



Expect Service

Radiation Products Design Inc

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## INSTRUCTIONS

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### RPD INFORMATION

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### RPD PRODUCT INFORMATION

<b>Item Number</b>	<b>Description</b>
489-600	Brass Mesh Bolus (50x50 cm)
489-601	Off-White Brass Mesh Bolus (50x50 cm)

## DISCLAIMER

**THESE PRODUCTS ARE NOT SHIPPED STERILE BUT SHOULD BE CLEANED AND STERILIZED OR DISINFECTED BEFORE EACH USE.  
THESE PRODUCTS ARE TO BE USED BY AUTHORIZED PERSONNEL ONLY.**

**RX ONLY:** Federal law (USA) restricts the sale of these devices for use only by (or at the order of) a physician.

RADIATION PRODUCTS DESIGN INC assumes no liability for consequential damages of any kind for this material when used interchangeably with products of other manufacturers/suppliers or for any direct or indirect results and consequences of its use or misuse by the customer. Federal law (USA) restricts the sale of this device for use only by (or at the order of) a physician.

## INTRODUCTION

Brass Mesh Bolus can be used for post-mastectomy chest walls using 4 MV and 6 MV photons. It has a tissue equivalency between 2 and 3 mm.

When placing Brass Mesh over breast and a gap is between breast, use a piece of double stick tape on the patient between the breasts to secure the brass mesh down.

When wrapping the Brass Mesh Bolus around the side of a chest wall, use a product such as spandage, gauze or clear plastic wrap (Item 119-750) to hold the Brass Mesh Bolus against the skin which will prevent hanging gaps.

The Brass Mesh Bolus can be warmed for patient comfort using a Heating Pad (Item # 489-612). DO NOT heat higher than 110°F to avoid burning the patient. NOTE: Each patient will have a different threshold of tolerance for the heated bolus so we recommend starting at a lower temperature to evaluate the patient's tolerance to the heated bolus so as not to make the patient uncomfortable. Warming the Brass Mesh Bolus will not damage or cause deterioration of the Brass Mesh Bolus.

If you are using 15MV or higher energy beam, there might be neutron activation which may increase the skin dose and/or give dose to the hands of the therapist who handles the bolus. Some patients have had skin reactions. See papers "Skin dose effects of post mastectomy chest wall etc." and "Dosimetric assessment of brass mesh bolus for postmastectomy photon radiotherapy".

In August 2020, the production process of the Brass Mesh Bolus was improved to help prevent entanglement of the links when they make contact with each other.

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**Off-White Brass Mesh Bolus: Item 489-601**

This new Brass Mesh Bolus has been coated with off-white high temperature enamel paint. This will allow Vision RT & C-RAD positioning to see the patient with little reflection.

**SPECIFICATIONS**

**Material:** Brass

**Density:** 8.4 to 8.73 g/cm<sup>3</sup>

**Size:** 19.7" x 19.7" (50x50 cm)

**Stock Thickness:** 0.007" (0.178 mm)

**Panel Thickness:** 0.060" (1.52mm) with hollow centers

**Tissue Equivalent Thickness:** 2.0 mm to 3.0 mm

**Finish (489-600):** No Finish; will tarnish over time

**Finish (489-601):** Off-white High Temperature Enamel Paint (Latex Free)

**Weight:** 1 lb (0.44 kg)

**CLEANING**

All Brass Mesh Bolus must be thoroughly cleaned before being disinfected or sterilized. The presence of organic matter can protect bacteria from the action of the disinfectant or sterilant, or react with the agent and make it ineffective.

Cleaning can be done either with a mixture of soap and water (or detergent) or with water and detergent and disinfectant. Rinse thoroughly with clean water to remove all soap residue and disinfectant.

**DESINFECT**

Cidex OPA Item 466-401

Wash with water and soap or detergent and disinfectant. Soak in Cidex OPA for 12 minutes. Then rinse in three different batches of sterile water to remove all traces of Cidex OPA.

NOTE: This product does not require ACTIVATION.

CaviCide Disinfectant:

Wash with water and soap or detergent and disinfectant.

Spray/Apply CaviCide directly to surface, thoroughly wetting area to be disinfected and allow surface to remain visibly wet for 30 seconds. Wipe surface using towel.

FOR TUBERCULOCIDAL ACTIVITY: Allow surface to remain wet for 10 minutes at room temperature (69 F / 20 C)

CaviCide Immersion Solution:

Wash with water and soap or detergent and disinfectant.

Place Brass Mesh Bolus in a container with sufficient amount of CaviCide so as to allow for complete submersion, cover and allow to soak for 10 minutes at room temperature (69 F / 20 C)

To disinfect, use a mixture of 70% isopropyl alcohol and 30% distilled water. Spray the solution onto the product, then let it air dry.

CaviCide Disinfectant Wipes can be used. Item 466-334

DO NOT USE BLEACH PADS or WIPES as Bleach corrodes Brass

This information is not a guarantee and does not relieve the user from the responsibility of the proper and safe use of cleaning agents. The use of certain agents can be harmful on the surface appearance. Tarnished brass will not affect the density.

Radiation Products Design, Inc. assumes no responsibility resulting from the use of such cleaning agents to the brass.

## STERILIZATION

These products are not shipped sterile, but should be disinfected or sterilized before each use. Steam Autoclave is the recommended process for sterilization of these products.

### **Autoclave (Steam)**

Put Brass Mesh between two pieces of autoclave safe material or place inside a steam sterilization bag. Hold the ends of the mesh inside the sterilization bag so that the mesh hangs flat, then lay it down and roll the mesh up to sterilize in the autoclave. This method prevents mesh from touching itself.

Follow specifications in the following chart.

<b>Sterilizer</b>	<b>Temp.</b>	<b>Pressure</b>	<b>Time</b>	<b>Dry Time</b>
Steam Autoclave	121 C (250 F)	15 psi	15 Minutes	30-40 Minutes
Steam Autoclave (gravity displacement)	121 C (250 F)	15 psi	30 Minutes	30-40 Minutes
<b>Steam Autoclave (prevacuum):</b>				
Unwrapped Items	121 C (250 F)	30 psi	3 Minutes	30-40 Minutes
Unwrapped Items	132 C (270 F)	30 psi	3 Minutes	30-40 Minutes
Lightly Wrapped	132 C (270 F)	30 psi	4 Minutes	30-40 Minutes
Medium Wrapped Items	132 C (270 F)	30 psi	8 Minutes	30-40 Minutes
Heavily Wrapped Items	132 C (270 F)	30 psi	10 Minutes	30-40 Minutes
psi = Pounds Per Square Inch				

**Sterrad  
50, 200,  
100S, NX,  
100NX**

Sterrad uses Hydrogen Peroxide solution. This type of sterilization will cause discoloration of the unpainted brass. This will not affect the density of the Brass Mesh Bolus. The bolus must be laid flat or rolled up in cloth.

## **WARRANTY**

### **Limited Warranty Product**

Radiation Products Design's Brass Mesh Bolus should be handled with care due to its delicate structure. RPD carefully inspects and interleaves each sheet with tissue paper to ensure product is fully functional. Tissue paper will prevent links from entanglement. If material does become entangled, use caution to carefully unhook entangled links. Do not tear apart as links will be removed creating a hole in material.

## REFERENCES

### **Dosimetry for Tangential Chest Wall Irradiation**

By Peter Fessenden, Ph.D., Bernice B. Palos, B.A., and Clarence J. Karzmark, Ph.D.

The skin-sparing effect of megavoltage photons is lost to a varying extent when tangential beams are used to irradiate the chest wall. The skin dose for this technique, with and without a bolus, was investigated for 4MV and 6MV photons using film, thermoluminescent dosimeters, and an ionization chamber. Metal/tissue interface effects were observed when a flexible brass fabric material was used as a bolus. Four layers of a brass fabric, each having an average areal density of 0.25 g/cm<sup>2</sup>, are used as the bolus for 6mc; three layers are used for 4MV. This bolus conveniently conforms to the body contours, eliminating air spaces between the bolus and the skin surface.

**Radiology 128; 485-489, August 1978**

### **Enhanced surface dose via fine brass mesh for a complex skin cancer of the head and neck: Report of a technique.**

By Megan E. Daly, MD, Allen M. Chen, MD, Jyoti S. Mayadev, MD, Robin L Stern, PhD.

#### **Purpose**

The use of fine brass mesh in conjunction with rotational intensity modulated radiation to enhance surface dose for a complex skin cancer of the head and neck has not previously been described.

**Practical Radiation Oncology 18 April 2014**

### **Skin dose effects of postmastectomy chest wall radiation therapy using brass mesh as an alternative to tissue equivalent bolus**

By Erin Healy MA, Shawnee Anderson, BA, Jing Cui, DSc, Laurel Beckett, PhD, Allen M Chen, MD, Julian Perks, PhD, Robin Stern, PhD, Jyoti Mayadev, MD

#### **Purpose**

The use of brass mesh as a bolus is relatively uncommon in postmastectomy chest wall radiation therapy (PMRT). This study aimed to characterize the skin dose effects of using 2 mm fine brass mesh as an alternative to the traditional tissue-equivalent bolus during chest wall PMRT.

**Practical Radiation Oncology: Volume 3, Issue 2, Pages e45 – e53, June 2013**

**ACCESSORIES**

<b>Item #</b>	<b>Description</b>
119-750	Wrap, Clear Plastic - 12" x 100'
674-308	MT Spandage Tubular Net, for Size M Chest
674-309	MT Spandage Tubular Net, for Size L Chest
674-310	MT Spandage Tubular Net, for Size XL Chest
674-311	MT Spandage Tubular Net, for Size 2XL Chest
674-312	MT Spandage Tubular Net, for Size 3XL Chest
489-612	Heating Pad, 110-120VAC
466-401	Cidex OPA, 1 gal.
466-403	Cidex OPA Solution Test Strips, 60 strips/bottle
466-332	CaviCide Disinfectant, 24 oz. spray bottle
466-334	CaviCide Disinfectant Wipes