry making with *beading wire* (also called *bead stringing wire*). The wire used to make wire jewelry is solid metal, whereas beading wire is flexible, nylon-coated cable used for stringing beads but not for wrapping beads or constructing components.

Jewelry Wire Metals

Both *base metal* and *precious metal* wires are used in jewelry making. The most popular base metals are copper, plated copper, nickel, and brass. Precious metals include sterling silver, fine silver, and gold-filled metals (often called “gold-fill”). Some of these metals can *tarnish*, or take on a darker color over time. For information about polishing them, see “Polishing Techniques” on p. 204 in the Appendix.

COPPER WIRE

Copper is one of the best metals to work with because it's easy to bend into nicely rounded curves. It has a feel similar to sterling silver, but is much less expensive. This makes it a great metal to use for practice. You can also use copper wire to make prototypes, or experimental mock-ups, of new designs.

A potential downside of copper is that it tarnishes very easily. It may also develop a scaly green coating when it's exposed to excess moisture. In sufficient quantities, this coating, called *verdigris*, can be toxic. For this reason, some people prefer not to wear copper jewelry. At minimum, some people find that copper temporarily stains their skin if they wear it for long periods of time.

You can purchase copper wire from jewelry supply companies, wire manufacturers, bead stores, craft stores, and even hardware stores.

BRASS WIRE

Brass is an alloy, or mixture, of copper and zinc. It ranges in color from bright yellow to reddish-gold (often referred to as “red brass”). Brass wire tends to be less expensive than nickel silver (see p. 7), and similar in cost to copper.

Like pure copper, brass is prone to tarnishing. Many people like the look of darkened brass because it gives jewelry a more “antique” look.

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Jewelry Wire Metals *(continued)*

Brass wire is more difficult to work with than copper, nickel, silver, or gold. Although it is a soft metal, it tends to be stiffer than the others and resists bending as smoothly. However, it can be a nice alternative to more expensive metals, and you will find it easier to use with practice. Brass wire is sold through most jewelry supply companies and hardware stores, although the richer-colored “red brass” is usually only available through jewelry suppliers and wire manufacturers.



NICKEL-SILVER WIRE

Nickel silver is a base metal that is silver-colored but does not contain any precious silver; it is an alloy of copper, zinc, and nickel. It is much less expensive than silver, but can be slightly more expensive than copper.

Nickel silver has a somewhat dull-gray hue. Although it is a soft metal, it does not bend quite as smoothly as copper and sterling silver. Also keep in mind that many people are allergic to nickel, which can create redness or even a rash on their skin. For this reason, you may want to avoid it for jewelry that will be worn closely against the skin. Nickel silver is sold through most jewelry supply companies.

STERLING-SILVER WIRE

Sterling silver is an alloy of pure silver and copper. In wire form, it is soft and very easy to manipulate. Because sterling silver is a favorite jewelry metal, it's naturally one of the most common metals used in jewelry wirework. Unfortunately, it's also relatively expensive.

As you probably know, sterling silver is also prone to tarnishing. You can reduce tarnish by wearing sterling-silver jewelry often because the oils from your skin help to protect it from the air. To fight tarnish when your sterling-silver wire or jewelry is in storage, store it with anti-tarnish paper or wrap it in anti-tarnish fabric.



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Jewelry Wire Metals *(continued)*

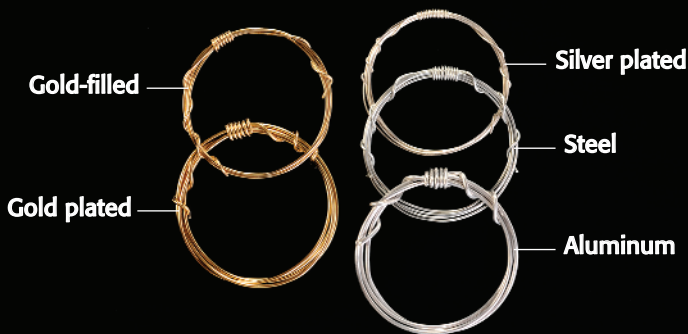
GOLD AND GOLD-FILLED WIRE

You're probably familiar with gold. In addition to being a gorgeous metal for jewelry, it resists corrosion better than most metals, and it typically does not tarnish. Gold is normally alloyed with other metals to make it stronger. The amount of gold in a given piece of metal is denoted by its *karat*.

Karat gold is extremely expensive. A popular alternative is gold-filled wire, which is made up of an inner core of base metal covered with a relatively thick layer of real gold. Although gold-filled wire is usually more costly than sterling-silver wire, it's much less expensive than gold.

SILVER- AND GOLD-PLATED WIRE

Plated wire is usually solid copper wire that has been washed with a very thin coating of silver or gold. Although it is very affordable and has a nice look when it's brand new, it is not recommended for elaborate wirework. This is because the thin coating of silver or gold can scratch or rub off very easily. Try to use it sparingly or only as practice wire. If you do choose to use it, be aware that both silver- and gold-plated wire are prone to tarnish because of the high density of copper beneath the plating. To help protect against tarnish, look for plated wire labeled, "non-tarnish" or "tarnish-resistant."



STEEL AND ALUMINUM WIRE

You can find wire made from steel and aluminum at most hardware stores. Steel wire is relatively hard but is still workable in smaller gauges, especially if it is annealed (see p. 12). Just be aware that larger gauges of steel can damage standard side cutters (see p. 22 in Chapter 2), and that steel is very prone to rusting. To avoid problems with rust, only use *stainless steel* wire for jewelry. Aluminum, on the other hand, is very soft—so soft that you can actually crush it with your pliers. Neither of these metals provides the color or shine of traditional jewelry wire, but you can experiment with them to make unusual and more cost-effective designs.

TIP

You can order pre-made jump rings made from steel and aluminum through chain-mail jewelry supply Web sites. To find them, try searching for the terms “chain mail jump rings” or “maillle jump rings” on the Internet.

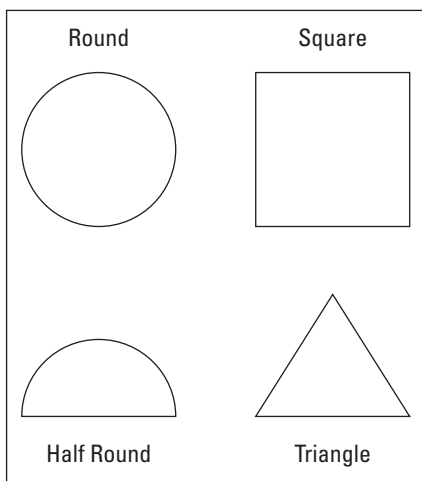
Wire Shape

Wire is manufactured by pulling (or “drawing”) metal through a hole in a hard metal plate. The shape of that hole determines the shape of the wire. The most common wire shape is *round*. Round wire is especially versatile because its appearance is not affected by minor twisting. To give round wire a twisted appearance intentionally, you can twist two strands of round wire together (see p. 99).

Square wire is also popular for jewelry making. Because it has flat sides, you can stack square wires on top of one another to create the look of a striated, solid piece of metal. Square wire can also be made to look more ornate by twisting it as a single strand (see p. 97).

Half-round wire is rounded (or “domed”) on one side, and flat on the other. It is often wrapped around stacks of square wire, flat-side down, to hold the square wires securely together.

Triangle wire has three equal, flat sides. You can use it in place of half-round wire for wrapping, or to create unusual-looking components. Like square wire, triangle wire can also be twisted as a single strand.



Wire Gauge

Wire size is denoted by a number called *gauge*: the larger the number, the thinner the wire; and the smaller the number, the thicker the wire. The chart on p. 196–197 in the Appendix provides the approximate diameters of the most popular American Wire Gauges (also called AWG) for jewelry making, and suggested uses for each. You can use this chart as a starting point for determining which gauge of wire to use for a particular project. The most common gauges used for wire jewelry are in the 26- to 16-gauge range.



TIP

Keeping Track of Wire Gauge

You may notice that there are very small size differences between one gauge and the next. When you purchase wire, the gauge should be indicated on the spool or package. However, you will often find stray pieces of wire, of various gauges, strewn across your work area. Consider purchasing a *wire gauge plate* so that you can measure and organize scrap wire for proper reuse (see “Measuring Tools” on p. 33.) Once you’ve determined the gauge of a piece of wire, you should mark it for future reference. Fold a small piece of masking tape around one end, and mark it with the gauge using a permanent marker.

Wire Temper

Temper refers to the hardness, or stiffness, of wire. Wire with *soft temper* is easier to bend than wire with *hard temper*. Base-metal wire is rarely labeled with its temper; but when you buy sterling-silver wire, you have a selection of tempers to choose from. Sterling-silver wire with *dead-soft* temper is the most versatile for jewelry making because it's the easiest to work with. However, you may want to use *half-hard* sterling wire when you'd like your finished component to be relatively stiff. For example, jump rings or ear wires are more durable when they're made from wire with half-hard temper.

You can manually increase the temper of wire by hammering it. When you tap on wire with a hammer, the molecules align so that the metal becomes stiffer. (To learn more about hammering tools and supplies, see Chapter 2.)

Temper can be softened by a process called *annealing*. This is often done by heating the wire to a specific temperature using a torch or kiln, and then cooling it in a controlled manner. If you plan to use steel wire in your designs, it's best to select annealed steel to ensure that it will be soft enough to work with.

TIP

Temper and Wire Breakage

Temper is also increased when wire is repeatedly bent. In fact, the more you bend a piece of wire back and forth, the stiffer and more brittle it becomes, which can cause the wire to break. For this reason, always avoid over-manipulating wire. If a component begins to feel very stiff or fragile as you work with it, you should discard it and create a new one.

You can, however, gently bend wire back and forth to purposely make it stiffer. This technique is often used to increase the security of dead-soft jump rings. If you gently open and close a dead-soft jump ring two or three times, it will be less likely to come open by itself; if you open it too wide or open and close it many times repeatedly, it will break.

Wire Finishes and Treatments

Some wire materials are prone to tarnishing, or darkening, over time as they are exposed to the air. You can clean and polish your wire and wirework designs for a bright, shiny finish (see the next section, “Wire Care”), allow them to darken naturally, or intentionally darken them using chemicals to create an oxidized or “antiqued” look. (Refer to “Oxidization Methods” in the Appendix for more information about these techniques.)

Wire that has been treated or manufactured to resist oxidation is also available. Examples include “tarnish-resistant” copper and plated wire (which is typically coated), and the Argentium brand of sterling-silver wire (which has been chemically altered to inhibit oxidation). Consider using these wires when you want to create jewelry that will remain bright and shiny over time.



TIP

Keep in mind that any surface-treatment coating, whether to protect wire from tarnishing or to add color, can be damaged by your wirework tools. Always manipulate this wire gently with your pliers, and use nylon-jaw, taped, or coated pliers if possible.

Wire Care

Here are some tips for keeping your wire, and wire jewelry, clean and in good condition.

CLEANING

It's a good idea to clean your wire jewelry after you complete a design. This removes any oils or debris that accumulated on the wire during construction. Jewelry cleaning products that contain small amounts of ammonia work well for most jewelry. You can usually find them at drug stores, sold as plastic containers of transparent, blue liquid. Dip the jewelry into the liquid and then use a very soft brush (like an infant toothbrush) to gently scrub all of the wire components in the design. Rinse and thoroughly dry your jewelry before wearing or storing it.



POLISHING

Although cleaning will brighten your jewelry and add sparkle, it will not remove unwanted tarnish. To remove tarnish from your wire or wire jewelry, you need to *polish* it. Common polishing methods include using a *jewelry polishing cloth*, *silver-polishing paste* or *cream*, or (for finished jewelry) a *rotary tumbler* that is designed for tumbling rocks. Copper wire can also be polished using household vinegar or lemon juice. (See "Polishing Techniques" in the Appendix.)

TIP

Before using any cleaning or polishing chemical on your jewelry, check the product packaging to make sure it is intended for use on all of the materials your jewelry contains. For example, if a design includes softer gemstone beads or pearls, they could be damaged by ammonia-based cleaners and polishing compounds.

STORAGE

Wire tends to oxidize more quickly when it's exposed to the air. To protect your wire and jewelry from tarnish, it is best to store it inside sealed plastic bags or jewelry pouches made from tarnish-resistant cloth. You can also purchase tarnish-resistant paper tabs or strips that you can store with your jewelry inside a bag or pouch. These little papers contain chemicals that help keep metal from oxidizing. Alternatively, consider using a jewelry box lined with tarnish-resistant fabric, or make your own pouches or lined storage containers using tarnish-resistant fabric from a fabric store.



Keep in mind that wire and wire jewelry usually resist tarnish, to some degree, after they have been polished with a polishing cloth, paste, or liquid, because some of the polishing compound remains on the surface of the metal. This is especially true if you buff your jewelry with a clean cloth after polishing, rather than fully cleaning it.

GENERAL TIPS

Finally, be sure to always handle your handmade wire jewelry gently, and protect it from harsh chemicals (especially household bleach), moisture, or situations where it could easily become damaged. Wire components can be pulled apart, stretched, bent out of shape, and even weakened if they are snagged or crushed. If you care for your wire jewelry as you would fine jewelry, it should give you years of use and enjoyment.