

## Glossary

### A

**acid** Jewelers use acids in various processes such as plating and pickling. Pickle is a mild acid in which an item of metal is placed after soldering to remove oxides.

**alligator clips** These are metal grippers which open and close when pressure is applied; usually attached to a stand so that clips are raised. Used during soldering to keep items in place.

**annealing** Heating metal which has become work hardened to loosen the molecules so that the metal can be worked further.

**anvil** Steel block, usually with a horn (extended part which ends in a point and is used for forming and raising) used in hammering techniques for which a hard surface is needed.

**appliqué soldering** (also called sweat soldering) Soldering one piece of metal onto another, usually a smaller piece onto a larger one. Usually solder is applied to only one of the pieces.

### B

**bail** A type of finding. A loop or double loop, usually metal, which is connected in some way to a pendant. Used to hang the pendant on a chain or cord. A jump ring can serve as a bail.

**baking soda** Household cleaning powder used to neutralize acids and acid spills. An important safety item to have around.

**ball pien hammer** Double headed hammer with one head being flat and the other round. Come in assorted sizes, with each head being proportional to the other.

**bezel** A metal setting for a stone, usually a one cut in the cabochon style. Setting encircles entire base of the stone and holds it in place with the thin sheet of metal (bezel wire). Bezel settings should always have a hole in the base of the setting (where the base of the stone will go) in case the stone ever needs to be removed.

**buffing wheel** (also called buffing motor, polishing motor) Power tool, usually 1/4 to 1/3 horse power. Motor has spindle which extends from one or both sides and spins counterclock-wise (toward the user). A buff is placed on the spindle and charged with polish. The tool is used to finish a piece; create a surface which is evenly “shiny” or “matte.”

**burnish** To intentionally work harden a piece of metal in order to make it stronger. Example: pin stems and ear wires are usually burnished because stiffness makes the item more effective in its purpose.

**burnisher** Steel tool, usually with a wooden handle. Varieties include straight and curved, and are available in different lengths. Used on metal against a steel block to intentionally work harden.

**butt soldering** Soldering two items end to end, with each piece filed so that they meet perfectly. Example: two ends of a fabricated ring.

## C

**craftsperson** One who creates craft, who has studied and attained a certain level of achievement in her/his field. An encompassing term which includes crafters in many disciplines such as weaving, pottery, metalsmithing, knife making, blacksmithing, jewelry, and more.

**calibrated** Refers to a faceted gemstone which has been cut exactly to a standard size. This standardization makes stonsetting easier for the jeweler because it allows she/he to purchase stones and settings (or make settings) knowing they will work together.

**casting** Creating items in metal through a multi-step process which does not require exclusively the working of metal, as fabrication does. In the lost wax process, a model of the desired item is made in wax and then immersed in investment (like plaster) inside a flask. The wax is then burned out, usually in a kiln, and then melted metal is poured into the resultant empty space (left by the wax) either by centrifugal method or vibratory method.

**contamination** Occurs when polishes are mixed on metal work pieces or buffs or in pickle when steel or unauthorized metals enter pickle. When contamination occurs in pickle, the pickle must be thrown away. Buffs may need to be washed before re-using. To be avoided.

**charcoal** A fire safety device and heat enhancer. Sold for jewelry use in block form. Items for soldering are placed on top of the charcoal block. Heat from the torch flame warms the charcoal block which in turn warms the metal. This additional heat source helps the piece stay hot and evenly heated. Because charcoal emits heat, it is not safe to use alone (is in, directly on top of a wooden table); these should always be used in conjunction with fire bricks or ceramic pads.

## D

**drilling** Using a power drill or hand drill with drill bits (small cutting devices) to force holes into metal.

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### E

**easy solder** A type of hard solder. Has the *lowest* melting point of the three most commonly used hard solders.

**epoxy** Type of glue which comes in two parts: resin and hardener. Comes in varieties which dry in different lengths of time, such as five minutes or two hours. Better able to withstand daily wear and contact with water than most glues. Usually can only be removed with special chemicals. Epoxy is acceptable for repairs of costume jewelry and for items

which can be joined in no other way, and as a last resort. Epoxy is NOT an acceptable substitute for soldering, riveting, connecting by jump rings, or other accepted metalsmithing techniques.

## F

**fine silver** Silver which is 999 parts pure silver out of 1,000.

**findings** These are the functional parts of jewelry which facilitate its being attached to chain, cord or clothing. The name for the group of items which includes ear wires, ear posts, bails, pin catches/joints/stems, clasps, and the like.

**fabricate** To create something from metal (such as jewelry) raw materials such as sheet metal and/or wire, and using direct techniques such as sawing and soldering.

**fusion weld** To connect items of metal (usually findings to a piece) without torches or solder. Requires special welding machine and specific type of findings.

**fibula** A broach which includes as an integral part of its design the pin stem (*i.e.* the item which affixes the broach to the clothing).

**file** A steel tool with one or more cutting surfaces.

**filing** Using a file to manipulate the shape of metal, or to smooth a piece's edges and/or surface. A file is a steel tool with one or more cutting surfaces.

**finishing** General term which covers sanding, filing, polishing and tumbling (rotary finishing). The process of gradually changing the surface character of a piece until it reaches the desired finish and appears even.

**forming hammer** Hammer with two heads, both of which are rounded and bulbous. One is larger than the other. Used to "form" or "raise" shapes from flat metal, such as a bowl.

## G

**grinding** Removing surface material from metal through repeated application of rough abrasives such as an abrasive wheel on the flexible shaft or a grinding motor.

## H

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**hammers** hand tools with wooden handles and steel heads used primarily to shape metal by striking.

**hard solder** A type of hard solder. Of the three most commonly used types of hard solders, this one has the *highest* melting point.

**hard soldering** A type of soldering. Requires higher temperatures than soft soldering. Utilizes silver solder or gold solder.

### J

**jeweler's saw** An important hand tool for creating jewelry by hand. Uses saw blades which are available in assorted thicknesses and cutting strength. Sawing takes place by the repeated moving of the saw up and down through the metal, with the cutting taking place on the down stroke.

**jump ring** Wire in the shape of a circle with an opening. A cold connector used to join items.

### L

**liver of sulfur** A type of chemical used to create a dark surface oxidation (tarnish) on silver. Done to create contrast.

**lubricant** Used on saw blades to make sawing easier. The wax (lubricant) melts due to the friction of sawing and then the liquid wax allows the blade to move more freely through the metal. Term can also be used to refer to oils used on power tools (tumbling machine, flexible shaft) to keep them running well.

### M

**mallet** Similar to a hammer; head is always cylindrical. Wooden handle with a rawhide or plastic head.

**married metals** Soldering together metals of different colors and then removing parts of upper layers so that the contrasting layers beneath can be seen. Can be done with as few as two layers of metal.

**medium solder** A type of hard solder. Of the three most commonly used types of hard solders, this one has the *middle* melting point.

**metalsmithing** General term which covers silversmithing, goldsmithing, blacksmithing and the use of similar techniques on other metals such as brass and copper. Refers to the working of metal by hand using various techniques. An inclusive term.

**mokame gane** A Japanese technique. Soldering together many layers of metals of contrasting colors; once a “stack” is created, it is cut in half and the two halves soldered together. This action and additional ones are repeated until the resultant metal is a sheet of beautiful, highly patterned metal which cannot be soldered.

**mold making** The creation of a rubber mold which contains the shape of an item of jewelry and (sometimes) the sprue which is required to cast it. The rubber mold is filled with wax. Mold can be used repeatedly, so is useful for making multiples of an item.

## **P**

**paste solder** Form of solder which consists of tiny bits of solder imbedded in a paste (such as paste flux) Used mostly for production when many similar items need to be soldered.

**patina(s)** Surface coloring of metal, frequently through the use of chemicals.

**pickle** A mild acid which is used to remove oxides which form on metal during soldering or other heating techniques.

**planishing hammer** Hammer with two heads which appear to be flat, but which are actually slightly curved outward, with one being more curved than the other. Used to remove hammer marks caused when an item was raised or formed.

## **R**

**raising** Causes a flat sheet of metal to take on a three-dimensional shape without using soldering. Item is “raised” entirely by the use of hammers, anvils and stakes.

**ring vise** A hand tool for holding rings while working on them, such as while setting stones in the ring or polishing it. Made of two pieces of wood with a hinge at the center point. The ring is placed in the leather covered jaws of the vise and then held in place by pressure when a wooden triangle is placed in the opposite end of the vise.

## **S**

**sanding** Smoothing metal’s surface by repeatedly rubbing it with sandpaper, a paper with an abrasive on one side.

**saw blade** A thin metal item with cutting teeth used for sawing metal; used in a jeweler’s saw frame.

**sawing “V”** A wooden tool used when sawing metal with a jeweler’s saw. Used to brace the metal; the metal rests of the outer edges of the “V” and the saw blade cuts the metal at the open part of the “V.”

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**soft solder** A type of hard solder. Of the three most commonly used types of hard solders, this one has the *lowest* melting point.

**soft soldering** Soft soldering is lower temperature soldering than hard soldering. There are two types of soft soldering, one of which can be used on silver, and another which cannot. (see also tin soldering)

**soldering** Causing two or more metals to be joined using heat and another metal (solder) which has a lower melting point than the metals.

**soldering pic** a small wooden handle tool with a steel working end which has a sharp point. Steel part is about four inches long. Used during soldering to move items or to draw solder to a desired location.

**soldering tweezers** tweezers with wooden finger grips used during soldering (since metal gets hot when placed in or near flame); usually of the interlocking type.

**spring ring** A clasp which operates with a spring mechanism and is round; used to connect bracelets and necklaces during wearing.

**stamping** Creating designs on a metal's surface using small chisel-like tools which have a pattern, shape or design on one end. The opposite end is struck with a hammer or mallet.

**sterling silver** Silver which is 925 parts pure silver out of 1,000.

**supplies** Items used in jewelry making which are consumed as a part of their use, as opposed to tools, which are durable. (Example: saw lubricant, flux.)

**sweat soldering** (also called appliqué soldering) Soldering one piece of metal onto another, usually a smaller piece onto a larger one. Usually solder is applied to only one of the pieces.

## T

**textures** Surface patterns on metal which are not very deep and which add to the interest of the piece.

**Tin soldering** Not to be used on silver. A type of solder which has a lower melting point than any of the hard solders. Used in stained glass making and electronics.

**tools** General term referring to items used in creating jewelry which are not used up or destroyed in the process, but endure.

**third hand** A tool used in soldering to hold an item in place. Consists of a stand with either tweezers or alligator clip(s).

**tripod** A three legged stand with a circular top, used with a screen on top of it during soldering to allow heating from below.

**torch** A tool for heating metal. Used in heat coloring, soldering, reticulation, fusing and annealing. Usually made up of tanks of gas or gases, regulators for said tanks, and hoses from tanks to the hand pieces. Gas combinations include: propane alone, butane alone, oxygen/propane, oxygen/acetylene. Different gases have different levels of heat they can achieve; some are dirtier than others, and some are heavier than others. Also, prices and types of canisters gases are available in vary. The simplest type of torch is the gas only torch with the hand piece attached directly to the tank (propane sets like this are sold at hardware stores and are probably the most affordable type of torch); this type has one gauge (on/off switch).

## V

**vis** A large tool for holding a work piece in clamp like jaws that screw tighter or looser. Usually made from pot metal; able to be attached to a workbench.

## W

**work hardening** a state of metal which cannot be shaped further because it has reached its limit. The molecules have been forced close together and the piece must be annealed to loosen the molecules.

## Y

**yellow gold filled** base metal joined with a top layer of karat gold. Yellow gold filled (aka YGF) has a thicker layer of gold than gold plated items. Described in terms of the karat of the gold used and the thickness of the layer, as in 14/20, where 14 signifies 14 karat.

## Appendix B

### Birthstones

January	Garnet
February	Amethyst
March	Aquamarine or Bloodstone
April	Diamond
May	Emerald
June	Pearl or Moonstone
July	Ruby
August	Peridot
September	Sapphire
November	Topaz, Citrine
December	Turquoise or Zircon

### Inch - B & S Gauge Chart

<b>B &amp; S Gauge</b>	<b>Inches (in decimals)</b>
30	.010
29	.011
28	.012
27	.014
26	.016
25	.018
24	.020
23	.022
22	.025
21	.028
20	.032
19	.036
18	.040
17	.045
16	.051
15	.057
14	.063
13	.072
12	.081
11	.091
10	.102
9	.114

8	.128
7	.144
6	.162
5	.182
4	.204

## Appendix B (continued)

### Mohs Scale of Hardness

Hardness	Mineral
1	Talc
2	Gypsum
3	Calcite
4	Flourite
5	Apatite
6	Feldspar
7	Quartz
8	Topaz
9	Corundum
10	Diamond