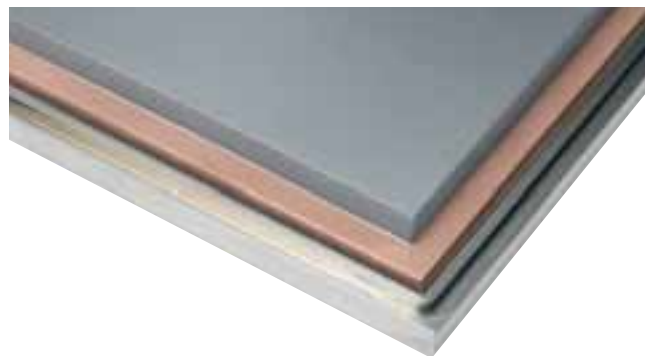


## ► Services

### ■ Indium Target Bonding Service

Indium bond targets to backing plates for increased thermal conductivity under high-power inputs.

- Many sputtering processes benefit from the higher thermal and electricity conductivity
- Required for most ceramic target materials to avoid cracking from thermal shock
- Easier de-bonding and cleanup of spent materials



Property	Typical Values
Maximum Operating Temperature (°C)	150°C
Thermal Conductivity (W/mK)	83
Coefficient of Thermal Expansion (K <sup>-1</sup> )	32.1 x 10 <sup>-6</sup>
Electrical Resistivity (ohm-cm)	8 x 10 <sup>-6</sup>
Bond Coverage	>95%
Bond Line Thickness	0.010" +/- 0.003"

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Deposition Materials

Target Size	Target Material	Target Bonding Services	Part No.	Price
1" to 2" Diameter	Metal or Ceramic		EJBONDMET1	Call
3" to 4" Diameter	Metal or Ceramic		EJBONDMET3	Call
5" to 6" Diameter	Metal or Ceramic		EJBONDMET5	Call
7" to 8" Diameter	Metal or Ceramic		EJBONDMET7	Call
Over 8" Diameter or Linear Targets	—		—	Call

Order sputter target and bonding service together and receive a free copper backing plate for standard targets up to 4" diameter.

### ■ Conductive Elastomer Target Bonding Service

Conductive elastomers are used for specific materials and applications.

- Ideal for targets with low melting temperatures and reactive materials
- Offers a higher maximum temperature than indium bonding
- UHV rated

Property	Typical Values
Maximum Operating Temperature (°C)	250°C
Thermal Conductivity (W/mK)	54
Coefficient of Thermal Expansion (K <sup>-1</sup> )	2.2 x 10 <sup>-4</sup>
Electrical Resistivity (ohm-cm)	0.0476
Bond Coverage	>98%
Bond Line Thickness	0.010" - 0.025"

Target Size	Target Material	Target Bonding Services	Part No.	Price
1" to 2" Diameter	Metal or Ceramic		EJBOND1-ELAS	Call
3" to 4" Diameter	Metal or Ceramic		EJBOND3-ELAS	Call
5" to 6" Diameter	Metal or Ceramic		EJBOND5-ELAS	Call
7" to 8" Diameter	Metal or Ceramic		EJBOND7-ELAS	Call
Over 8" Diameter or Linear Targets	Metal or Ceramic		—	Call

Order sputter target and bonding service together and receive a free copper backing plate for standard targets up to 4" diameter.

NOTE: Reference the material list in the catalogue and [www.kjlc.bonding](http://www.kjlc.bonding) on our website for additional information and the recommended bonding method for your specific target materials. Call your sales representative for details and to order.

➤ **Services & Materials**

■ **Copper Cup Bonding**

Copper “cups” are backing plates with a raised lip around the circumference to reduce the clamping forces of the sputter gun’s hold-down ring. This method is generally used when bonding fragile targets where the pressure may crack the targets. It requires a modification of the O.D. of standard targets and specifies non-standard target part numbers.

*NOTE: Reference the material list in the catalog and [www.kjlc.bonding](http://www.kjlc.bonding) on our website for additional information and the recommended bonding method for your specific target materials. Call your sales representative for details and to order.*

■ **OFHC Copper Backing Plates**

Machined from oxygen-free, high-conductivity copper.

- For regular, circular disc-type sputtering sources
- Most sputter sources, including our TORUS® 1, 2, 3 cathodes, accept a 0.125" (1/8") thick target bonded to a 0.125" thick backing plate
- For targets of other thicknesses, choose the backing plate thickness to adjust the total thickness to 0.250" (1/4") to suit most applications

OFHC Copper Backing Plates		
Size (O.D. x Thickness)	Part No.	Price
1.0" x 0.0625"	EJBPCU01A1	Call
1.0" x 0.125"	EJBPCU01A2	Call
2.0" x 0.0625"	EJBPCU02A1	Call
2.0" x 0.125"	EJBPCU02A2	Call
3.0" x 0.0625"	EJBPCU03A1	Call
3.0" x 0.125"	EJBPCU03A2	Call
4.0" x 0.0625"	EJBPCU04A1	Call
4.0" x 0.125"	EJBPCU04A2	Call
5.0" x 0.0625"	EJBPCU05A1	Call
5.0" x 0.125"	EJBPCU05A2	Call
6.0" x 0.0625"	EJBPCU06A1	Call
6.0" x 0.125"	EJBPCU06A2	Call
6.0" x 0.250"	EJBPCU06A4	Call
7.0" x 0.125"	EJBPCU07A2	Call
7.0" x 0.250"	EJBPCU07A4	Call
8.0" x 0.125"	EJBPCU08A2	Call
8.0" x 0.250"	EJBPCU08A4	Call
TORUS 10 Full (6.375" x 0.50")	EJBPT10FULL	Call
OFHC Copper Backing Plate with Drilled Steel Keeper		
1.3" x 0.125"	EJBPCU01.3K+	Call
2.0" x 0.125"	EJBPCU02K2	Call
3.0" x 0.125"	EJBPCU03K2	Call
6.0" x 0.125"	EJBPCU06K2	Call

*NOTE: Those identified in the chart by diameter and thickness only are plain discs without through or tapped holes. They are suitable for most circular target sources from other manufacturers, although they may need minor machining for screw, clamps, etc.*

■ **Backing Plates for OEM Sources**

For use with popular sputtering systems from OEMs, including Perkin-Elmer, MRC, and CVC

- We stock all backing plates listed below; call for availability for other sputtering system models not shown
- Models listed meet or exceed the quality and reliability of the original parts

*NOTE: Please contact our Materials Department at [materials@lesker.com](mailto:materials@lesker.com) or fax us at **412-384-2573** for pricing and availability.*

Source OEM	Compatible with Model(s)	Description	Part No.	Price
Perkin-Elmer	2400/4400	Standard Copper Backing Plate for RF Magnetron	EJBPA1921001	Call
Perkin-Elmer	2400/4400	Low-Carbon Iron & Copper Backing Plate for DC Magnetron	EJBPA1928101	Call
MRC	600/900	Standard Copper Backing Plate with Removable Stainless Steel Studs	EJBPA341005	Call
MRC	8600	Stainless Steel Backing Plate	EJBPA1923602	Call
CVC	601	Enhanced Copper Backing Plate with Serpentine Water Cooling Track	EJBPCUCVC601	Call

# ➤ Materials

## ■ Conductive Elastomer Discs and Sheets

An economically attractive substitute for silver-filled pastes normally used in target bonding.

When placed between the back of a (clamped, not bonded) target and the cooling well of a magnetron sputter source, these sheets enhance thermal transfer, especially for targets that have poor thermal contact or conductance.

- Made of a vacuum-compatible 0.020" thick silicone rubber
- Contain silver-coated copper powder filler
- Reusable

### SPECIFICATIONS

NASA Rating — Type A	Tensile Strength — 200 psi
Elastomer Binder — Silicone	Elongation — 100%
Conductive Filler — Silver/Copper	Tear Strength — 40 lb./in.
Volume Resistivity (as supplied) — 0.004 ohm-cm	Compression Set (70 hrs @ 100°) — 32%
Hardness — 65 Shore	Low Temp Flex — -65°C
Specific Gravity — 1.9	Max. Continuous Use Temp — 125°C

Conductive Elastomer Discs and Sheets		
Size	Part No.	Price
1.0" Diameter	EJBPEL01A	Call
25mm Diameter	EJBPEL025	Call
2.0" Diameter	EJBPEL02A	Call
3.0" Diameter	EJBPEL03A	Call
4.0" Diameter	EJBPEL04A	Call
100mm Diameter	EJBPEL100	Call
5.0" Diameter	EJBPEL05A	Call
125mm Diameter	EJBPEL125	Call
6.0" Diameter	EJBPEL06A	Call
150mm Diameter	EJBPEL150	Call
8.0" Diameter	EJBPEL08A	Call
200mm Diameter	EJBPEL200	Call
10.0" Diameter	EJBPEL10A	Call
250mm Diameter	EJBPEL250	Call
TORUS® 10E	EJBPELT10	Call
Bulk Sheet (10" x 15" x 0.02")	EJBPEL1015X2	Call

NOTE: For other sizes not listed, please contact our Materials Department at [materials@lesker.com](mailto:materials@lesker.com) or fax us at 412-384-2573 for pricing and availability.

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## ■ Epoxy System for DIY Target Bonding

Our KL-325L silver-filled 2-part epoxy cement provides an economical means of bonding targets for the do-it-yourselfer.

- Economical alternative to indium or elastomer bonding—effectiveness varies with application
- Adhesion properties of glue combined with the thermal and electrical conductivity of silver
- Cure time is approximately 24 hours at 25° C
- In-vacuum use recommended at medium vacuum pressure ranges (10<sup>-3</sup> Torr and above)

### SPECIFICATIONS

Epoxy — KL-325K	Pot Life @ Room Temperature — 1–2 hrs
Uncured Resin — Silver Paste	Cure Cycle (After Mixing) — 18hr @ 25° C; 2hr @ 60° C
Volume Resistivity @ 25° C — 0.001 ohm-cm @ 100° C — N/A	Thermal Conductivity cal/sec/cm <sup>2</sup> /°C/cm — 25 x 10 <sup>-4</sup>
Tensile Shear @ 25° C — 1,200–2,500 psi	Coeff. of Expansion cm/cm/°C — N/A
Shelf Life @ Room Temperature — 4–5 mo	Working Temperature — -60° C to 175° C

Silver Vacuum Epoxy for Target Bonding		
Description	Part No.	Price
Silver Vacuum Epoxy	KL-325K	Call

## ■ Silver-Filled Paste

Made specifically for sputter targets.

This viscous sealant fills small scratches and surface imperfections better than indium foil, often dramatically improving target cooling.

- A mixture of low vapor pressure vacuum fluid and silver powder
- Combines excellent thermal/electrical conductive properties with high vacuum compatibility
- No silicone-based material
- Does not harden

### SPECIFICATIONS

Operating Range — 10°C–160° C	Density — 1.97 g/cc
Vapor Pressure @ 20° C — 2 x 10 <sup>-9</sup> Torr	Color — Gray

- Can be removed with methanol or acetone to leave a virtually contamination-free surface
- Its electrical conduction makes it perfect for DC sputtering

#### Contents:

- Each jar contains sufficient paste to coat a 5" x 15" rectangle or a 10" diameter circle
- Includes utensils for applying and spreading the paste

DIRECTIONS: Apply the silver-filled paste to the contact surfaces between the back of the sputter target and cooling plate.

Silver-Filled Paste			
Description	Size	Part No.	Price
Silver-Filled Paste	50 g Jar	EJAGPASTE50G	Call

NOTE: Do not use silver-filled paste on ceramic or porous metal targets.

Deposition Materials