



MATERIALS

CRUCIBLES, LINERS & Cones

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Crucible liners protect the water-cooled copper hearth in electron beam units and eliminate the risk of contamination when one material replaces another in a given pocket. They also minimize heat transfer between the evaporated material and the water-cooled crucible. They reduce time of clean up and material changes and help increase deposition rates.

Liners can be manufactured from Graphite, Molybdenum, Tantalum and most other metals as well as from Al_2O_3 , BN and other non-metals. The choice of the liners depends on the material to be evaporated.



Liners

TEMESCAL & TELEMAR LINERS

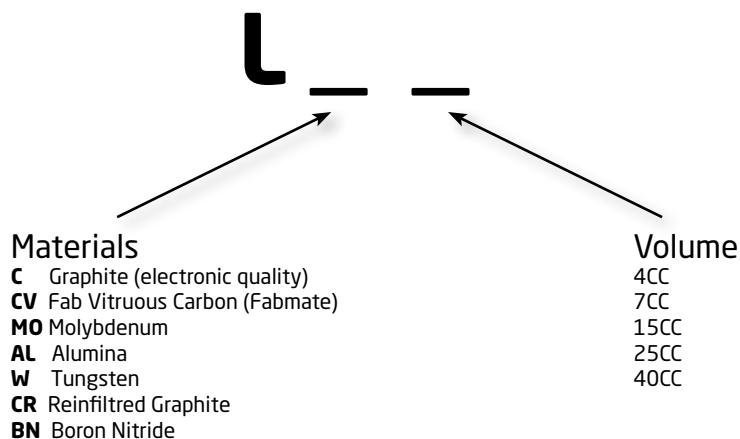
DIMENSIONS

DESIGNATION	DIMENSIONS in mm		ANGLE
	UPPER DIAMETER	HEIGHT	
4 cc crucible <i>Telemark</i>	22.48	14.61	15°
7 cc crucible <i>Telemark & Temescal</i>	29.64	14.30	15°
15 cc crucible <i>Telemark & Temescal</i>	37.59	17.02	15°
25 cc crucible (4 pockets) <i>Telemark & Temescal</i>	46.99	17.27	15°
40 cc crucible <i>Temescal</i>	50.80	26.97	15°
40 cc crucible <i>Telemark</i>	51.56	25.91	15°

Other dimensions on request.

ORDER PART NUMBERS

To determine correct model Number



* for 25 cc liners, indicate the number of pockets 4 or 6 as follow:

L4_25CC
L5_25CC

Exemples: Liner 7 cc Fabmate: LCV7CCFAB

Liner 4 cc Molybdenum: LMO4CC

Liner 25 cc 4 pockets Graphite: L4C25CC

Others sizes (13 cc, 18 cc, 30 cc, 156 cc...) and materials (Intermetallic, Copper, Tantalum...) on request.

All NEYCO Graphite crucibles and liners are *Electronic Quality* - ashes < 5 ppm -

OTHER E-BEAM LINERS

Neyco supplies crucible liners for Leybold, Edwards, Satis, APT/Ferrotec, Thermionics, Varian, CHA Industries, MDC electron beam guns. All sizes and materials on request.

Crucible Liners Selection Table

EVAPORATION MATERIAL	LINERS							
	C	VC	Al ₂ O ₃	BN	Mo	Ta	Int	W
Aluminum Al	•						•	
Aluminum Fluoride AlF ₃	•							
Aluminum 2% Silicon Al/Si	•						•	
Antimony Sb	•		•	•				
Antimony Oxide Sb ₂ O ₃			•	•				
Antimony Sulfide Sb ₂ S ₃			•					
Arsenic As	•	•	•					
Arsenic Sulfide As ₂ S ₃					•			
Barium Oxide BaO			•					
Beryllium Be	•	•						
Bismuth Bi		•	•					
Bismuth Selenide BiSe ₃	•							
Bismuth Telluride BiTe ₃	•							
Cadmium Cd			•					
Cadmium Selenide CdSe			•					
Cadmium Sulfide CdS	•		•					
Calcium Ca			•					
Cerium Ce		•	•					
Cerium Oxide CeO ₂	•							
Chromium Cr	•	•						
Cobalt Co			•					
Copper Cu	•		•		•	•		
Copper Oxide Cu ₂ O			•					
Cryolite Na ₃ AlF ₆	•	•						
Europium Eu			•					
Europium Oxide EuO ₃								•
Gadolinium Gd			•					
Gallium Ga	•	•	•					
Gallium Arsenide GaAs	•							

EVAPORATION MATERIAL	LINERS							
	C	VC	Al ₂ O ₃	BN	Mo	Ta	Int	W
Germanium Ge	•		•					
Germanium Oxide GeO ₂		•	•					
Gold Au	•	•	•	•				
Indium In	•		•		•			
Indium Oxide In ₂ O ₃			•					
Iridium Ir								•
Iron Fe		•	•					
Lanthanum La			•					
Lead Pb	•		•					
Lithium Li			•					
Lithium Fluoride LiF			•					
Lutetium Lu			•					
Magnesium Mg		•	•					
Magnesium Fluoride MgF ₂			•					
Magnesium Oxide MgO	•		•					
Manganese Mn			•					
Molybdenum Mo	•							
Molybdenum Oxide MoO ₃			•		•			
Neodymium Nd			•					
Neodymium Fluoride NdF ₃			•					
Neodymium Oxide Nd ₂ O ₃								•
Nichrome IV Ni/Cr	•	•	•					
Nickel Ni		•	•					
Nickel Oxide NiO			•					
Palladium Pd	•		•					
Palladium Oxide PdO			•					
Permalloy Ni/Fe		•	•					
Platinum Pt	•							•
Praseodymium Oxide Pr ₂ O ₃								•
Rhodium Rh		•						•
Samarium Sm			•					
Samarium Oxide Sm ₂ O ₃								•
Scandium Sc			•					
Selenium Se	•	•	•					
Silicon Si		•				•		
Silicon Dioxide SiO ₂	•		•					
Silicon Monoxide SiO	•					•		
Silver Ag	•	•	•		•			
Strontium Sr		•						
Tantalum Ta	•							
Tantalum Oxide Ta ₂ O ₅		•						
Tellurium Te	•	•	•					
Terbium Tb			•					
Thallium Tl			•					
Thorium Fluoride ThF ₄		•						
Thullium Tm			•					
Tin Sn	•		•					

EVAPORATION MATERIAL	LINERS							
	C	VC	Al ₂ O ₃	BN	Mo	Ta	Int	W
Tin Oxide SnO ₂			•					
Titanium Ti	•							
Titanium Oxide TiO	•	•						
Yttrium Y			•					
Yttrium Oxide Y ₂ O ₃	•							
Zinc Zn			•					

C = Graphite, **VC** = Vitreous Carbon, **BN** = Boron Nitride, **Int** = Intermetallic (BN + TiB₂).
All given data are indicative and may need to be adapted to your process.

 See Section C - Pellets in this catalogue about *evaporation materials*.

 See Section M - Vacuum Deposition Equipment in this catalogue about *E-Guns* and *E-Guns parts*.



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