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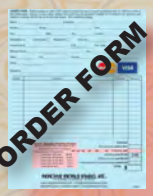
Please note: We do not have online ordering. We are happy to take your order over the phone, by fax or email.



I'm a Member of Society of North American Goldsmiths. Artists. Designers. Jewelers. Metalsmiths.

RMS
Reactive Metals Studio Inc

PO Box 890, Clarkdale, AZ 86324
800/876-3434, 928/634-3434, 928/634-6734fx
info@reactivemetals.com

Last updated: 9-5-19

WHAT'S NEW?

Birdseye Mokume! Pg 17.

Banha Flat Mokume! Pg 18.

5% Shibuichi/Sterling Rod! Pg 19.

New Nb Disc Patterns! Pg 4.

Haida Mokume Gane! Pg 17.

Titanium Ball Chain & Connectors! Pg 35.

Back in stock: 26ga Ti Krystal Sheet! Pg 6.

Michele Deborah Sharon

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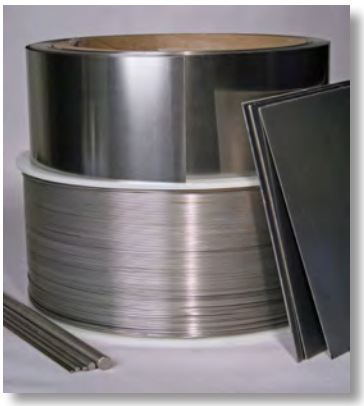
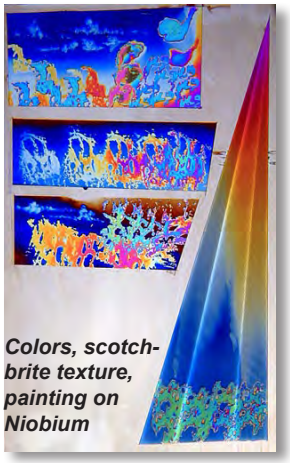
MJSA

NIOBIUM



Niobium(Nb) is named after Niobe, daughter of Tantalus. Ore reserves are found in Canada, Brazil, Nigeria, Zaire and Russia. Nb is used in pure and alloyed form in superconductors, sodium vapor lamps(street lights), rocket boosters and other aerospace applications.
Niobium is so slow to work harden that annealing is not necessary for most applications. (Annealing requires a high vacuum or an inert atmosphere furnace.) The reactive metals cannot be soldered and must be joined with cold techniques, i.e. rivets, nuts & bolts, adhesives. or special settings. Findings can be fusion welded with Sparkie welders, see pg 37. Highly formable and very colorable via anodizing, this is the most popular of the reactive metals. **Hypoallergenic, nickel & lead free**. ASTM B392, 393 Type 2

Flat Sheet



Colors, scotch-brite texture, painting on Niobium

Our niobium is custom processed and annealed. Maximum 6 x 12 inches. Minimum 3 x 3 inches, larger in 3 inch increments only. Other thicknesses and dimensions are available by special order.

	$/6" x 12"	$/sq in
20 ga (.032"/.81mm)	409.68	5.69
24 ga (.020"/.51mm)	254.88	3.54
26 ga (.016"/.41mm)	209.52	2.91
28 ga (.013"/.33mm)	172.80	2.40
30 ga (.010"/.25mm)	139.68	1.94

Coiled Strip (annealed)

This is our standard niobium in coil form with an "as rolled" finish. The surface finish will vary slightly and will have a slight curve from coiling. Minimum 3 x 3 inches, larger in 3 inch increments only. Other thicknesses and dimensions are available by special order.

	$/3" x 12"	$/sq in
28 ga (.013"/.33mm)	91.80	2.55

Niobium Starter Kit

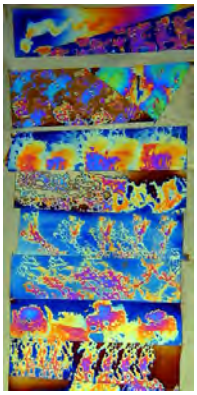
Includes: "Guide to Using the Reactive Metals", 4pp; Sheet: 3"x 3"x 28 coil, 1"x 3"x 24ga; Wire: 1' 10 ga, 5' 18ga, 5' 20ga, 5' 24ga, 10" 1/8" tubing.

Save 15%! $72.66

Prices are subject to change.

Metals

Niobium
- **Atomic #41**
- **Atomic weight-92.91**
- **Lattice-Body ctrd cubic**
- **Melting pt-4474°F(2468°C)**
- **Density-.310 lb/in3**



Playing with sponges on Niobium

TOLL FREE
800 876-3434

Round Rod & Wire

Heavy stock for forging and machining is fully annealed and very soft. Available in coil and straight rod(STRT*).Gauges 12 through 24 used in findings and other forms are slightly cold worked or "half-hard". Half-hard wire is still ductile and can be easily worked. Minimum - one foot, must order in full foot increments.

		$/ ft
4 ga	(.204"/5.18mm)STRT*	72.36 annealed
6 ga	(.162"/4.12mm)	42.40 annealed
8 ga	(.125"/3.25mm)	36.04 annealed
10 ga	(.102"/2.59mm)	15.77 annealed
12 ga	(.081"/2.06mm)	15.11 half-hard
14 ga	(.064"/1.63mm)	6.69 half-hard
16 ga	(.051"/1.30mm)	4.28 half-hard
16 ga	(.051"/1.30mm)STRT	2.31 half-hard
18 ga	(.040"/1.02mm)	2.66 half-hard
20 ga	(.032"/0.81mm)	1.72 half-hard
21 ga	(.029"/0.74mm)	1.37 half-hard
22 ga	(.025"/0.64mm)	1.07 half-hard
22 ga	(.025"/0.64mm)	1.07 annealed
24 ga	(.020"/0.51mm)	.76 half-hard
28 ga	(.013"/0.33mm)	.39 annealed

Precolored Niobium Wire

Ten foot(3.0m) individually packaged coils in eight outstanding colors. Care should be taken with steel tools when manipulating this wire. Tape the jaws of pliers and other tools to protect the colors. Combine color and size for quantity price breaks.

Color Chart

	COST PER 10' COIL		
	ea	5+	10+
24 ga	$13.92	$12.24	$10.32
22 ga	17.55	14.88	13.01
20 ga	25.06	22.03	18.58

Niobium Seamless Tubing

These are soft, formable, seamless tubes that color great!

12ga (2mm) Niobium/1% Zirconium, wall is .010"
Random lengths of approx. 11 inches — **$3.50 ea**

3/4 in (19mm) Niobium, wall is .065"
Forgable, stretchable ring stock — **$9.77/in**
$117.18/ft

Prices are subject to change.

Metals

NEW!
Tools Page
Page 28

MINI GRABBER

We customize this tool at RMS for anodizing. The niobium tip won't fizz or dissolve. Excellent for findings & small parts.

TOLL FREE
800
876-3434

Niobium Flat Discs

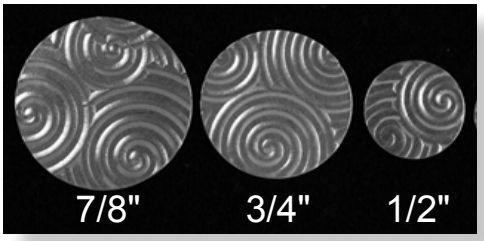
28 ga (.013"/.33mm) precut Niobium Discs in 4 diameters. Anodize multiple designs using our Mighty Mask line on pgs 11-14. Easy to dome with our Wood Dapping Set, pg 29. Punch with our Hole Punch Pliers, pg 28. Buy bulk and save!

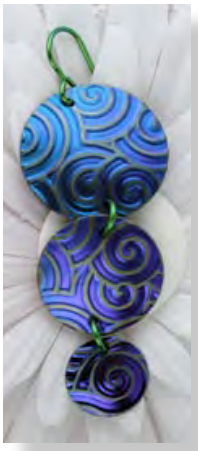
	Each	10+	25+
3/8"(0.375"/9.525mm)	$ .48	$ .44	$ .36
1/2"(0.500"/12.7mm)	.92	.84	.69
3/4"(0.750"/19.050mm)	1.77	1.62	1.33
7/8"(0.875"/22.225mm)	2.50	2.29	1.87

Sample using Mighty Masks (pg 11) and scotch brite pads (pg 9)

Niobium Patterned Discs

30ga (.010"/.254mm) precut Niobium Discs in 3 diameters and 13 styles. Anodize then sand off the raised areas with our new sanding pads (pg 9) and re-anodize at a lower voltage for stunning results! Combine styles within a size for price breaks. **Please note exact duplication of pattern is not guaranteed.





Glacier

Bamboo

Escher

Tiger

Feather

Fizz

Flourish

Geo

Scales

Tribal

Tropics

Inca

Zephyr

	Each	10+	25+
1/2"(0.500"/12.7mm)	1.17	1.10	.98
3/4"(0.750"/19.050mm)	1.86	1.74	1.50
7/8"(0.875"/22.225mm)	2.66	2.49	2.15

Patterned Disc Kits

Includes one pair of each of the 13 different patterns above. 26 pcs. Save 10%!

1/2"	$22.93
3/4"	35.10
7/8"	50.31

Prices are subject to change.

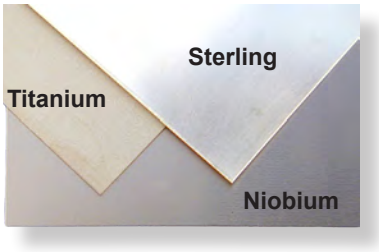
REFERENCE TABLES
Page 46

HOLE PUNCH
Page 28

NB KIT W/ ANODIZER

TOLL FREE
800 876-3434

Our Titanium sheet and wire products are all Grade #1 Commercially Pure. They are ductile and can be formed with some effort. Industrially it is vacuum or inert gas annealed. Titanium can be heat colored, though the results are less predictable than anodizing. Titanium will need a chemical cleaning, like our **Multi-Etch**, to achieve the high voltage bright colors. It is corrosion resistant and hypoallergenic.



Sheet

This annealed Grade #1 sheet is specially etched to our specifications. Surface finish and hardness will vary. **Multi-Etch** is the non-acid preparation for high voltage anodizing of titanium (See page 10). Minimum sheet 3 x 3 inches, larger in 3 inch increments only.

	$/12" x 12"	$/6" x 12"	$/sq in
22 ga (.025"/0.635mm)	$63.36	$31.68	$ .44
26 ga (.016"/0.406mm)	59.04	29.52	.41

Titanium
- **Atomic # 22**
- **Atomic weight-47.9**
- **Lattice-Close pkd hex**
- **Density-.163 lb/in3**
- **Melting pt-3038°F(1668°C)**

Round Wire & Rod

Custom drawn Commercially Pure Grade #1 Titanium specially acid cleaned for jewelry applications. **Multi-Etch** (See page 10) provides the perfect surface for bright, high voltage anodizing. Available in coil & straight rod(STRT). One foot increments. (Exception- 1" bar in 6" increments.)

	$/ft		$/ft
1.125" (28.57mm)STRT	132.00 annealed	16 ga (.051"/1.295mm)	.94 half-hard
4 ga (.204"/5.182mm)	10.06 annealed	16 ga (.051"/1.295mm)STRT	.57 half-hard
8 ga (.125"/3.175mm)	4.43 annealed	17 ga (.045"/1.143mm)	.57 annealed
10 ga (.102"/2.590mm)	2.56 annealed	18 ga (.040"/1.016mm)	.62 annealed
12 ga (.081"/2.057mm)	1.80 annealed	20 ga (.032"/0.812mm)	.41 annealed
14 ga (.064"/1.626mm)	1.43 half-hard	24 ga (.020"/0.505mm)	.18 annealed
		30 ga (.010"/0.250mm)	.11 annealed

See Pg 44

Titanium Starter Kit

Includes: "A Guide to Using the Reactive Metals", Sheet: 3" x 6" x 22ga, 3" x 6" x 26ga, 3" x 3" x 24ga Krystal Titanium; Wire: 3' 16ga, 10' 18ga, 12' 20ga, 20' 24ga.

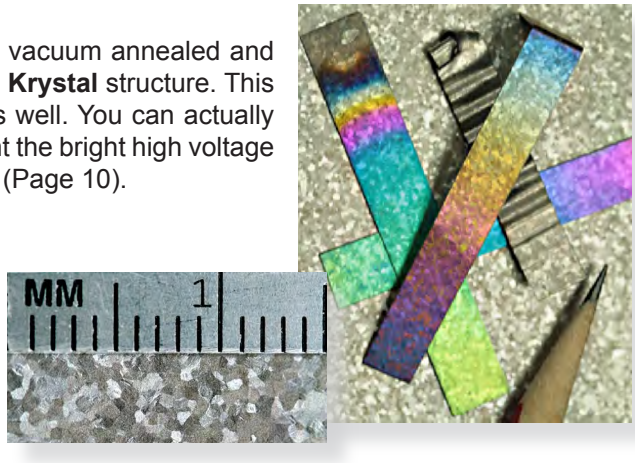
Save 15%!

$34.06

TOLL FREE
800 876-3434

Krystal Titanium©

Grade #2 Commercially Pure Titanium sheet, vacuum annealed and etched to reveal the Close Packed Hexagonal **Krystal** structure. This metal is spectacular! It is annealed and forms well. You can actually hear the Krystals move as it is bent. If you want the bright high voltage colors it will need a quick dip in hot Multi-Etch (Page 10).



24 Gauge
Maximum 6 x 12 inches. Minimum 3 x 3 inches, larger in 3 inch increments only.

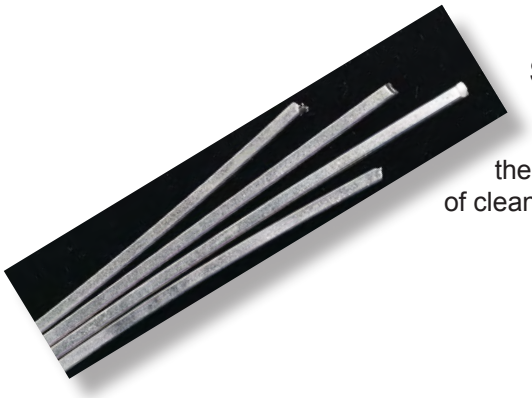
	$/6" x 12"	$/sq in
24 ga (.020"/.51mm)	**77.52**	**1.08**

26 Gauge	**Price per piece**	
26 ga (.016"/.406mm)	**3+" x 3"**	**$12.51**
	3+" x 6"	**$25.02**
	3+" x 9"	**$37.53**
	3+" x 12"	**$50.04**

.062" x 36" Round Rods

This Grade #2 (read as hard) straight rod is strong and springy. It is perfect for soldering picks. Now you can make your own to fit your needs. Minimum 1 foot, in one foot increments.

	$/ft
.062"/1.574mm	**.85**



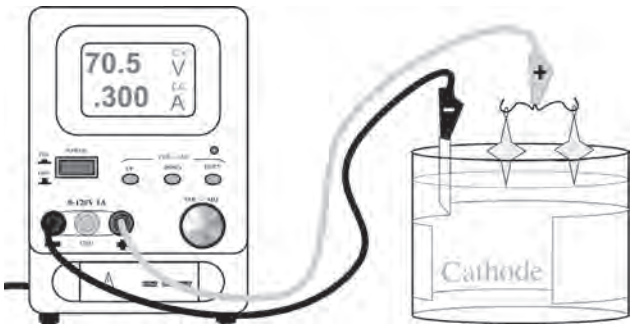
Square Rod

Grade #2 (read as hard) titanium. Its surface is smooth, ends are angled. In a large vise we have twisted it and then formed it into bracelets. It can be hot worked, just a lot of clean-up. Straight lengths of 10.4"

10.4" Length	**.140"/3.556mm**	**$3.50 each**

Understanding Anodizing

Anodizing is a fast & simple electrical process that generates very thin transparent oxides on the surface of the reactive metals. This film generates interference colors similar to the ones you see on an oily wet street. There are no pigments or dyes. It takes a special high voltage electrical power supply. The process can be applied in a bath or with brushes and other applicators. Colors can be controlled and laid down individually by using masking techniques.



NEW!
Tools Page
Page 28

TITANIUM FINDINGS

Email your order direct to info@ reactivemetals. com

Instructions

SMT Micro Anodizer

0-120 Volts, 0-1Amp and solid state. Precision 10 turn voltage control. The power to run larger baths and precise control. It is the right power supply for one of a kind and production anodizing. Full digital voltage and amperage meters. The output is pure smooth DC. The SMT Micro includes two sets of color coded leads, one pair of rubber gloves (specify sm, med or lrg), one foot length stainless steel cathode, one sheet Spark Guard Mesh, full instructions and Studio Preparation and Coloring of Titanium, by Bill Seeley. One year manufacturers Warranty. Input 110-127Vac+/-10%, 50-60Hz +/-2%, Dimensions: 7in.H x 5in.W x 10in.D(180mmW x 130mmH x 300mmD), Weight 15 lbs(6.8kg). Step down transformer 250-300 watts.

$235.86

SMT Starter Kit

Includes the SMT Micro, Magic Wand (pg7) MINI Grabber (pg8), Small Parts Basket (pg9) and a box of TSP-PF (pg9). Save 5%.

$282.54
add a Nb Starter Kit $355.20

Commercial Anodizer

Optimized for commercial anodizing applications. Full 0-150 volts and 0-7amps controlled by sensitive ten turn pots. Both volt and amperage digital meters are mounted on the face with all other controls. Current Limit Preview at the touch of a button. These are heavy duty, solid state, smooth DC, switching power supplies, designed for years of hard use.
Unit includes two 36 inch color coded leads with insulated banana plugs and alligator clips, one pair of rubber gloves (specify sm, med or lrg), one foot length stainless steel cathode, full instructions and Studio Preparation and Coloring of Titanium. **Power Factor Corrected** for inputs from 100 - 240 Vac, 47-63Hz, 7.5 - 13 Amps. Height 3.5 in x width 8.45 in x depth 19.5 in.
Five Year Manufacturers Warranty.

Instructions

0-150 volts DC, 0-7amps, 14 lbs/6.4 kg $3311.89
Call for current quote.

Magic Wand©

How do you manage to not get your alligator clip lead into the bath and still color your pieces? The Magic Wand© is the answer!
Just place your piece(s) into our Small Parts Basket (pg9), place it in your bath, plug the Magic Wand© into the red jack and touch your pieces with the wand. Voile! Thick shrink tube covers a heavy pre-anodized Niobium rod for easy handling. 6" wand with a 24" heavy duty lead.

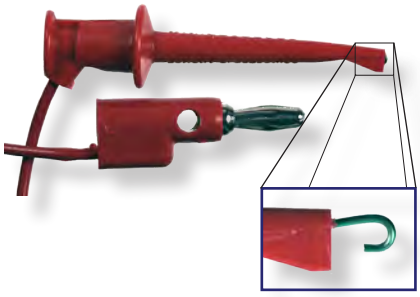
$32.50 ea

Anodizer

FAX
928/634-6734

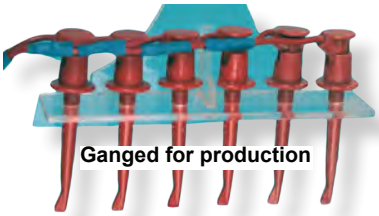
NIOBIUM FINDINGS

MINI Grabber with Niobium Tip



.025" dia. Niobium tip

This is our exclusive non-corroding submersible **MINI Grabber**. The contact is .025" niobium wire with a stainless steel spring and glass filled insulation. The jaw is very small and will help prevent contact marks on delicate work. The banana plugs are stackable so you can run multiple grabbers or fabricate a "ganged" group for production anodizing. All on their 36 inch leads.



Ganged for production

$12.81 ea

Paint Brush Leads

The easy way to create your own masterpieces! Just plug in the lead to the black jack on your anodizer, dip into electrolyte and "paint" on your niobium or titanium that has been clipped to your red (anode) lead. Great for use with PnP Blue Transfer Paper and any of our Mighty Masks or Lace Tapes or just free hand it for all you Van Goghs out there! Heavy duty wire soldered to the ferrule and covered with a thick adhesive shrink tube will ensure years of problem free painting. 7-8" brush with a 30" cord.

$25.00 ea

Paint Brush Lead Kit, 1 of each of the 4 styles, save 10%! $90.00 ea

#3/0 Round

#2 Round

#6 Round

1/4" Flat

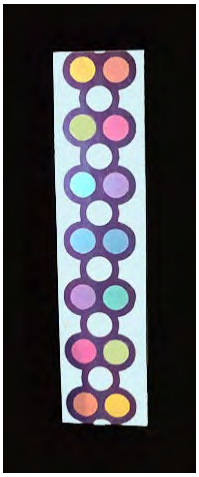
Freehand Niobium painting by Marti Brown using Paint Brush Leads.

Niobium patterned disc (pg 4) painted using our Paint Brush Leads.

Niobium sample using Lace Tape #L2 (pg 14) and our Paint Brush Leads.

Niobium sample using PNP Blue Mask (pg 15) and our Paint Brush Leads.

Anodizer



Niobium sample using Lace Tape #S5 (pg 13) and our Paint Brush Leads.

TOLL FREE
800
876-3434

TSP-PF *Electrolyte*

No phosphates! Environmentally safe electrolyte. Works just like the tri-sodium phosphate we have recommended for years without the phosphate pollution. **1/2 cup per gallon distilled water.** The 16 oz. box makes four gallons of electrolyte. Low sudsing, clear, simply the right stuff.

$7.23 ea

Small Parts Anodizing Basket

This is how RMS does thousands of small parts. A perfect pairing with Magic Wand (pg8). Place the parts in the basket and stir with the Magic Wand as they come up to color.

$9.00 ea

Spark Guard Mesh

Protect your work from accidental shorts. Accidentally touching the cathode and anode can damage the work and maybe even the anodizer. Cut to fit and wrap around the inside of your bath. A little needle and thread and you can make your own small baskets for anodizing special projects. 8.25" x 11" , #14 mesh sheet.

$1.09 ea

Scotch-Brite Pads

Similar to the grocery store variety pot scrubbers, but loaded with sharp abrasives! Their soft, flexible action follows the contours of your work for an even scratch finish. Unlike sandpaper, these pads **do not** remove metal.

	$/pad
Ultra fine silicon carbide	**2.38**
Fine aluminum oxide	**2.40**
Coarse silicon carbide	**4.18**

Sample using MIghty Mask (pg 11) and Scotch Brite for contrasting finishes

Micro-Mesh Soft Touch Pads

Handy for doing small jobs and repair projects. Great for removing anodizing on raised surfaces. The foam core provides additional flexibility and conformity, while being easy to hold and operate. Silicon carbide crystals on a resilient layer over cloth back. 2" x 2" pads. Available in 100MX, 120MX, 150MX, 180MX, 240MX, 320MX, 360MX, & 400MX. ***Specify grit size***.

$1.47 ea

Soft Touch Kit, 1 of each of the 8 grits, save 10%! $10.61 ea

Supplies

FAX
928/634-6734

ANODIZE YOUR OWN NIOBIUM FINDINGS

TOLL FREE
800
876-3434

Anodizers' Tape

This is a special transparent, electrically resistive tape. It is the single most effective masking medium used today. If you anodize, you need this product on your workbench!
72 yard roll.

1/16" width $6.65
2" width $45.36
4" width $85.05

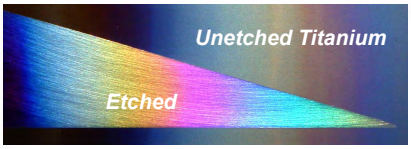
Platers' Tape

This is a highly effective opaque masking tape that can be used in most electroplating, anodizing (aluminum too) and etching processes. It is so resilient it makes a great sandblast mask. It stretches up to 225%. 36 yard roll.

2" width $77.13
4" width $135.77

Multi-Etch

An anodizing breakthrough! At last, a safer way to prepare titanium for high voltage anodizing. Cleans niobium & titanium and erases anodizing mistakes. It **etches copper, brass, pewter, steel** and will clean light fire scale from sterling. Multi-Etch is shipped dry in its own one gallon storage container. All you do is add distilled water. Works best in a heated acid resistant container(plastic in a double boiler) and requires positive ventilation and safety equipment. Can also be used at room temperature. See instructions for mixing requirements. Do not use or store in glass! Contains no hydrofluoric or nitric acids! Each unit makes 1 gallon of etch.



This titanium sample has been masked and partially treated with **Multi-Etch** & Scotch-Brite. It was all anodized at the same time. Demonstrating the brilliant colors of chemically cleaned titanium.

Foreign delivery is available using a Hazmat freight forwarder only. We cannot ship direct! Shipped domestically via UPS ground only.

Instructions & MSDS

Instructional Video-Click Here!

1-2 units	$54.78 ea
3 units	52.04 ea
4 units	50.95 ea
5 units	49.30 ea
6-9 units	48.21 ea

Bulk Pricing	
10-20 units	$46.00 ea
21-30 units	44.00 ea
31-50 units	42.00 ea
100+ units	40.00 ea

Supplies

PNP BLUE

Press-n-Peel

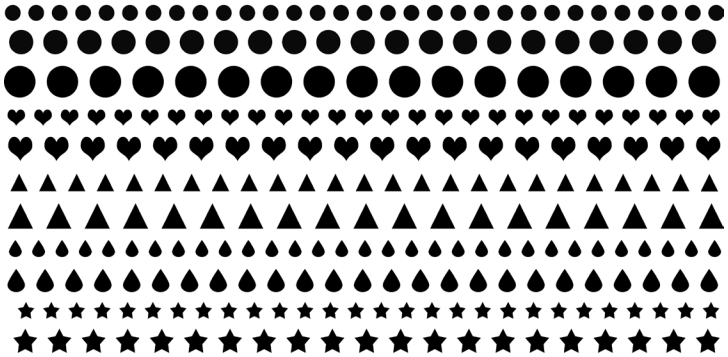
Create computer & laser graphics masks with iron on images.

FAX
928/634-6734

TOLL FREE
800
876-3434

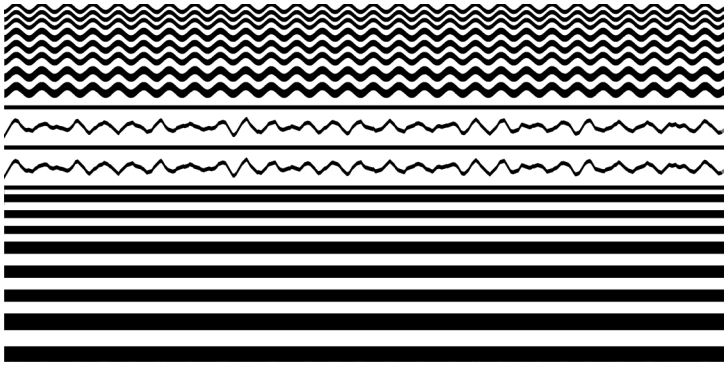
Mighty Mask *Now more detailed cuts!!*

Precision pre-cut design in high strength clear vinyl! Peel & stick masks for anodizing, acid etching and light sand/bead blasting. Solid sheets with both positive and negative images.



Basic Shapes $8.99
6" x 12" sheet

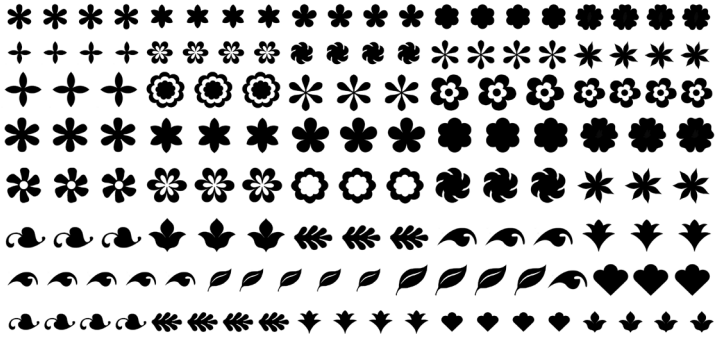
Assorted shapes in sizes from 1/4" to 1/2"



Lines & Waves $8.99
6" x 12" sheet

Assorted lines in sizes from 1/16" to 1/4"

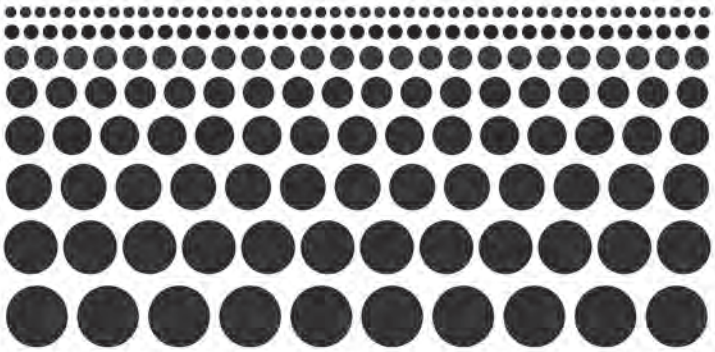
Use the positive and negative lines!



Flowers & Leaves $8.99
6" x 12" sheet

Assorted shapes in sizes from 3/8" to 5/8"

Use with Terrific Transfer Tape!



Circles $8.99
6" x 12" sheet

Assorted shapes in sizes from 3/16" to 1"

Plain Mighty Mask (uncut) $3.99
6" x 12" sheet
Use our Soft Touch Knife, craft punches or scissors to cut your own designs!

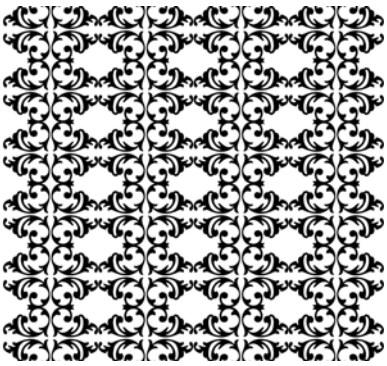
Supplies

TIP:
Remove the negative pieces of mask before using Terrific Transfer Tape. This is called "weeding".

FAX
928/634-6734

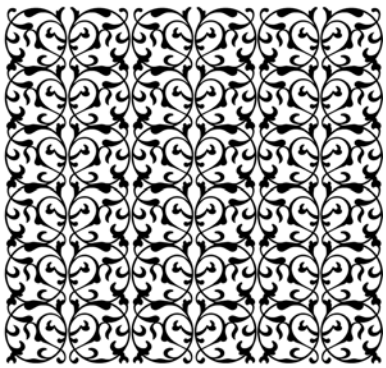
TOLL FREE
800
876-3434

Mighty Mask Continued



Lace #1 $5.99 6" x 6" sheet

Intricate Lace designs work best when used with Terrific Transfer Tape for flawless moving of your mask to your piece.



Lace #2 $5.99 6" x 6" sheet

Terrific Transfer Tape

Easy to use transfer tape is the "extra hand" when you are transferring intricate or multi part masks to your metal. Picks up all the pieces at once for precise application.

6" x 12" Sheet $1.49ea

Mighty Mask Kit

Includes all seven Mighty Masks and two transfer sheets. Discounted 10%!

$49.42

Brayer

A 4" hard rubber brayer that's perfect for laying down masks and transfer tape. A must have application tool. Also good for laying down Anodizers & Platers Tapes.

$9.87ea

Bone Folder

This high quality Bone Folder made of smooth polished plastic is ideal for burnishing the edges of masks and tape to prevent leaks. Make crisp folds in thin metals and foils.

$6.23ea

Soft Touch Knife

This uniquely designed art knife gives you great flexibility in cutting. Get right to the point and make small incisions or very long cuts. The cushioned RibGrip handle allows for longer, more comfortable cutting sessions. Cap included. Limited Lifetime Warranty.

$6.84ea
Blade 5 Pack $4.36ea

Mighty Mask Tool Kit

Includes Brayer, Bone folder and Soft Touch Knife. Discounted 10%.

$20.65

The Whole Shebang

Everything above, both Kits, all the masks, all the tools, all included in one giant kit!
Does not include replacement Blade 5 Pack.

$70.07

Supplies

TIP:
Remove the negative pieces of mask before using Terrific Transfer Tape. This is called "weeding".

TOLL FREE
800
876-3434

LACE TAPES

Introducing our newest masking Lace Tapes! Beautifully cut precision patterns on a roll make them a perfect choice for bracelets as well as pendants and earrings. Also great for beadblasting resists! Easily cut to length with scissors. Apply with our Brayer (pg 12) for best adhesion. Best results used outside the bath with our paintbrush leads.

Mini Rolls 10mm width x 6meter length **$6.50ea**

#M1

#M2

#M3

#M4

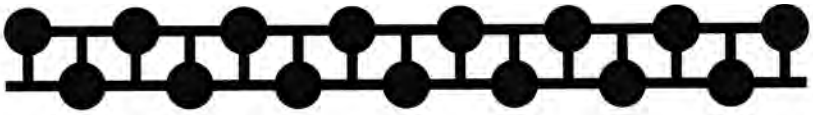
#M5

#M6

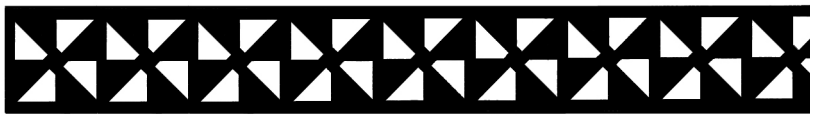
Sample with #M1 Lace Tape

Medium Rolls 15mm width x 10meter length **$7.75ea**

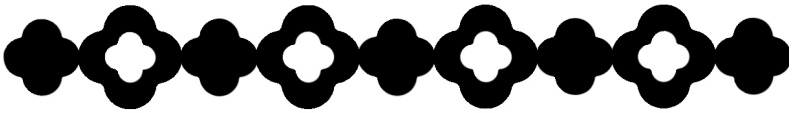
#S1



#S2



#S3



#S4

#S5

#S6

#S7

#S4 Lace Tape

TIP:

Pay special attention to edges when applying Lace Tapes...that's where leaks tend to occur. Use a bone folder (pg 12) to burnish.

TOLL FREE
800
876-3434

New!

LACE TAPES Cont

Grand Rolls 15mm width x 10meter length **$9.00ea**

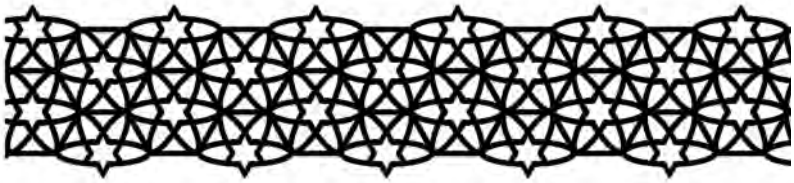
#B1

#B2

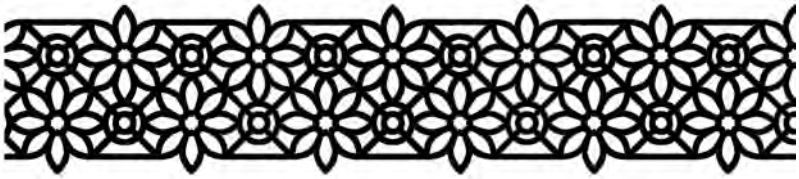
Wide Rolls 50mm width x 10meter length **$16.50ea**

****Note:** Wide Roll Lace Tapes work best on shiny surfaces

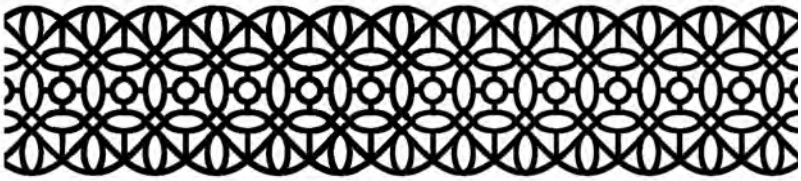
#L1



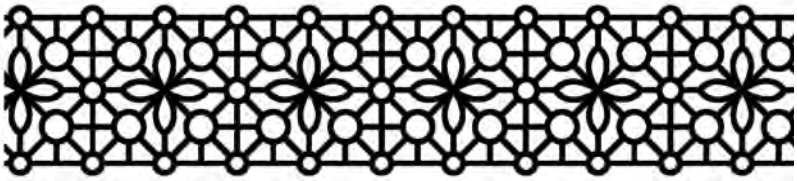
#L2



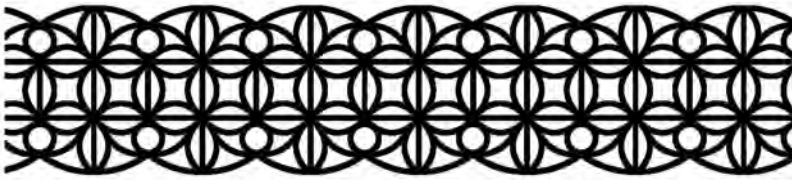
#L3



#L4



#L5



Sample made using #L4 Lace Tape Mask and Circles Mighty Mask

Beadblasted Niobium using #L1 and #M6 Lace Tapes as a resist

Supplies

TIP:
Pay special attention to edges when applying Lace Tapes...that's where leaks tend to occur. Use a bone folder (pg 12) to burnish.

TOLL FREE
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876-3434

PnP Blue Image Transfer

Make laser printer or photo copier masks for anodizing and acid etching in minutes. (Not ink or bubble jet). PnP Blue has a tough clear backing that is coated with a second blue layer of transfer media. When the image is transferred on to metal the blue transfers too. This adds an extra thick coating of protection. Great for anodizing. This is a great imaging material for non-ferrous metals. It works well in ferric chloride, ammonium persulfate and sodium persulfate. After use the resist is removed easily with lacquer thinner. 8.5" x 11" sheets

Instructions

5 Sheet Pack	**$8.08**
20 Sheet Pack	**$32.33**
100 Sheet Pack	**$142.65**

PnP Transfer Iron

The perfect iron for PnP Blue and other heat sealable films. A dedicated, adjustable iron designed for heat sealing. The small footprint allows for fast, controlled heat transfer. Complete with a teflon cover for non-stick performance and instructions for metal transfers. 1.5" x 4" base, 115V/60HZ

Iron w/teflon cover	**$156.00 ea**
Teflon covers	**$1.46 ea**

PnP Blue Transfer Iron Kit

Everything you need to get started and at a special discounted price. Includes: iron, 2 extra covers & 5 sheets of PnP Blue.

$158.66 ea

Notes about Reactive Metals Studio

As memory will have it I started teaching workshops in 1980. There has been so many that I have lost track of all the great places I have had the opportunity to share. So many, in fact, I rarely get to teach anymore. It seems that there are many schools and teachers that have taken on that roll. Alas, I do miss it some.

My workshops cover a pretty large area. I usually like an evening and then two full days. It all starts with a look at me, where I came from and how I got to here. I have a BA in theater from Michigan State University and up until the mid 70's worked in that field. In 1974 I became a self taught metalsmith making sterling pieces set with turquoise and coral. I left theater and took my work up to the University of Kansas where I intended to pick up my GI Bill and go back to school. Carlyle Smith and his staff took me in.

A good college has many distractions. My stay got extended. I slipped off and discovered the hot glass department. I got lost there for a couple of years. That ended when the department started getting antsy and thought I should come back to metals and finish my MFA.

About this time three things happened: James Brent Ward and Jim Hall both wrote papers on titanium and KU hosted a SNAG Conference where I saw titanium for the first time. I was hooked. I started nosing around for materials and help.

My first metal came out of an aircraft parts shop in Wichita, KS. These tiny scraps became my first heat colored pieces. As I got further into it I thought a more accessible guide was needed. I came to believe that this was an entirely new way for an artist to express themselves. It needed to be easy and available. The passion started then.

I have a little background in electronics (thanks to the Army) and with the help of George Brown in KU's Electrical Engineering we hooked the process up to some X/Y plotters… watched and learned. Shortly there after we had a nice bench top anodizer. What was needed next was the metals. If you wanted to build an F16 you could get titanium. If you wanted some 20ga wire or a small sheet to work, there was no chance. From that need came Reactive Metals Studio. We had a great little anodizer, wire and sheet milled to B&S gauges and supplied it by the foot and inch.

Starting with a SNAG mailing list (I think I stole it.) and a list of schools with metals programs, a total of some 450, I did our first postcard mailing.

There's more to this story but I have run out of space for now.

31 great years… thank you! Bill Seeley (2012)

VIEW
Bill Seeley's
Anodizing
Video!!
Click
HERE!!

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ANODIZERS TAPE

Fast effective high voltage masking

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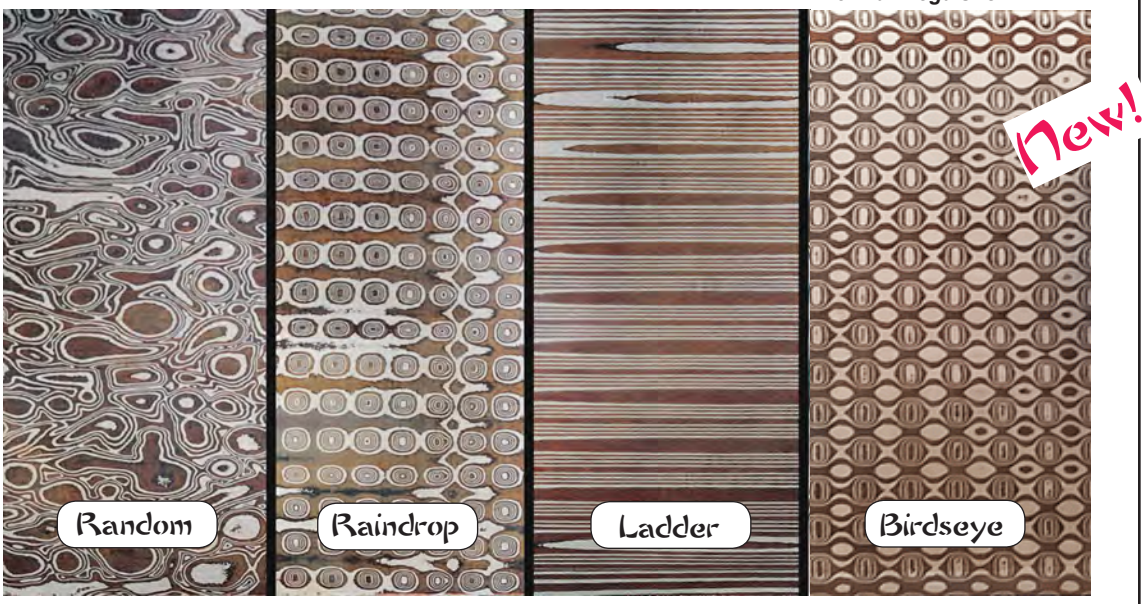
MOKUME-GANE

In Japanese, Mokume-gane means "wood grain metal". Alternating layers of metal are diffusion bonded into a single billet. Mokume-gane may be formed and fabricated just like other nonferrous metals, with slightly more frequent anneals. Easy and medium solders are recommended. A light etch followed by **Baldwin's Patina** to enrich the color contrasts enhances the patterns. Prices are approximate.

Sterling Silver/Copper Mokume-gane

Three classic patterns each individually rolled and hand worked. No two are ever exactly alike! Raindrop and Random patterns are twenty-one layers with heavy sterling silver backs. The Ladder & Birdseye patterns are twenty-seven layers and the pattern shows on both sides. Melting pt 1439°F. Minimum 1 x 1 inch. Maximum 3 x 12 inches. Full inch increments only. **Call for today's quote.**

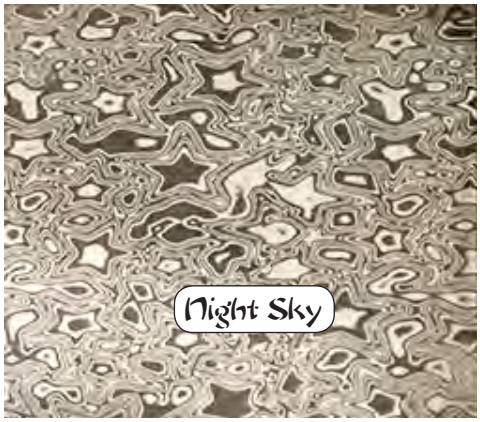
3" Tall 18ga shown

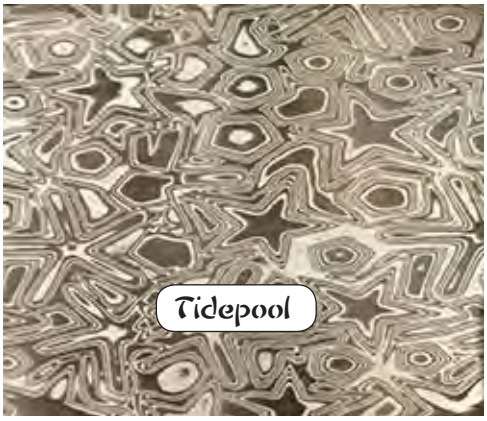


	Random, Raindrop & Ladder		Birdseye	
Approx. price per sq in…	**18 ga (.040"/1.01mm)**	**$21.21***	**18 ga**	**$26.12***
	24 ga (.020"/0.51mm)	**$13.91***	**22 ga**	**$20.21***

Learn more, click on the DATA SHEETS! ➤ DATA SHEET

3" Tall 18ga shown





Approx. price per sq in....	**18 ga (.040"/1.01mm)**	**$21.21***
	20 ga (.032"/0.81mm)	**$18.29***

Patina Preparation

Consistent patinas are all about preparation. Metals need to be really clean and oxide free. **No Name Patina Prep** is perfect for this. After a short cleaning under warm water, the water should sheet across the surface. Keep it wet and warm, then shake off the excess water and liberally swish the patina solution over it. Rinse in warm water and repeat until the color is right. Never allow solutions to stagnate or dry. Mottled colors are most probably due to oxides and fire scale… clean it again.

***Prices shown based on $15 Silver and $1200 Gold.**

Shining Wave Metals

MOKUME-GANE

Banha Sheet

All new three color pattern. Banha(Night wave) is a tight 21 layer wave pattern of alternating sterling silver, copper and 5% shibuichi with a heavy sterling back. Shown here with a traditional Rokusho patina. Melting pt 1439°F. Minimum 1 x 1 inch. Maximum 3 x 12 inches. Full inch increments only. **Call for today's quote.**

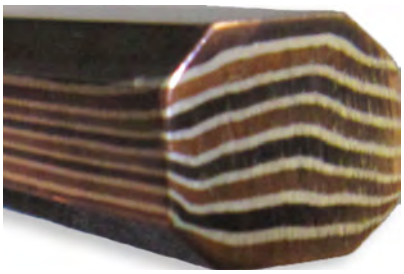
Approx. price per sq in....

DATA SHEET

18 ga (.040"/1.01mm) $23.73*
24 ga (.020"/0.51mm) $15.43*

3" Wide 18ga shown

Banha Forging Rod 8mm



Fifteen alternating layers of Sterling(7), Copper (4) and 5% Shibuichi(4). This piece has been patinaed using Baldwin's Patina. Copper & Shibuichi layers are twice as thick as the Sterling layers.
Minimum 1 linear inch, additional in 1/4 inch increments.
Instructions included with every order.

Approx. price per in…

DATA SHEET

8mm $39.64*
Call for today's quote.

Haida

Thirty-one alternating layers of Sterling, Copper, 15% Shibuichi and 5% Shibuichi with no backing (double sided pattern). This piece has been patinaed using Baldwin's Patina. Copper & Shibuichi layers are 2.5x as thick as the Sterling layers.
Minimum 1"x1", Maximum 3" x 12". Full inch increments only. Instructions included with every order. **Call for today's quote.**

Approx. price per sq in…

DATA SHEET

18 ga (.040"/1.01mm) $29.78*
24 ga (.020"/0.51mm) $19.84*

3" Wide 18ga shown

Sterling Silver/Copper/Shibuichi/Shakudo Mokume-gane

Five color alternating layers on a heavy sterling silver back. Patina with **Baldwin's Patina** (page 21) and get white(sterling), brown(copper), grey(shibuichi) and black(shakudo). Melting pt 1439°F. Minimum 1 x 1 inch. Maximum 3 x 12 inches. Full inch increments only. **Call for today's quote.**

DATA SHEET

3" Wide 24ga shown

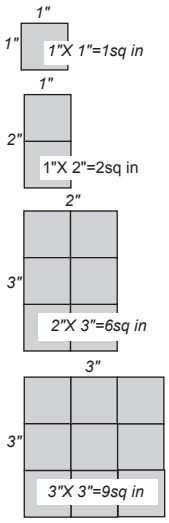
Approx. price per sq in.... **18 ga (.040"/1.01mm) $33.40***
24 ga (.020"/0.51mm) $20.55*

***Prices shown based on $15 Silver and $1200 Gold.**

ROKUSHO

The traditional patina of Japan. This is the real stuff imported & available for the first time in the west.

DOES IT MEASURE UP?



COPPER ALLERGIES

Copper and copper based alloys may cause allergic reactions when in contact with skin. Copper etching can occur.

DATA SHEET

DATA SHEET

Precious Mokume-gane

Two sophisticated classics in the new Samidare(Early spring rain) pattern. Denser and double struck. Twenty-seven(27) layers of alternating gold(42%) and sterling(58%) ending with a sterling back. The silver is twice as thick as the gold. Minimum 0.5 x 3 inch. **Call for today's quote.**

14K Pd White Gold/Sterling Silver Samidare
Approx. price per sq in.....18 ga (.040"/1.01mm) $365.00

18K Rose, Yellow, Pd White Gold/Sterling Silver Samidare
Approx. price per sq in.....18 ga (.040"/1.01mm) $378.00

Crinkle Bi-Metal

Samples of the many possible textures.

Just heat to reticulate! No surface preparation! No pickling! A fine grained wrinkle texture appears almost instantly. The sheet stays flat for easy fabrication. Reticulate after forming or actually stir up the surface! Fuse metal into it as you go. 80/20 reticulation alloy (1/8 by thickness) welded to a heavy fine silver back. Hallmark as sterling. Please order in one inch increments. Minimum 1 x 1 inch. Maximum 3 x 12 inches.
Call for today's quote.
Approx. price per sq in.....
18 ga (.040"/1.01mm) $30.00
24 ga (.020"/0.51mm) $14.00

DATA SHEET

Flat Mokume-Gane

There is no visible pattern on this multilayered laminated sheet (21-Stg/Cu, 21-Cu/Brs, Banha Flat:15-Stg/Cu/5%Shibuichi). Your patterns are produced by carving, bumping, filing and rerolling. This exposes the thin layers within the laminate as alternating concentric light and dark patterns. Melting pt 1435°F. Minimum 1 x 1 inch. Maximum 3 x 12 inches.

Copper/Brass Shown

Teachers! Plan ahead! Order ahead!

Call for today's quote.

	Stg/Cu $/sq in	Cu/Bras $/sq in	Banha $/sq in
14 ga	$12.71*	$3.97	$20.66
1/8 in	$24.82*	$7.76	$40.36
1/4 in	—	$15.53	

New!

DATA SHEET

***Prices shown based on $15 Silver and $1200 Gold.**

Shining Wave Metals

TOLL FREE
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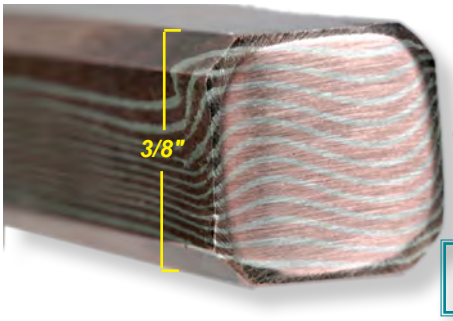
876-3434

Straight Grain Forging Rod

These classic stacks have been chosen for their excellent contrast. These are very strong bonds and can be twisted, forged and carved to form intricate patterns. Special edition 21 layer rod. Minimum 1 linear inch, additional in 1/4 inch increments. Instructions included with every order.



Sterling Silver/Copper

Approx. price per in... 8mm $29.29*

New! **Sterling Silver/5% Shibuichi (15 layer)**

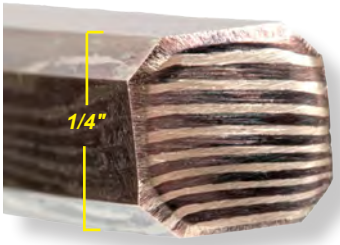
Approx. price per in... 8mm $42.50*

Copper/Brass

Approx. price per in... 1/4 in(6.35mm) $5.82

DATA SHEET

18K Rose Gold/Shakudo Rod - 1/4'(6.35mm)



Nineteen alternating layers of 18K Rose Gold(9) and 4% Shakudo(10). Here the Shakudo has been high lighted with Baldwin's Patina. Patterns may be developed by twisting, forging and stock removal. Minimum 1 linear inch, additional in 1/4 inch increments. Instruction included with every order.

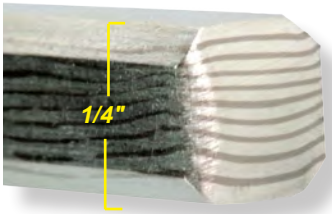
DATA SHEET

Approx. price per in…

1/4 in(6.35mm) $431.00

Call for today's quote.

14K Palladium White Gold/Sterling Silver - 1/4"(6.35mm)



Nineteen alternating layers of 14K Palladium White Gold(9) and Sterling Silver(10). The two outside layers are Sterling. TheSterling layers are approximately twice as thick as the gold. Minimum 1 linear inch, additional in 1/4 inch increments. Instructions included with every order.

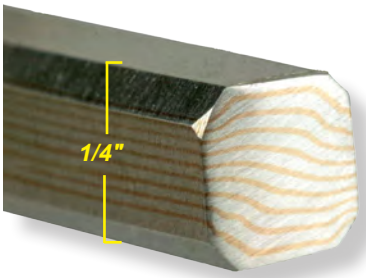
Approx. price per in…

1/4 in(6.35mm) $450.00

DATA SHEET

Call for todays quote.

22K Gold/Sterling Silver - 1/4"(6.35mm) & 1/8"(3.18mm)



Nineteen alternating layers of 22K Rose Gold(9) and Sterling Silver(10). The two outside layers are Sterling. The Sterling layers are approximately twice as thick as the gold. Minimum 1 linear inch, additional in 1/4 inch increments. Instructions included with every order.

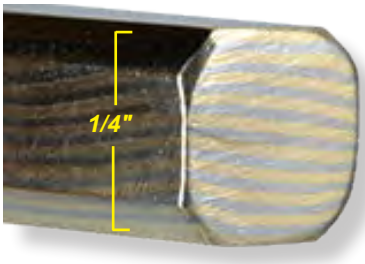
Approx. price per in…

1/4 in(6.35mm) $557.00

Call for today's quote.

DATA SHEET

18K Yellow Gold/Palladium 950 - 1/4"(6.35mm)



Nineteen alternating layers of 18K Yellow Gold(10) and Palladium(9). The outside layers are Yellow Gold. It is approximately 35% Palladium and 65% 18K Gold. Minimum 1 linear inch, additional in 1/4 inch increments. Instructions included with every order.

DISCONTINUED

DATA SHEET

Approx. price per in…

1/4 in(6.35mm) $1143.00

Call for today's quote.

*Prices shown based on $15 Silver and $1200 Gold.

TWIST PATTERN GUIDE

A guide to forming twist patterns specifically on rods. Learn the do's and don'ts!

GUIDE TO MOKUMÉ PATTERNS

A short step by step universal guide with Phillip Baldwin. The four basic patterning techniques in pictures and story.

BALDWIN'S PATINA

Produces a deep blue-black on Shakudo and a warm antique brown on copper. It has no effect on gold or silver alloys.

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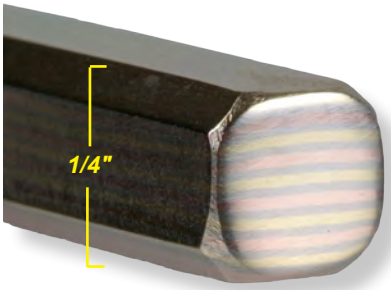
MOKUME-GANE & BI-METAL

18K Palladium White, 18K Rose & 18K Yellow Gold - 1/4"(6.35mm)



Seventeen alternating layers of 18K solid gold: 9 Pd White, 4 Rose, 4 Yellow. The Pd White Gold layers are 1/2 the thickness of the other two. Minimum 1 linear inch, additional in 1/4 inch increments. Instructions included with every order.

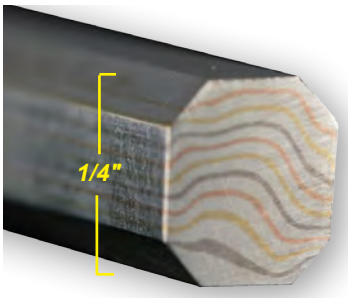
Approx. price per in…

DATA SHEET

1/4 in(6.35mm)	**$1270.00**

Call for today's quote.

18K Palladium White, 18K Rose, 18K Yellow & Sterling - 1/4"(6.35mm)



Nineteen alternating layers of 18K solid gold: 3 Pd White, 3 Rose, 3 Yellow with sterling in between each layer. The silver layers are twice as thick as the gold. Minimum 1 linear inch, additional in 1/4 inch increments. Instructions included with every order.

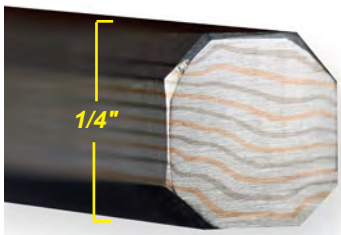
Approx. price per in…

DATA SHEET

1/4 in(6.35mm)	**$453.00**

Call for today's quote.

14K Rose Gold, 14K Palladium White Gold, & Sterling - 1/4"(6.35mm)



Seventeen alternating layers of 14K Rose Gold (4), 14k Pd White(4) and Sterling (9). The silver layers are twice as thick as the gold. Minimum 1 linear inch, additional in 1/4 inch increments. Instructions included with every order.

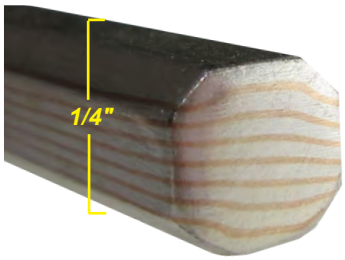
Approx. price per in…

DATA SHEET

1/4 in(6.35mm)	**$374.00**

Call for today's quote.

14K Red Gold & Sterling - 1/4"(6.35mm)



Fifteen alternating layers of 14K Red Gold (7) and Sterling (8). The silver layers are twice as thick as the gold. Minimum 1 linear inch, additional in 1/4 inch increments. Instructions included with every order.

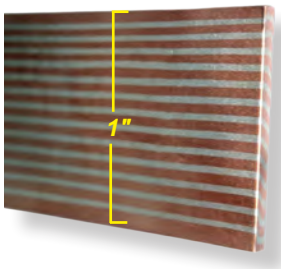
Approx. price per in…

DATA SHEET

1/4 in(6.35mm)	**$296.00**

Call for today's quote.

Sterling Silver/Copper Straight Grain



This is a continuous pattern of 27 alternating stripes parallel to the edge. The pattern goes all the way through and shows on both sides. This is a very strong bond. Melting pt 1439°F. Annealed. Minimum 1 x 1 inch.

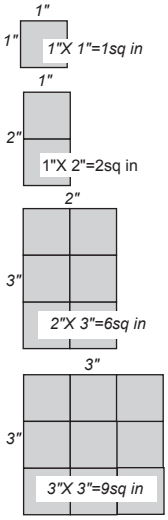
DATA SHEET

Strip-1" inch x Length	$/in
18 ga (.040"/1.01mm)	12.31*
24 ga (.020"/0.51mm)	6.15*

Call for today's quote.

***Prices shown based on $15 Silver and $1200 Gold.**

DOES IT MEASURE UP?



TWIST PATTERN GUIDE

A guide to forming twist patterns specifically on rods. Learn the do's and don'ts!

GUIDE TO MOKUMÉ PATTERNS

A short step by step universal guide with Phillip Baldwin. The four basic patterning techniques in pictures and story.

BI-METALS

Pictured here is a micrograph of 18ga Copper/Sterling Silver Bi-Metal showing the relationship between the two layers. The top layer is 1/12 the thickness. Much heavier than plated at between 2 & 120 millionths of an inch. The sterling provides strength and precious metal contact for skin. **The top decorative layer is diffusion bonded & hammer forged to the sterling back. Forged as in true Mokumé-gane, not just hot pressed.** All Bi-Metals may be formed and soldered with traditional tools and techniques.

DATA SHEET

Shakudo/Sterling Silver Bi-Metal

Baldwin's Patina oxidizes only the shakudo for the highest color contrast possible: deep purple/black against silver! Fold, engrave or carve to reveal these contrasting surfaces (1/8 4%shakudo by thickness). Melting point 1432°F. Please order in one inch increments. Minimum 1 x 1 inch. Maximum 3 x 12 inches.

Approx. price per in…….	**18 ga (.040"/1.01mm)**	**$22.16***
	24 ga (.020"/0.51mm)	**$11.08***

Copper/Sterling Silver Bi-Metal

Baldwin's Patina oxidizes only the copper for strong color contrasts. Fold, engrave, etch and carve to reveal these contrasting surfaces(1/12 copper by thickness). Melting point 1432°F. Please order in one inch increments. Minimum 1 x 1 inch. Maximum 3 x 12 inches.

Approx. price per in…….	**18 ga (.040"/1.01mm)**	**$15.06***
	24 ga (.020"/0.51mm)	**$7.53***

22K Gold/Sterling Silver Bi-Metal

A heavy ($^1/_8$ by weight, $^1/_{12}$ by thickness) 22 karat gold is diffusion welded to a base of solid sterling silver. It is bonded using traditional mokumé-gane techniques. You get a rich 22K gold look at a fraction of the cost of solid 22K. Please order in one inch increments.
Minimum 1 x 1 inch. Maximum 3 x 12 inches. Please call for price quote.

Approx. price per sq in.....	**18 ga (.040"/1.01mm)**	**$114.00**
	24 ga (.020"/0.51mm)	**$54.00**

ALLOYS

Classic Shakudo

This is the traditional Japanese Shakudo. The alloy contains 4% fine gold in a copper base. It is hand poured and rolled from scratch in the Shining Wave Studio. This alloy works and anneals like copper for most forming operations. It patinas to deep purple-black with **Baldwin's Patina**. Shakudo fire scales quite easily (see Multi-Etch p10). Minimum 1 x 1 inch. Maximum 3 x 12 inches.
Call for today's quote.
Approx. price…

	Sheet	$/sq in
Price per sq in....	**18 ga (.040"/1.01mm)**	**$39.35***
	24 ga (.020"/0.51mm)	**$19.67***

DATA SHEET

	Rod	$/in
	1/4" per linear in	**$61.48***

Shibuichi

A traditional copper alloy with either 5%, 15% or 25% fine silver. Naturally light orange in color and workable, it is all about patinas. Shipped half-hard. Minimum 1 x 1 inch. Maximum 3 x 12 inches.
Call for today's quote.

	Baldwin's Patina	Rokusho
5% Softest…	chocolate brown	lite chocolate to olive
15% Harder…	olive	grey to green
25% Hardest …	buff	grey to brown

DATA SHEET

		$/sq in		
		5%	**15%**	**25%**
Approx. price per in…....	**18 ga (.040"/1.01mm)**	**$6.42***	**$7.92***	**$9.75***
	24 ga (.020"/0.51mm)	**3.21***	**3.96***	**4.87***

***Prices shown based on $15 Silver and $1200 Gold.**

SOLDERING
The recommended solders for all laminates are Easy and Medium.

FIRE SCALE!
Shakudo has a strong tendency to firescale. Blotchy patination is usually caused by firescale.

GUIDE TO MOKUMÉ PATTERNS
A short step by step universal guide with Phillip Baldwin. The four basic patterning techniques in pictures and story.

COPPER ALLERGIES
Copper and copper based alloys may cause allergic reactions when in contact with skin. Copper etching can occur.

HEAT COLOR SHIBUICHI
Click on the Shibuichi data sheet for instructions.

TOLL FREE
800
876-3434

Instructions

Rokusho

The traditional basis for many Japanese patinas. We are importing this from the only maker in Japan. The rich hues seen on historic Japanese pieces are now available in the west for the first time. Instruction by Phil Baldwin included with order. (See Cupric sulfate below.)

50 gram $25.75 100 gram $49.79

Cupric Sulfate

This chemical is a component of many patina formulas. It is added to Rokusho and improves it's coloring capabilities. ***Foreign Delivery not available.*** Shipped via UPS ground only.

50 gram $3.37 100 gram $5.03

No Name Patina Prep

This is a special "soft abrasive" powder with a tiny acid component that cleans and deoxidizes metals. It is the perfect pre-patina cleaner. Get smooth, even coloring every time. It is especially effective for preparing copper for enameling and can replace acid solutions. What makes this special is a rounded abrasive. It will actually bring metal up to a soft shine. It takes only gentle pressure to strip nonferrous metals of all contaminants.

5 oz shaker bottle $4.79 ea

Instructions

GUIDE TO MOKUMÉ PATTERNS
A short step by step universal guide with Phillip Baldwin. The four basic patterning techniques in pictures and story.

Instructions

Baldwin's Patina

Specially formulated oxidizer for Shining Wave metals. Copper turns a rich brown, shakudo patinas a classic purple-black and shibuichi will turn gray to olive green. A very small amount goes a long way. *Best of all it does not color silver, gold or nickel alloys.* Instructions included. Always test patinas on like scrap.
Foreign Delivery not available. Shipped via UPS ground only.

1 oz squeeze bottle $4.00 ea 4 oz squeeze bottlle $10.75 ea

Renaissance Wax

Imported from England the finest wax product for sealing patinas. Originally formulated in the British Museum research laboratories in the early 1950's. The blend which emerged from the research was 'designed' for long term protection of all classes of museum exhibits. From furniture to leather the list of uses seems endless. Apply in thin layers and repeat. A little goes a very, very long way.

2.25oz $17.99 ea

E6000 Adhesive

A clear viscous polystyrene formula that creates a chemical bond to either porous or non-porous, and even rough surfaces. It remains flexible and is ideally suited for findings. Snip tip dispenses just the right amount. Very long shelf life.
Foreign Delivery not available. Shipped via UPS ground only.

3.7 oz tube w/2.5" Snip tip $7.52 ea
Extra Snip tip .50 ea

TOLL FREE
800
876-3434

IMPRESSIONS

Cast sterling silver, shibuichi or bronze textured panels from *Thin-Cast*. These highly detailed three dimensional panels are approximately 20ga(.032/0.81mm) in thickness (depending on design). The Bone Yard panel is very thick and dimensional at 1.5 oz. The patterns are taken from nature and appear on one side. Pre-finished and ready for use.

Chill (1 1/16"X 2")
Sterling $26.84
Shibuichi $15.83
Bronze $11.83

Lunar(1 3/32"X 2")
Sterling $26.84
Shibuichi $15.83
Bronze $11.83

Lizard(1 1/16"X 2")
Sterling $26.84
Shibuichi $15.83
Bronze $11.83

Leaf(1 5/16"X 2 1/16")
Sterling $29.61
Shibuichi $17.75
Bronze $13.44

Lichen(1 3/16"X 2 3/8")
Sterling $41.73
Shibuichi $23.95
Bronze $17.49

Desert Bark(1 5/16"X 2 5/16")
Sterling $38.22
Shibuichi $22.64
Bronze $16.97

Urchin(1 7/16"X 2 1/2")
Sterling $41.86
Shibuichi $24.08
Bronze $17.61

Melon(1-11/32"X 2 5/8")
Sterling $39.07
Shibuichi $22.99
Bronze $17.14

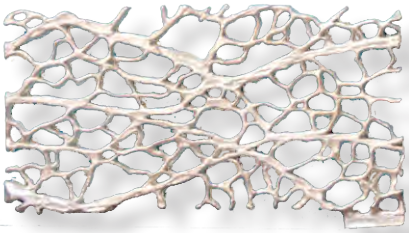
Open Melon(1-11/32"X 2 5/8")
Sterling $39.07
Shibuichi $22.99
Bronze $17.14

Canyon Wall(1 1/4" X 2 5/8")
Sterling $47.00
Shibuichi $24.98
Bronze $16.97

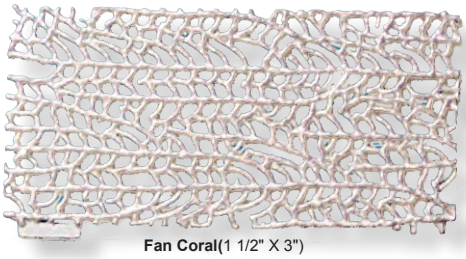
Fir(1 1/2" X 2 1/2")
Sterling $39.55
Shibuichi $23.46
Bronze $17.61

Bone Yard(1 11/16" X 2 7/16")
Sterling $94.50
Shibuichi $53.84
Bronze $39.06

End Cut(1 1/2" X 2 3/4")
Sterling $107.30
Shibuichi $59.89
Bronze $42.64



Cactus Core(1 3/8" X 2 11/16")
Sterling $48.65
Shibuichi $25.79
Bronze $17.47



Fan Coral(1 1/2" X 3")
Sterling $40.91
Shibuichi $23.97
Bronze $17.81

Prices may vary with the market.

Thin-Cast

CUSTOM CAST
Impression Panels in 14K, 18K & silicon bronze can be special ordered. Call for a custom quote.

FAX
928/634-6734

SHIBUICHI
is an ancient Japanese alloy of 80% copper and 20% fine silver.

TOLL FREE
800
876-3434

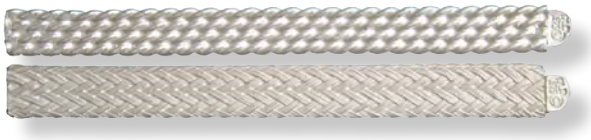
CHOLLA
Pronounce it choy-yah!

Cholla (19/64"ID X 3 5/8")
Sterling $76.71
Shibuichi $40.29
Bronze $27.05

Small Cholla (1/4"ID X 2")
Sterling $21.88
Shibuichi $15.85
Bronze $13.10

Ring Shanks

Sterling silver shanks are fully patterned on both sides. Very ductile and easily formed. 0.25 inches wide x 2.80 inches.



	Each	+10
Twist	$13.40	$12.06
Braid		

Bumps

Sterling silver Impressions slightly domed Ovals. 0.68 inches wide x .96 inches.

Lizard Melon Desert Bark

$9.77 ea

Leaves

Perfectly cast from life. Amazingly detailed on both sides. Design your fall collection around these flawless leaves. Very thin, around .030"(.80mm), easy to pierce, form and customize. From simple earrings and necklaces to appliques on holloware. Heat color in shibuichi for all the fall colors.

Fig Leaf Collection

Back Side Close Up

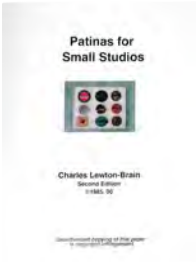
Cottonwood(2 1/4" X 1 3/4")
Sterling $22.46
Shibuichi $14.66
Bronze $11.83

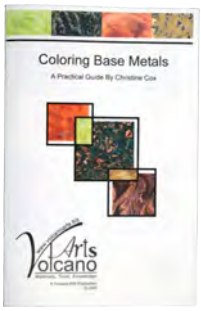
Back Side Close Up

Large(2" 1/8 X 1 7/16")
Sterling $18.86
Shibuichi $13.36
Bronze $11.35

Medium(1 5/8" X 1")
Sterling $8.78
Shibuichi $6.47
Bronze $5.39

Small(1 9/32" X 3/4")
Sterling $7.50
Shibuichi $5.39
Bronze $4.62





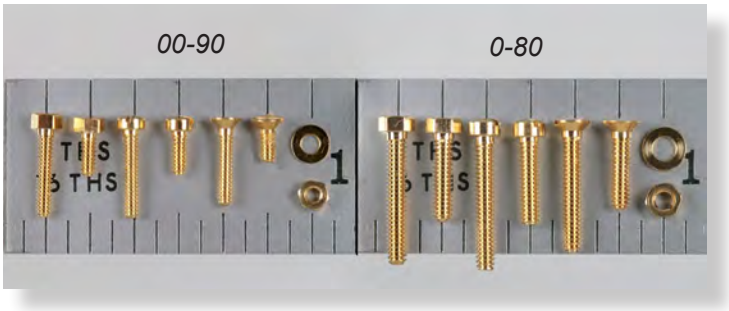
FAX
928/634-6734

TOLL FREE
800
876-3434

MINIATURE NUTS & BOLTS

Our miniature nut and bolt line includes both 00-90 and 0-80 parts. Both sizes are precision machined not rolled. Available in solid brass or with our exclusive plating in fine silver, 22K gold or heavy black oxide. We recommend our Socket Wrenchs to ease installation. See the matching Drill Bits, Taps, & Dies on Page 26. **Each unit comes complete with bolt, nut and washer.**

Specify size, head type, length and color when ordering.



22K Gold Plate shown

	each	10	100	1,000
1/8" x 00-90(Includes nut & washer)				
Brass	$ .56	$5.16	$47.30	$408.50
Fine Silver plated	.64	5.88	53.90	465.50
Black oxide	.75	6.96	63.80	551.00
22K Gold plated	.72	6.60	60.50	522.50
1/4" x 00-90 or 0-80(Includes nut & washer)				
Brass	.61	5.60	51.30	443.08
Fine Silver plated	.68	6.32	57.90	500.08
Black oxide	.80	7.40	67.80	585.58
22K Gold plated	.76	7.04	64.50	557.08
3/8" x 0-80(Includes nut & washer)				
Brass (00-90 also avail.)	.67	6.20	56.87	491.15
Fine Silver plated	.75	6.92	63.47	548.15
Black oxide	.87	8.00	73.37	633.65
22K Gold plated	.83	7.64	70.07	605.15
***Extra* Nuts & Washers 00-90 or 0-80**				
Brass washers	.16	1.45	13.31	114.95
Brass hex nuts	.19	1.72	15.73	135.85
Fine Silver plated washers	.18	1.69	15.51	133.95
Fine silver plated hex nuts	.21	1.96	17.93	154.85
Black oxide washers	.22	2.05	18.81	162.45
Black oxide hex nuts	.25	2.32	21.23	183.35
22K Gold plated washers	.21	1.93	17.71	152.95
22K Gold plated hex nuts	.24	2.20	20.13	173.85

00-90 or 0-80 Threaded Rods

We carry these rods to add versatility to projects using nuts and bolts. Perfectly machined, not rolled. 12 inch lengths only.

Brass	**$31.50 ea**
303 Stainless steel	**68.00 ea**

00-90 or 0-80 EZ Socket Wrench

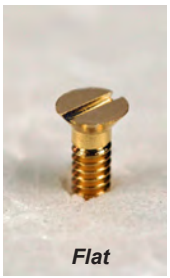
Aluminum socket wrenches are a necessity when using hex nuts. Pliers will surely slip and scratch your work. Hex head bolts with hex nuts require two, one for the head and one for the nut.

$6.70 ea

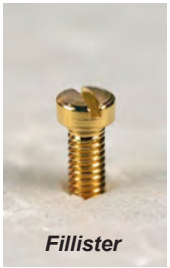
Hardware

800 876-3434

Hex



Flat



Fillister

NUTS & BOLTS Con't

Mixed Nut & Bolt Kits, 0-80

The kit contains twelve of each hex bolts in brass, fine silver and black plate with matching washers and nuts. 110 total pieces plus 2 E-Z Socket Wrenches! See pg 25.

1/4 in. x 0-80 kit	**$35.09**
3/8 in. x 0-80 kit	**$37.06**

MINIATURE TAPS & DIES

Miniature Taps & Dies

Now, thread and tap your own parts. **Three flute plug taps** thread the inside of a hole; **dies** cut threads on wire to make screws. Check the chart on page 46 for the proper size. For the best results use the EZ Tap and Die Holder below and Anchor Lube(pg 29). Carbon steel. ***For hand use only!***

Taps…1-72 & 2-56 $3.60 ea (see below for 00-90 & 0-80)
Dies…00-90, 0-80, 1-72 or 2-56 $35.00 ea

Machine/Hand Taps

High Speed Steel plug taps can be used for hand use with our Tap Handle (**not** EZ Tap & Die) or for machine tapping. .107" square base.

00-90 Tap $13.90 **0-80 Tap $3.60**

EZ Tap & Die Holder

All aluminum construction with a knurled, sure grip handle and plastic storage case. Complete with allen wrench and bushings to fit the 1-72 & 2-56 taps and all dies.

Instructions **$21.90**

Tap Handle

Wood handle with 2 chucks. Adjustable opening from 0 -1.29". Perfect handle to use with all of our taps or as a pin vise. Overall length 3.25"

$13.90

Drill Bits

Drills cut exactly right to match our taps. High speed steel is recommended for titanium, niobium and general drilling. Cobalt, a harder steel, is recommended for hard materials like stainless steel and for long life. **A clearance drill produces a hole that a bolt passes through without touching. A tap drill leaves the material needed to cut threads in a hole.** **Check the chart page 46 for the proper sizes**. ***Purchase any ten and save 10%!***

Size	High Speed Steel	Cobalt
#43, 48, 50, 52, 53	$.64 ea	$2.68 ea
#54	–	2.88 ea
#55	.64 ea	2.88 ea
#62	.64 ea	3.22 ea

Hardware

DIE & WIRE Sizes

00-90-	*.047" 17-18ga*
0-80-	*.060" 14-15ga*
1-72- 1-64-	*.073" 13ga*
2-56-	*.085" 11-12ga*

TOLL FREE
800 876-3434

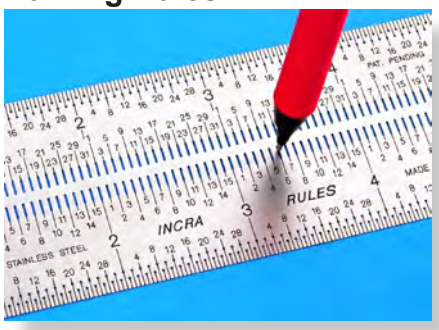
RULERS & PROTRACTORS

Precision Measuring

INCRA scores again with its precision steel rules ... Select the proper slot or hole, insert a .5mm mechanical pencil or .25mm permanent pen, and mark the measurement with dead-on accuracy.

Micro-fine guide holes and slots at every 1/16", 1/32" and 1/64" scale position instantly locate your sharp pencil or scribe at the exact measurement with zero uncertainty and no eye strain! The Professional T-Rules even offer marking holes every 1/100". This is unmatched in the industry.

Marking Rules



A regular Marking Rule. This rule offers Incra's patented marking holes at every 1/16 and 1/32 inch from 0 to 6 inches. Also available in 150mm metric length with marking holes every .25mm.

	Each
6" Imperial	$14.95
150mm Metric	$15.95

T-Rules

T-bar is easily adjusted for making fast vertical measurements, perpendicular lines and perfectly placed horizontal lines. Available in 6" length with marking holes at every 1/16th, 32nd, and 64th inch, 150mm length with marking holes at every full, 1/4, 1/2 and 3/4mm or the Professional Combo T-Rule which combines both imperial and metric marking holes up to 100th of an inch and .5mm. The end features 3 vertical inches of marking holes at every 32nd. You will never be without the correct measurement with these beauties.

	Each
6" Imperial	$23.95
150mm Metric	$23.95
Pro Combo(Imperial/Metric)	$29.95

Protractors

Incra reinvented the protractor by putting extra long guide slots at every 45°, 30°, 22.5°, 5°, 1° and 0.5° interval to plot any angle with ease and absolute accuracy. If you take a few seconds to remove the T-bar you will also have an excellent 6" rule with micro-fine marking holes at every 1/32". Also available in 160mm metric length. Includes a .5mm mechanical pencil.

	Each
6" Imperial	$35.95
160mm Metric	$35.95

View a Video demo!

Microperm Marking Pen

An ultrafine line, waterproof, permanent ink pen. The .25mm tip fits the holes in the Incra rulers perfectly. Marks on metal, glass, plastic, wood and cellophane. Remove marks with alcohol based cleaner.

$2.91

Hardware

TOLL FREE
800
876-3434

All Nylon Forming Pliers

Non marring nylon jaw pliers are a must for manipulating wire, especially colored wire. These sturdy, lightweight (only 1 ounce!), all nylon/glass fiber pliers will fit the bill nicely. Three different styles available.

	Each
Flat Nose	13.62
Chain Nose	13.62

Nylon Forming Pliers

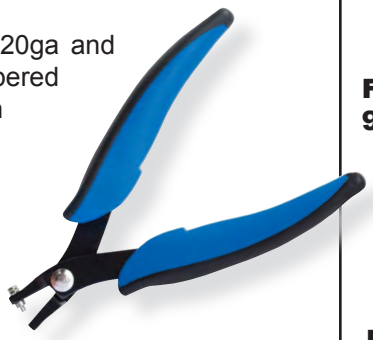
Non marring nylon jaw pliers are a must for manipulating wire, especially colored wire. Not just any nylon jaw will do and ours is a high quality nylon which will not damage delicate wire. Stainless, box-jointed with comfort grips. Available in three styles, two with springs.

	Each
Round on Round	$9.95
Round on Flat	$9.95
Flat on Flat	19.95

Replacement Jaws	Pair
Round on Round	$1.50
Round on Flat	1.50
Flat on Flat	4.15

Metal Hole Punch Pliers

Our newly designed hole punch pliers will punch niobium, titanium to 20ga and copper or silver as thick as 18 gauge. With ergonomic handles and tempered replaceable pin, these pliers will save you time and money. 1.25mm pin diameter. The pliers are made of thick carbon steel and come with an extra replaceable pin. Additional pins available in packs of five. Length 5.25" (135mm).

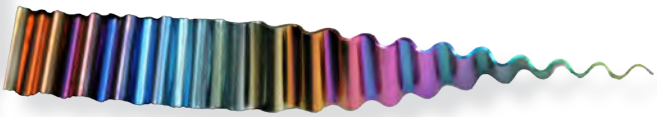


	Each
Hole Punch Plier 1.25mm	$14.95
1.25mm Pin Kit (5 piece)	6.95

Wrinkler

You will love the Tube Ringer® - with little effort it will put a beautiful corrugated pattern on metal sheet up to 24 gauge and wire up to 20ga. The 3" rollers will handle sheet stock up to 2.5" wide and leave the metal nice and smooth. Enhance your artistic efforts with this easy to use economical tool. Light duty, not for cross rolling. Not for titanium. Made in the USA.

The Wrinkler	$29.95



Hardware

FAX
928/634-6734

NIOBIUM FINDINGS

TOLL FREE
800
876-3434

Surface Saver Tape

Protect your delicate surfaces when further processing is required such as sanding, forming, drilling, bead blasting, filing, etc. Great for protecting items from scratching during storage and transport. Leaves no residue when removed. Not suitable for use as an anodizing resist. 1.5" wide x 100 yds.

$29.95 ea

Anodized Nb sample using Surface Saver Tape to protect the shine when bead blasting. Note the crisp line!

Wood Dapping Block Set

Ideal for the delicate colored surface on Niobium and Titanium, this all wood set has 8 different sized punches/depressions to meet all your doming needs. Perfect for our Niobium Patterned Discs! Depression block has the 6 smallest depressions on one side and 2 largest on the back side. All contained in a handy stand. Depression sizes: 11mm, 14mm, 17mm, 20mm, 23mm, 25mm, 29mm and 32mm. Punch sizes: 10mm, 13mm, 16mm, 19mm, 22mm, 24mm, 28mm and 31mm.

$39.95

Cup Burs

High speed steel burs trim rough ends of wire and rod into smooth rounded ends. Excellent prep for threading wire and rod. Fast and clean! Use **Anchor Lube** to extend tool life!

Size	Each	6+	12+
20ga…	$2.36	$1.89	$1.65
18ga…	2.36	1.89	1.65
16ga…	2.36	1.89	1.65
14ga…	2.36	1.89	1.65

Size	Each	6+	12+
12ga…	$3.68	$2.94	$2.58
10ga…	3.68	2.94	2.58
8ga…	5.54	4.43	3.88
6ga…	5.54	4.43	3.88

Anchor Lube

A special lubricant for drilling, milling, stamping and tapping tough metals. This non-toxic, water solubule cream was designed for stainless steel, titanium and other tough to work metals.

	Each	5+
4oz dispenser bottle	$9.55	$8.30
8oz dispenser bottle	13.80	12.00

Hallmarking Stamps

Fine domestic tool steel, deep heat treated. All stamps are straight (3 1/4") with 1mm lettering. Please wear eye protection!

NIOBIUM	$17.00 ea	1/8 22KGF	$17.00 ea
TITANIUM	$17.00 ea	©(Copyright)	$12.00 ea

Hardware

GLUE ON TITANIUM

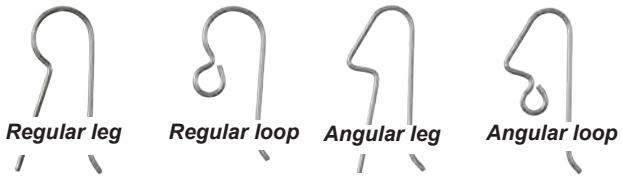
Ear Post

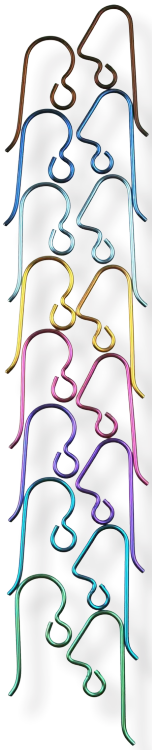
FAX
928/634-6734

TOLL FREE
800
876-3434

ANODIZED FINDINGS

Hypoallergenic Niobium earwires, coils, jump rings and head & eye pins are all available in 8 great anodized colors. Combine colors within a style for quantity price breaks.



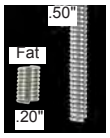


	COST PER PIECE				
	each	50	100	500	1000
NIOBIUM					
REGULAR LEG (.53")	$ .35	$ .31	$ .272	$ .256	$ .240
REGULAR LOOP	.31	.27	.245	.231	.216
ANGULAR LEG	.36	.32	.282	.265	.248
ANGULAR LOOP	.61	.54	.479	.450	.420
Special Purchase .73" REGULAR LEG-limited quantities, no bronze available					
	.30	.26	.236	.222	.208

Earwire Kits ***Save 10%*** Kits contain 3 pairs of each of the **eight** colors (48pcs).

REGULAR LEG	$15.12	ANGULAR LEG	$15.55
REGULAR LOOP	$13.39		

	COST PER PIECE				
	each	50	100	500	1000
COILS(Fits 20ga wire. Coil lengths may vary slightly.)					
Discontinued- .50"	.61	.53	.475	.438	.419
FAT COIL (Fits 12ga wire. Coil lengths may vary slightly.)					
Discontinued- .20"	.43	.37	.331	.306	.293



Coil Kits ***Save 10%*** Kits contain 6 pairs of each of the **eight** colors (96pcs).

COILS KITS	.50"	45.86
FAT COIL KIT	.20"	31.97

JUMP RINGS

	COST PER PIECE				
	each	50	100	500	1000
4mm(.032" wire)	$ .12	$ .11	$ .099	$ .087	$ .078
5mm(.032" wire)	.17	.15	.131	.113	.104
6mm(.040" wire)	.29	.26	.226	.195	.183

Jump Ring Kits ***Save 10%*** Kits contain 6 pairs of each of the **eight** colors (96pcs).

JUMP RING KITS	4mm	$ 9.68
	5mm	12.96
	6mm	22.46

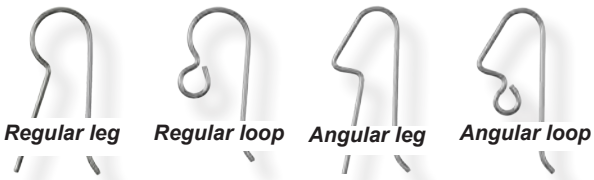
TOLL FREE
800
876-3434

ANODIZED FINDINGS Con't

	COST PER PIECE				
	each	50	100	500	1000+
HEAD PINS					
1.50" x .029"	$ .29	$ .24	$ .197	$ .186	$ .174
EYE PINS					
1.75" x .029"	.37	.31	.247	.233	.218

Kits ***Save 10%*** Kits contain 3 pairs of each of the **eight** colors (48pcs).

HEAD PIN	$12.53
EYE PIN	15.98



UNANODIZED FINDINGS

	COST PER PIECE				
	each	50	100	500	1000
TITANIUM					
REGULAR LEG	$ .17	$ .15	$ .135	$ .127	$ .118
REGULAR LOOP	.17	.15	.133	.125	.117
NIOBIUM					
REGULAR LEG	.33	.30	.262	.246	.230
REGULAR LOOP	.29	.26	.235	.221	.206
ANGULAR LEG	.34	.31	.272	.255	.238
COILS					
FAT COIL (Fits 12ga wire. Coil lengths may vary slightly.)					
Discontinued- .20"	.40	.36	.321	.296	.283

JUMP RINGS					
4mm(.032" wire)	.11	.10	.089	.077	.073
5mm(.032" wire)	.16	.14	.121	.103	.099
6mm(.040" wire)	.28	.25	.216	.185	.178

HEAD PINS					
1.50" x .029"	.28	.23	.187	.176	.164
EYE PINS					
1.75" x .029"	.36	.30	.237	.223	.208

Findings

COLOR YOUR OWN

Fast & easy with an SMT Micro Anodizer

MINI GRABBER

We customize this tool at RMS for anodizing. The niobium tip won't fizz or dissolve. Excellent for findings & small parts.

TITANIUM EAR POSTS

Titanium earposts, drops and clutches make a completely hypoallergenic system for sensitive ears. Clutches not included w/posts.

POST W/BALL/LOOP Grade 1 titanium. 0.440" Length notched post. 0.032" ID Loop.

COST PER PIECE

	each	10	50	100	500
3mm ball w/ loop	$6.41	5.49	4.58	3.66	3.20

BALL AND CAB POSTS Grade 23 titanium. 0.406" Length notched post. Machined from solid stock.

COST PER PIECE

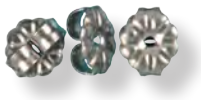
	each	10	50	100
3mm ball	$4.59	3.83	3.44	3.06
4mm ball	$4.59	3.83	3.44	3.06
5mm ball	$6.18	5.15	4.64	4.12
4mm cab	$4.59	3.83	3.44	3.06
5mm cab	$6.18	5.15	4.64	4.12
6mm cab	$6.18	5.15	4.64	4.12

GLUE ON PAD POSTS Grade 1 titanium. 0.375" Length notched post. All titanium pad and post. Use E6000 adhesive for a strong flexible join to any material.

COST PER PIECE

	each	10	50	100	500	1000
5mm pad	$ .70	$ .60	$ .50	$ .40	$ .35	$ .330
10mm pad	$ .73	$ .63	$ .53	$ .42	$ .37	$ .347

TITANIUM CACTUS FLOWER CLUTCH - Grade 1



	$/10	$/100	$/1000	$/5000
Clutch	$2.00	$15.96	$119.70	$399.00

TITANIUM TEAR DROP

Grade 1 titanium. Machined from solid stock. .045" hole diameter, .327" total length.

COST PER PIECE

each	10	50	100	500	1000
$3.00	$2.75	$2.50	$2.00	$1.75	$1.55

What does hypoallergenic mean?

Webster's New World Dictionary defines hypoallergenic as "less likely to cause an allergic reaction than other comparable preparations or goods;..." Allergic reactions may occur from any type of jewelry that contacts the skin, whether it be plastic, ceramic or metal. It occurs as moisture leaches chemicals or metal ions out of the jewelry material. Plated metal or jewelry composed of several metals are especially prone to causing allergic reactions due to an electrochemical reaction that happens between dissimilar metals in the presence of moisture.

E6000
Just for glue on posts. Pg 22

FAX
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TOLL FREE
800
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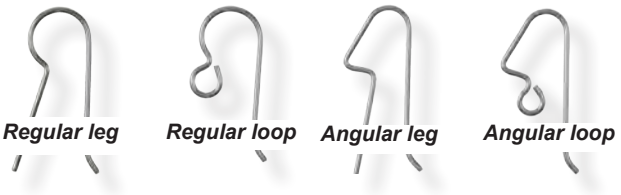
STERLING SILVER



	COST PER PIECE				
	each	50	100	500	1000
REGULAR LEG	.60	.54	.477	.447	.417
REGULAR LOOP	.51	.46	.405	.380	.354
ANGULAR LEG	.85	.77	.683	.641	.598
ANGULAR LOOP	.61	.54	.479	.450	.420
COILS (Fits 20ga wire. Coil lengths may vary slightly.)					
.10" Length	.10	$ .09	$ .078	$ .074	$ .069
2.5mm rnd BEADS	.07	.06	.056	.053	.049
3mm rnd BEADS	.11	.10	.086	.081	.075
3mm rnd corr BEADS	.11	.10	.088	.082	.077
3x5mm oval BEADS	.14	.12	.110	.103	.096

GOLD FILLED (14/20)

	COST PER PIECE				
	each	50	100	500	1000
REGULAR LEG	.98	.86	.782	.734	.685
REGULAR LOOP	.98	.88	.786	.737	.687
COILS(14/20) (Fits 20ga wire. Coil lengths may vary slightly.)					
.10" Length	.26	.23	.205	.192	.179
2.5mm rnd BEADS	.10	.09	.079	.074	.069
3mm rnd BEADS	.12	.11	.099	.093	.087
2.5x3.5mm oval BEADS	.14	.13	.114	.107	.100

PLATED & OXIDIZED

	COST PER PIECE				
	each	50	100	500	1000
SILVER(Fine silver plate)					
TORI	$ .07	$ .06	$ .056	$ .053	$ .049
FAT TORI	.07	.06	.056	.053	.049
Discontinued- 4mm BEADED TORI	.06	.06	.050	.047	.043
Discontinued- 4mm BEADED TORI, antq	.06	.06	.050	.047	.043
Discontinued- 6mm BEADED TORI	.14	.13	.114	.107	.099
Discontinued- 6mm BEADED TORI, antq	.14	.13	.114	.107	.099

NOT ACTUAL SIZE

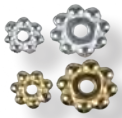
Round

Corrugated

Oval

Tori

Fat Tori


Beaded Tori

Antiqued

TOLL FREE
800
876-3434

PLATED & OXIDIZED

		COST PER PIECE				
		each	50	100	500	1000
	GOLD(22K plate)					
	TORI	.09	.08	.072	.068	.063
	FAT TORI	.09	.08	.072	.068	.063
Discontinued-	4mm BEADED TORI	.06	.06	.050	.047	.043
Discontinued-	4mm BEADED TORI, antq	.06	.06	.050	.047	.043
Discontinued-	6mm BEADED TORI	.14	.13	.114	.107	.099
Discontinued-	6mm BEADED TORI, antq	.14	.13	.114	.107	.099

BRONZE

	COST PER PIECE				
	each	50	100	500	1000+
COILS .10" Length	.02	$ .02	$ .019	$ .018	$ .017

BRASS

		COST PER PIECE				
		each	50	100	500	1000
	2.5mm RND	.02	.02	.014	.013	.013
	TORI	.04	.04	.032	.030	.028
	FAT TORI	.04	.04	.032	.030	.028
Discontinued-	4mm BEADED TORI, antq	.06	.06	.050	.047	.043
Discontinued-	6mm BEADED TORI, antq	.14	.13	.114	.107	.099

COPPER

	COST PER PIECE				
	each	50	100	500	1000
2mm RND	.02	.02	.014	.013	.013
3mm RND	.02	.02	.015	.014	.013
3.3mm DBL CONE	.03	.03	.023	.022	.020
5mm DBL CONE	.07	.06	.056	.053	.049
3mm CORR RND	.02	.02	.018	.017	.016
3x5mm OVAL	.04	.03	.030	.028	.026
3X7mm SWIRL OVAL	.06	.05	.047	.044	.041

BLACK OXIDIZED

		COST PER PIECE				
		each	50	100	500	1000
	COILS .10" Length	.09	.08	.075	.070	.066
	2.5mm RND	.09	.08	.070	.066	.062
	3mm RND	.09	.08	.070	.066	.062
	TORI	.11	.10	.088	.083	.077
	FAT TORI	.11	.10	.088	.083	.077
Discontinued-	4mm BEADED TORI	.06	.06	.050	.047	.043
Discontinued-	6mm BEADED TORI	.14	.13	.114	.107	.099
	3x5mm OVAL	.11	.10	.086	.081	.075
	3.3mm DBL CONE	.10	.09	.079	.074	.069
	5mm DBL CONE	.14	.13	.112	.105	.098

NOT ACTUAL SIZE

RND Bead

Tori *Fat Tori*

Antiqued

RND Bead

DBL Cone

Corrigated

Oval

Swirl Oval

FAX
928/634-6734

Coil

RND Bead

Tori *Fat Tori*

DBL Cone

Oval

Beaded Tori

TOLL FREE
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876-3434

TITANIUM CHAIN

Grade #1 commercially pure titanium chains. The * marks those that have welded links. The more you purchase the lower the price per inch. **Photos not actual size.**

	PRICE PER INCH				
	1in	60in	120in	600in	1200in
Small Curb* 1.8mm	$ .66	$ .63	$ .607	$ .594	.577
Med Curb 4.4mm	1.20	1.14	1.105	1.081	1.051
Half Round Oval* 4.0mm	2.11	2.00	1.937	1.895	1.842
Singapore* 3.5mm	1.20	1.14	1.105	1.081	1.051
Double Rope* 2.5mm	.86	.82	.791	.774	.752
Figaro 5.8mm	2.17	2.07	2.000	1.957	1.902
Ball 2.3mm	1.18	1.13	1.090	1.066	1.037

FIGARO CATCH

Grade #1 commercially pure titanium catch. Specially made to fit the figaro chain so it lays flat when attached to the chain. Titanium hallmarked.

Exclusive Hallmark

PRICE PER PIECE			
each	10	50	100
$20.96	$17.46	$15.72	$13.97

TITANIUM BALL CHAIN CONNECTOR

Grade #1 commercially pure titanium clasp to fit our 2.3mm ball chain. Titanium hallmarked.

PRICE PER PIECE			
each	10	50	100
$.91	$.78	$.65	$.52

TITANIUM LOBSTER CLASP

	PRICE PER PIECE			
	each	10	50	100
Sml (4x10.5mm)	$16.75	$14.36	$11.96	$9.57
Med (5x13mm)	16.75	14.36	11.96	9.57
Lrg (6x15mm)	19.34	16.58	13.81	11.05

TITANIUM OVAL JUMP RINGS

	PRICE PER PIECE			
	each	10	50	100
Xsml (2.5x3.5mm)	$ .19	$ .16	$ .13	$ .11
Sml (3.5x5mm)	.29	.25	.20	.16
Med (4.9x5.9mm)	.56	.48	.40	.32
Lrg (6.2x7.2mm)	1.29	1.11	.92	.74

Findings

FAX
928/634-6734

MINI GRABBER

We customize this tool at RMS for anodizing. The niobium tip won't fizz or dissolve. Excellent for findings & small parts.

TOLL FREE
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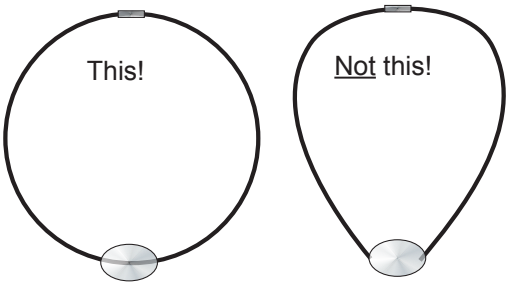
CHRIS'S CABLES

These wire wrapped flexible cables are hand made in the studio of Chris Hentz. They were designed to hold his wife's(Barbara) large enameled beads. They drape in a graceful arc with even the largest beads. The patented finding on the 1.5mm cable is so slim it fits through a 2.2mm hole. The core is plastic encapsulated mild steel. A great new look by itself and perfect for heavy beads.

Barbara Minor and Christopher Hentz
Egg and Sphere Enamel Beads on Fine Silver
Fine silver Chris's Cables
Photo by - Ralph Gabriner



Hand Crafted Catch

Our Chris's Cables have sold out but you can still purchase them directly from Chris at https://www.chrisscables.com

FAX
928/634-6734

COLOR YOUR OWN
Fast & easy with an SMT Micro Anodizer

TOLL FREE
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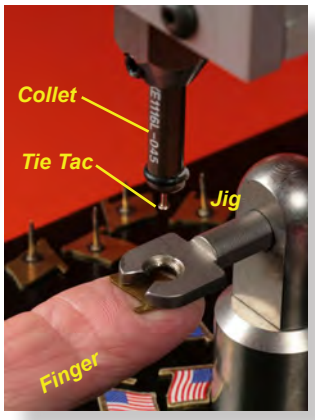
Sparkie® II
The Millennium Edition

Capable of welding findings without solder, without annealing the parts and with little clean up! A new fusion finding can be applied every 20 seconds on a finished piece of jewelry. Stones can already be in place. Many repairs take only seconds.

How does it work?

An instant weld is achieved when an electrical charge is released thru a forged nib at the base of a fusion finding. A small explosion occurs that drives off dirt, oxides and atmosphere. It all takes about a millisecond. First, you load a fusion finding in the collet and then place your work under the jig. The welder is charged with the foot pedal for a few seconds. The release is tripped and BANG! the weld is complete. No damage is done to the piece or your finger!



See the complete Instructions

The optional **Production Table** offers the high volume production and flexibility of welders costing three times as much.
SPARKIE II comes with complete instructions, built in voltmeter, foot pedal, earpost and tie tac collets, jigs #6 and #7, safety glasses and built in isolation transformer. 60HZ, 4AMPS, 110VAC, 14lbs. Optional, built in 220VAC stepdown transformer for overseas use is available.

	$1250.00
220 volt conversion…	**$1271.00**

Full two year warranty from the manufacturer.

SPARKIE® is a registered trademark of Triad, Inc.

Fusion Findings
What makes fusion welding work is a small nib that is forged in the base of the finding. You can see them on these ear posts. It is the same metal as the finding. NO solder. NO flux. The stored voltage in the welder explodes through the nib producing a vacuum and enough heat to fuse the finding in place, clean and unannealed.

Production Table

This solid, all steel table replaces the jig holder on a SPARKIE II. Thermoplastic impression molds you make allow for fast accurate placement in high volume production.

Table w/ one disk	**$229.00 ea**
Extra plastic disk	**7.95 ea**

Fusion Welding

CAN'T DO IT!
Fusion welding only applies to Sparkie and fusion findings. It can not be applied to welding other metal components together.

The tiny nib forged on fusion findings is the key. Nothing else works!

TOLL FREE
800
876-3434

Collets

Each collet is designed to hold a specific type of finding. See **Fusion Findings** pages 39-40.

.030"L Ear Wire

.045"L Tie Tac

$59.50 ea

Small Pin Joint or Catch

Large Pin Joint or Catch

Small Ear Clip-***Discontinused***

Large Ear Clip

Cuff Link

$83.50 ea

Replacement parts

Occasionally these parts will need to be replaced on collets.

Ball bearings or "O" rings	**$4.39 dz**
Brass clips (Specify collet type)	**$4.27 ea**

Jigs

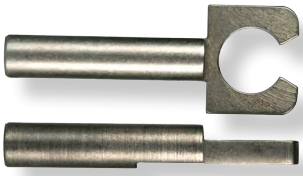
Jigs provide a point of electrical contact and act as a guide for locating the piece and the weld. Special shapes are provided for contoured metal surfaces.

$69.50 ea

#5 *Narrow .030".*

$69.90 ea

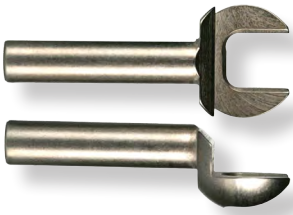
#6 *Open .030"* ***#7*** *Open .045"*



$87.50 ea

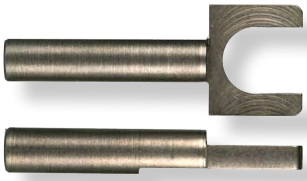
#8 *For large findings.*

#9 *.030" Domes* ***$87.50 ea***



$87.50 ea

#10 *For large findings & domes.*



$87.50 ea

#11 *For large findings.*

Power Pack

This is a separate small box that boosts the power for larger based findings. It plugs in to the built in recepticals and enhances your SPARKIE II with ***75% more power!*** It cuts the charging time in half. Add power when you need it for large findings and deeper welds. Takes only seconds to install.

$225.00 ea

CAN'T DO IT!

Fusion welding only applies to Sparkie and fusion findings. It can not be applied to welding other metal components together.

The tiny nib forged on fusion findings is the key. Nothing else works!

TOLL FREE
800
876-3434

FUSION FINDINGS

Findings designed for fusion welding are standard throughout the industry. All of our earposts are heavy .029" or .030" diameter and use standard clutches. All, except the 1.25" French Hooks, have bullet noses.

STANDARD EARPOSTS

	Length	each	$/10	$/100	$/1000	$/5000
Titanium	.375"	—	—	3.04	22.77	75.90
	.437"	—	—	3.17	23.76	79.20
	.500"	—	—	3.47	26.04	86.80
Stainless steel	.375"	—	—	1.56	11.73	39.10
	.437"	—	—	1.56	11.73	39.10
	.500"	—	—	1.56	11.73	39.10
Sterling silver*	.375"	—	1.17	7.00	67.68	326.75
	.437"	—	1.26	7.55	72.94	352.15
	.500"	—	1.80	10.77	104.14	502.75
14K gold	.437"	7.06	59.29	536.43	—	—

FRENCH HOOKS (.030"L collet) Weld on straight & then bend to shape

Titanium	1.25"	—	3.41	27.30	204.72	682.40
Stainless steel	1.25"	—	—	5.00	37.50	125.00
Sterling silver*	1.25"	—	2.90	17.38	167.99	811.00

EARPOST CLUTCHES

Titanium clutch	—	2.00	15.96	119.70	399.00
Soft clutch	—	1.00	5.74	39.92	187.15
Clutch w/guard-white	—	.88	5.06	35.20	165.00
Clutch w/guard-gold	—	.90	5.18	36.00	168.75
Stainless steel	—	1.85	10.63	73.92	346.50
Stainless monsters	—	3.20	18.40	128.00	600.00
Sterling*	.35	3.17	24.66	211.35	—
Sterling monsters*	.73	6.64	53.15	498.30	—
14k gold	10.24	84.36	783.37	—	—

TIE TAC POSTS

Nickel silver	Length	each	$/10	$/100	$/1000	$/5000
	.312"	_	$ .11	$ .73	$ 6.42	$ 30.30
	.375"	_	.12	.78	6.79	32.00

TIE TAC CLUTCHES

Military brass	—	.39	2.60	22.75	107.25
Military white plate	—	.83	5.50	48.13	226.90
Flat top white plate	—	9.30	62.00	542.50	—

*NOTE: Prices are based on $1200 gold and $16 silver.

NOT ACTUAL SIZE

Titanium

Soft Clutch

White w/Guard

Gold w/Guard

Stainless

Sterling

14K Gold

TOLL FREE
800
876-3434

FUSION FINDINGS Con't

NOT ACTUAL SIZE

PINS

		each	$/10	$/100	$/1000	$/5000
Small joints	Nickel silver	—	$ .90	$ 6.00	$ 52.50	$247.50
Small catches	Nickel silver	—	5.10	34.00	297.50	—
Small pinstems(.032" dia)						
	Nickel silver					
	1.00"	—	.56	3.74	32.73	154.30
	1.50"	—	.61	4.08	35.70	168.30
Large joints	Nickel silver	—	.90	6.00	52.50	247.50
Large catches	Nickel silver	—	5.10	34.00	297.50	—
	Sterling*	.66	5.55	41.61	378.30	—
Large pinstems(.036-.040" dia)						
	Nickel silver					
	1.00"	—	1.20	8.00	70.00	330.00
	1.50"	—	1.20	8.00	70.00	330.00
	2.00"	—	1.51	10.08	88.20	415.80

CUFF LINKS

		each	$/10	$/100	$/1000	$/5000
Joints						
	Nickel silver	—	1.20	8.00	70.00	330.00
	Sterling*	.34	3.21	22.91	213.78	—
Links						
	Nickel silver	—	12.60	84.00	735.00	—
	Sterling*	2.97	28.33	202.38	1888.88	—
Rivet wire						
	Nickel silver	—	.60	4.00	35.00	165.00
	Sterling*	—	3.86	27.54	257.04	—

EAR CLIPS

		each	$/10	$/100	$/1000	$/5000
Small joints						
	Sterling*	.73	6.14	43.28	418.80	—
Small paddle backs (L = 5/8")						
	Nickel silver	—	1.12	7.45	65.15	307.15

*NOTE: Prices are based on $1200 gold and $16 silver.

Fusion Findings
What makes fusion welding work is a small nib that is forged in the base of the finding. You can see them on these ear posts. It is the same metal as the finding. NO solder. NO flux. The stored voltage in the welder explodes through the nib producing a vacuum and enough heat to fuse the finding in place, clean and unannealed.

Military

Flat top

Joints

Catches

Cuff Link & Joint

Paddle backs

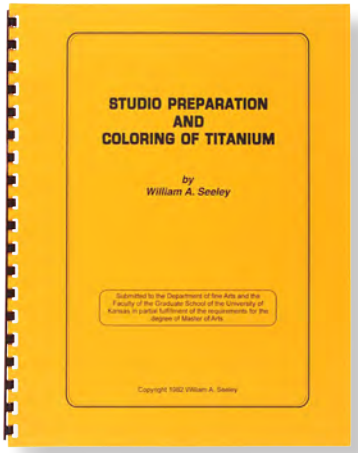
Joints

TOLL FREE
800
876-3434

Studio Preparation and Coloring of Titanium

by Bill Seeley

Based on over two years of research, this masters thesis stands as the dominant publication in the field. It is written for the studio artist and clearly describes the reactive metals, their uses and the anodizing equipment necessary for their coloring. Included in each booklet is an "Anodizing Update", a reprint from Metalsmith, Fall 1983 and a 1" x 3" x 100 volt anodized Titanium color scale. 20 pages, soft cover, lay flat spiral bound.



$7.00 postage paid
$10.00 overseas
$5.60 with purchase

Hydrogen Peroxide Pickle

The formulas in this paper were developed by Bill Seeley at the University of Kansas and provide a fast and easy way to remove pink oxides. Many copper alloys (brass, bronze, etc) will appear reddish after heating and normal pickling. This red oxide layer can be removed with this process using simple household chemicals.

$ .50 with SASE or purchase

Patina Basics

by Tim McCreight

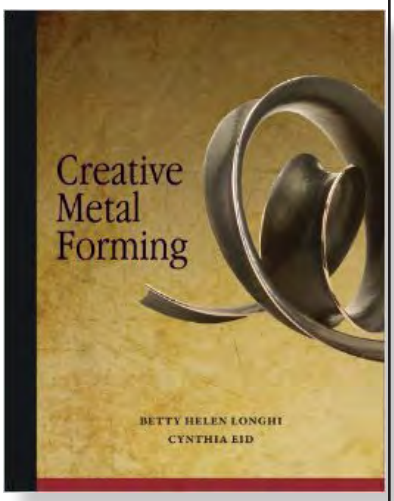
Tim McCreight, with his usual easy approach, describes the exciting world of patinas in this informative and entertaining video shot in his kitchen. Topics include supplies, metal preparartion, and application methods.Tim's practical approach focuses on safe, typical household chemicals like ammonia and vinegar. By taking the mystery out of these ancient techniques, "Patina Basics" invites experimentation and discovery. 70 Minutes, Region 1, NTSC Format.

$29.99

Creative Metal Forming

by Betty Helen Longhi & Cynthia Eid

Two accomplished metalsmiths, both with extensive teaching careers, have joined forces to provide a comprehensive survey of the ways to form sheet metal. The 256-page text covers a huge swath, from a basic dapped disk through synclasting, anticlasting and spiculums to a raised vessel. Along the way, special attention is given to anticlastic forming and the vocabulary first introduced by their mentor, Heikki Seppä. Creative Metal Forming includes 35 detailed exercises to explain the basics as well as advanced nuances of each category. Metalsmiths Michael Good and Nancy Linkin have each contributed demonstrations of their forming techniques. Full color, Hard cover w/jacket, 256 pages, 700+ photos, 70 illustrations.



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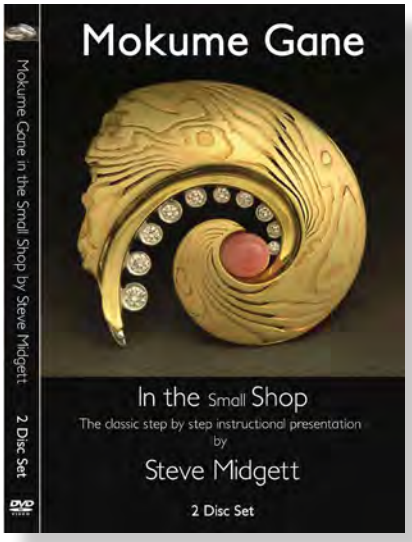


Mokume Gane, In the Small Shop DVD

by Steve Midgett

Here is the classic and complete "how to" guide for creating quality diffusion bonded mokume gane. Using tools you probably already own, Midgett takes you through the process he developed and shows you how to make beautiful mokume gane on a small scale. Sections included cover appropriate metals for mokume, diffusion theory, and building what Midgett calls the $10.00 gas kiln. Also demonstrated are step by step instructions on laminating a mokume billet, making it into sheet and a variety of patterning techniques. 138 Minutes, 2 DVD Set.

$49.95

The Complete Metalsmith Professional Edition

by Tim McCreight

This revised edition has become standard text for classes around the world. The clear layout and concise format give you the help you need in practical and easy to understand terms. Hundreds of topics are covered from abrasives to woven wire. This text may well become the most useful tool on your bench! 299 pages. 1600 drawings. Wrap around lay flat binding.
9.25"x7.5"

$30.00

The Complete Metalsmith Pro Plus w/CD

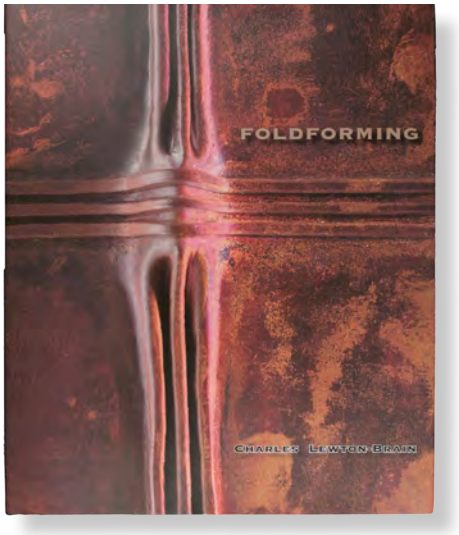
by Tim McCreight

Includes the **Professional Edition** print version plus a CD that contains:

- The full text searchable by key word
- Short video clips
- **Practical Jewelry Rendering** (PDF),
- **Design Language** (Flash version, created just for this CD)
- Calculation software for PC, Mac, and PDA's - Weight & length Conversions, Cost of Metal calculator, Casting needs calculator, Drawing length calculator, Tubing Blank calculator, Metal Conversions, Gold Alloys, Equivalent numbers, Metal & gem properties & suppliers.

Discontinued!

$45.00



Fold Forming

by Charles Lewton-Brain

More than 20 years ago, Canadian goldsmith Charles Lewton-Brain invented a radical way to develop forms in metal sheet. In the ensuing decades, he has led hundreds of metalsmiths to explore and expand on his pioneering work. Now for the first time, the results of those efforts are compiled into a comprehensive resource. With practical techniques and over 450 photographs, this groundbreaking book sets a standard for breadth, authority, and inspiration.
160 pages, 8 by 10.5 inches, hardcover, full color, dust jacket.

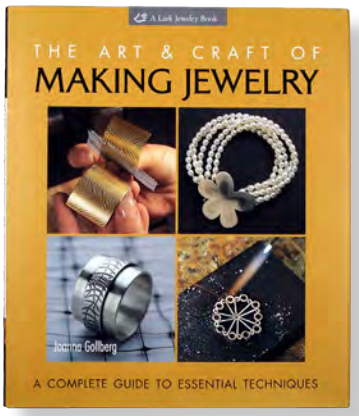
$30.00

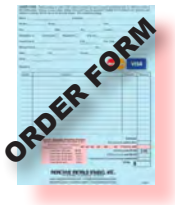
The Art & Craft of Making Jewelry

by Joanna Gollberg

When you are ready to learn extensive jewelry-making techniques and high quality craftsmanship, this comprehensive resource is exactly what you need. A wealth of information, detailed illustration, and many handy "bench tips" on materials and methods will enable you to make individualized, one-of-a-kind pieces. In addition, the hundreds of color photographs of imaginative contemporary works are inspiring. Lavishly illustrated with many artists represented. 175 pages, hardcover, 9" x 10".

$35.00





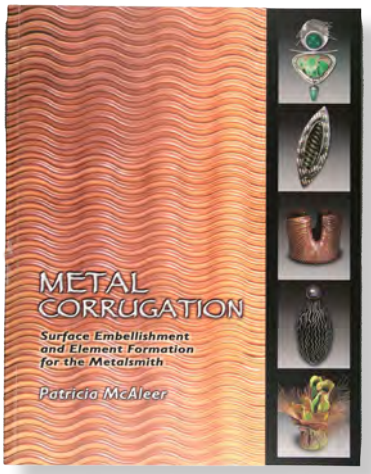
Metal Corrugation

by Patricia McAleer

Corrugation is not a new concept. The process offers immediate results that will inspire you and take you to a greater level of exciting creativity. Surface texture and elements unique to this process, will capture your imagination. Lavishly illustrated. 137 pages, soft cover, 8" x 11", 188 illustrations.

Discontinued!

$29.95

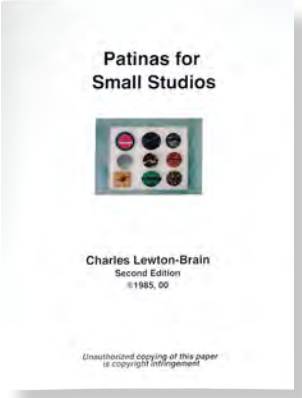


Patinas for Small Studios

by Charles Lewton-Brain

This paper describes safer, easy patination methods for metals that involve kitchen and other easily obtainable chemicals to produce blues, greens, browns, blacks, greys and reddish tones on metals. Application methods and options for pattern and surface control are described.
34 pages, 5 color pictures

$19.95



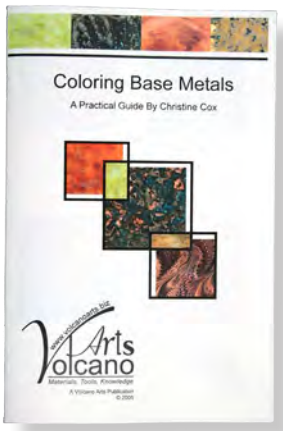
Coloring Base Metals, A Practical Guide

by Christine Cox

From the forward by Tim McCreight

"This compact volume contains edge-to-edge information, clearly presented in terms that we all understand. Here's a boast not every book can make: you can read this and start working on a gorgeous patina in the time it would take to cook a pizza. That's because Christine demonstrates how to use familiar household chemicals like ammonia and salt to color metal.
In addition to its practicality, Coloring Base Metals deserves special credit for its vitality. You won't see these words written, but at the top of each page it could say, "Hey, wanna see something really cool?" The author's infectious enthusiasm permeates every page, and I am certain it will infect you too."

$20.00

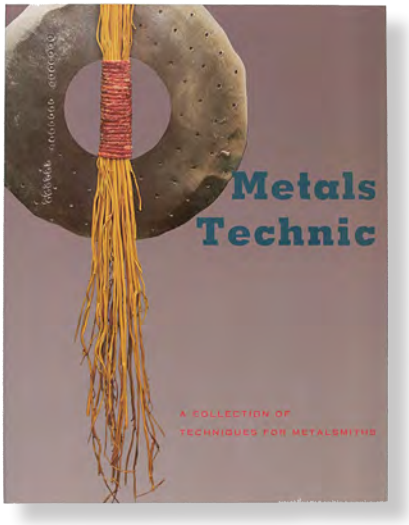


Metals Technic

Contributors: Cogwell, Fike, Good, Kingsley, LaPlantz, Lewton-Brain, McCreight, Okim, Patzlaff, Sanford, Scherr and Seppa.

In its second printing, this collection of twelve chapters by a dozen well-known metalworkers provides insight into specific techniques like ranulation, reticulation, fold forming anticlastic raising, tool making and more. 160 pages, soft cover, 8" x 11", 145 illustrations, two color thoughout.

$17.95



Pocket Ref

by Thomas J. Glover

Hundreds of tables, maps, formulas, constants and conversions in a fit in your pocket, 3.2"x 5.4" book. Data on almost everything you can think of: air, automotive, carpentry, electrical, math, metal data, hardware, geology, plumbing, [illegible], weights and measures and much, much more. Everyone should have [illegible] one copy. 768 pages, soft cover, Third Edition.

Discontinued!

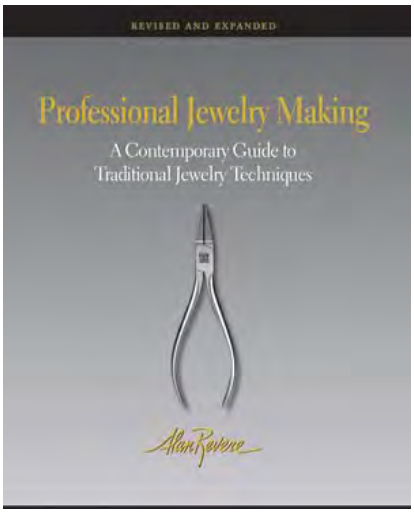
$12.95

Professional Jewelry Making

by Alan Revere

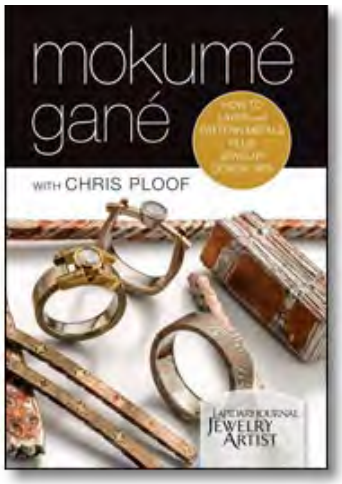
When master goldsmith Alan Revere published Professional Goldsmithing in 1991, he brought traditional European trade education to the US for the first time, adapting it for an American audience. The book was a best seller and quickly became a standard text in the field. To mark the 20th anniversary of this groundbreaking work, Revere and Brynmorgen Press offer a revised and expanded edition that includes new projects, scores of new photos and a handsome new layout. What hasn't changed is the precise instruction that makes this edition a fitting testament to its predecessor. 360 pages, hard cover, 8.5" x 11", full color, over 800 photos.

$70.00



Mokume Gane with Chris Ploof DVD

by Chris Ploof



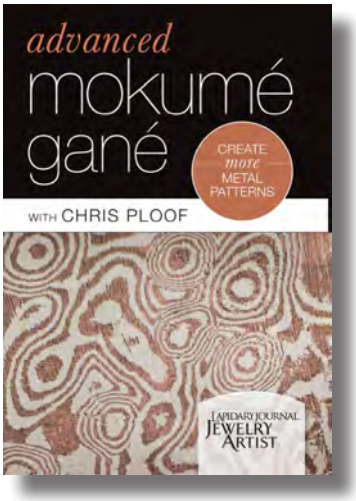
Viewers will step into expert jeweler and artist Chris Ploof's studio to learn about the Japanese metalworking craft mokumé gané. They'll watch as Chris demonstrates all the steps they need to master this complex metalsmithing technique in this detailed 89-minute DVD workshop.

Plus, they'll get tips for creating two beautiful mokumé gané patterns to start creating stunning decorative jewelry designs. Jewelry artists will want to order a copy of this workshop DVD to: Start the right way—learn tips for cleaning your metal for successful billet building • Avoid over firing their billet with careful torch maneuvering techniques so their metal doesn't become a "ruined pile of goo." • Accessibly create mokumé gané at home; discover alternative low tech tools and detailed steps to conquer this technical skill • Learn two different texturing methods for their mokumé gané • Create a billet large enough to yield two mokumé gané rings and much more! Region Free DVD.

$24.95

Advanced Mokume Gane with Chris Ploof DVD

by Chris Ploof



Get a look into the creative and expressive art of mokumé gané patterning as you join expert metalsmith Chris Ploof for this instructional workshop DVD. Go in-depth and explore four advanced patterning techniques that Chris has honed from years of trial and error. Discover ways to pattern mokumé gané including twisting, carving, and hammering unique shapes and designs. Plus, with up-close shots and multiple examples of each technique, you'll see which patterns you can achieve. 135 minutes.

Get your copy of this workshop DVD today to:
•Learn specific considerations for refining your mokumé gané including rolling, annealing, and flattening. •Discover important safety measures for cutting into mokumé gané and working with power tools. •Explore different ways to create artistic patterns in mokumé gané by carving, twisting, and using chasing and repoussé techniques. •Create different decorations in your metal including repeating four-pointed stars, random ripple-like shapes, and customized designs of your own. •See exactly what the final look of the metal will be with up-close shots and examples of ways to modify each technique. Region Free DVD.

$39.95

How to Color Titanium for Jewelry DVD

by Noel Yovovich

Discover why titanium is the "magic metal" with accomplished jewelry artist Noel Yovovich! Titanium is light, strong and turns brilliant colors instantly when heated or anodized--something you will explore in depth during this fun workshop. Learn both methods, plus how to get the most out of the process by using masking, grinding and brush-coloring to get the color you want, where you want it. Lots of good principles that apply to both titanium and niobium. This is a great DVD which includes all the basics. 73 minutes. Region Free DVD.

$24.99

REFERENCES

How to contact us: *928/634-3434 • 800/876-3434 • Fax-928/634-6734*
EMail: *info@reactivemetals.com*
Online catalog: *www.reactivemetals.com*

Brown & Sharp Wire Guage

Gauge#	Inches	Millimeters
0	.325	8.255
2	.258	6.553
4	.204	5.181
6	.162	4.115
8	.128	3.251
10	.102	2.590
12	.081	2.057
14	.064	1.626
16	.051	1.295
18	.040	1.016
20	.032	.813
21	.027	.686
22	.025	.635
24	.020	.508
26	.016	.406
28	.013	.330
30	.010	.254

Reactive Metals Data

B&S Gauge Dia./Thickness	Wire & rod Feet/pound Nb	Wire & rod Feet/pound Ti	Sheet pounds/sq ft Nb	Sheet pounds/sq ft Ti
30 ga(.010")	3417	6,509	0.45	0.235
28 ga(.013")	2,054	3,851	0.576	0.305
26 ga(.016")	1,360	2,542	0.714	0.376
24 ga(.020")	868	1,627	0.89	0.469
22 ga(.025")	556	1,041	1.12	0.587
21 ga(.027")	477	-	-	-
20 ga(.032")	340	635	1.43	0.751
18 ga(.040")	218	407	1.79	0.939
16 ga(.051")	134	250	2.3	1.197
14 ga(.064")	85	159	2.86	1.5
12 ga(.081")	53	99	3.62	1.9
10 ga(.102")	33.4	65	4.6	2.4
8 ga(.125")	22.2	41.7	5.58	3.0
6 ga(.162")	13.2	24	-	-
4 ga(.204")	8.3	15	-	-
2 ga(.258")	5.2	-	-	-
0 ga(.325")	3.3	-	-	-

Conversion Factors

To convert	into	multiply by
inches	millimeters	25.4
feet	meters	0.3048
millimeters	inches	0.03937
meters	feet	3.281
pounds	kilograms	.4536
kilograms	pounds	2.205
ounces(avdp)	grams	28.3495
ounces(troy)	grams	31.103
ounces(avdp)	troy ounces	0.81146
ounces(troy	avdp ounces	1.01971
grams	ounces(avdp)	0.03527
grams	ounces(troy)	0.03215

Fractional & Decimal Inches to Millimeters

Fractions	Decimal	Millimeters
1/128	0.0078	0.1981
1/64	0.0156	0.3962
1/32	0.0312	0.7925
1/16	0.0625	1.5875
1/8	0.1250	3.1750
1/4	0.2500	6.3500
3/8	0.3750	9.5250
7/16	0.4375	11.1125
1/2	0.5000	12.7000

Tap & Clearance Drill Specifications

Tap & Die	Wire size	Tap drill bit	Clearance drill bit
00-90	**.047in(17-18ga)**	**#62/.038in/0.97mm**	**#55/.052in/1.30mm**
0-80	**.060in(14-15ga)**	**#55/.052in/1.30mm**	**#52/.0635in/1.61mm**
1-72/1-64	**.073in(13 ga)**	**#53/.0595in/1.50mm**	**#48/.076in/1.93mm**
2-56	**.085in(11-12 ga)**	**#50/.070in/1.78mm**	**#43/.089in/2.26mm**
16ga Spl	**.051in(16 ga)**	**#57/.043in/1.10mm**	**#54/.055in/1.40mm**

OUR GUARANTEE

If you are not completely satisfied with your purchase, return it within 30 days and we will exchange it, replace it or refund your purchase price. A restocking charge may apply. This warranty does not apply to electrical and electronic equipment, chemicals or books/DVD's. This warranty does not include incidental or consequential expenses. No other warranty is implied.

We will not share any of your information with anybody!

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Call Toll Free anywhere in the USA • 1-800/876-3434

Payment

Minimum order is $25.00. All prices are subject to change. All orders must be prepaid, COD, or charged to **Mastercard, Visa, Discover or American Express.** Checks and money orders are accepted. ***A $20.00 fee will be charged on all returned checks. U.S. funds only.***

COD - **UPS or US Mail add $14.50. Available in the U.S. only.**

COD Returns

You must be prepared to accept and pay for all COD parcels. If it is returned, you will still owe the shipping charges. They will be added to your next order. We will no longer offer you COD service. All future orders will be prepaid.

Accounts

10 day open accounts are available subject to approval of our credit application.
30 day extended credit is available to colleges & universities providing purchase orders.
A finance charge of 1.75% per month (annual 21%) will be applied to all past due accounts.

Shipping Charges-We bill according to the true weight of your package at the time it is shipped.
Charges are based on service, weight, value and size of your package and include insurance.
If you need a quote on shipping before your package is shipped, please let us know and we'll give you all the available options/prices. We offer all UPS services & all US Post Office services. A $3 handling fee is added to each box shipped.

Sales Tax

Arizona residents without a Sales Tax License and goods purchased not for resale pay *9.85%* sales tax.

Returned Merchandise

All returns must be authorized. Returned merchandise must be in like new condition and will be subject to a 10% restocking charge. (Unless it is our error.) No returns accepted on Books/DVDs, Electrical equipment or Chemicals.

OVERSEAS ORDERS

World Wide (Canada see below.)
What works best is **Master Card**, **Visa, Discover** or **AMEX**. This quickly solves the problems of exchange rates and exact shipping charges. A credit card guarantees the immediate shipment of your order. We do not charge until we ship. We have worldwide service available via Priority or Express Mail, & UPS.

Canada *No COD!*

The shipping choices to Canada are even broader. We have Priority Mail, Express Mail, & UPS. It is best to charge your order via **Master Card**, **Visa, Discover** or **AMEX**. Costs vary with how fast you want delivery and depends on the final weight of the shipment. Shipping charges will be based on the type of service you select, weight and insurance, **plus $7.00 handling**.

Privacy Statement:
We do no sell or share your information. Ever.

ORDER FORM Please prepay or order COD unless you have an open account established with us. Minimum order is $25.00(flexible). Checks, money orders, **Master Card, Visa, Discover & American Express** are accepted. Payable in U.S dollars only. All prices are subject to change. $20.00 fee on all returned checks. 10% restocking charge.

Name_____ Company_____
Printed name as it appears on your credit card.

PO Box_____ Street_____ Phone _____

City_____ State_____ Zip_____ Country_____
Province Postal Code

Destination is: Commercial ☐ Residential ☐ Ship Via_____
UPS, Mail, Air Mail, FedX

Credit Card #_____ CV# _____ Exp. Date _____
3 or 4 digit security code

Billing Address_____ City_____
If different from above.

State_____ Zip _____ Country_____
Province Postal Code

Email_____
Auto Tracking from UPS via Email

Signature _____

Quantity	Description	Price each	Total price
		Subtotal	
		AZ residents **add 9.85%**	
		Shipping **add**	
		Handling **add $3.00**	+ 3.00
		COD(U.S.only) **add $14.50**	+ 14.50
		International & Canada **must add $4.00**	+ 4.00
		TOTAL	$

We bill according to the true weight of your package at the time it is shipped. If you need a shipping quote before your order is shipped, please let us know and we'll give you all the available options/prices.

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