



# Labware

## Safety and Protection Supplies

### Radiation Safety Equipment and Instruments

#### Iso-Shield™ Beta Protection Equipment

Protective shields and containers are essential for minimizing exposure to beta radiation in any laboratory where radioactive materials are routinely handled. All Iso-Shield™ products are constructed of durable and transparent 1/2" thick acrylic. This material has been proven to provide complete shielding from high specific activity  $\beta$ -emitting isotopes, including  $^{32}\text{P}$ . Iso-Shield™ products are also ideal for protection against biohazardous materials found in research and clinical laboratories. NOTE: acrylic shields cannot block secondary X-rays or  $\gamma$ -radiation.



805531 **ISO-SHIELD™ MEDIUM, ANGLED BETA-SHIELD** 1 each 181.90

ICN's **Iso-Shield™** free-standing beta shields are specifically designed to protect personnel handling beta-emitting isotopes on a benchtop or in a fume hood. They are also ideal for protection against biohazardous material. Constructed of heavy-duty 1/2" acrylic, these shields provide that added measure of safety you need, yet are priced lower than thinner shields you can buy.

The ICN **Iso-Shield™ Medium Angled Beta-Shield** is indispensable for creating a protected workstation for radioactive sample handling. Angled top allows you to view contents of tubes and containers during pipetting and other operations. Completely stable on the integral base, which provides a large flat work surface while minimizing the risk of radioactive spills on the benchtop.

*Dimensions:*  
W x H x D: 12 x 18 x 10"  
(30 x 46 x 25 cm.)

805532 **ISO-SHIELD™ LARGE, ANGLED BETA-SHIELD** 1 each 269.90

Same features as our medium angled beta-shield  
larger overall dimensions  
*Dimensions:*  
W x H x D: 16 x 24 x 12"  
(40 x 60 x 30 cm.)



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805533 **ISO-SHIELD™**  
**MICROTUBE RACK**  
*Unique Two-Position Lid!*  
ICN's Iso-Shield™ microtube rack has an innovative two-position lid that can **serve as both a storage container and a shielded work station**. With the lid down, the rack is fully enclosed-- ideal for safely storing and transporting beta-emitting samples. But just place the lid in the upright position, and it forms an integral shield which protects you while you pipet or handle tubes. ICN's microtube rack frees your benchtop workshield for other uses. The removable, autoclavable inner rack holds 24 microcentrifuge tubes in a convenient 4 x 6 array-- ideal for sequencing reactions. The ICN Iso-Shield™ Microtube Rack can be used for storage in a refrigerator or freezer, plus it can be filled with crushed ice when your tubes need to be cooled. All in all, you'll find ICN's rack to be handy and useful throughout the lab in a variety of applications.  
*Dimensions, closed:*  
L x W x H: 7 x 5 x 3.75 "  
(17.5 x 13 x 9.5 cm.)  
Holds 1.5 ml. microcentrifuge tubes.



1 each 159.85

805534 **ISO-SHIELD™**  
**PORTABLE WORKSTATION**  
The ICN Iso-Shield™ Portable Workstation combines a benchtop workshield and a storage container in one handy unit. Like all Iso-Shield™ products, its constructed of durable 1/2" thick acrylic, for *complete* protection from beta radiation. The hinged lid can be held open at any angle, forming a convenient and comfortable workshield. When you're through working, you can flip down to form a fully-enclosed storage container. The inside of the container is sized to easily accommodate labware such as microtube racks, vials, even large hybridization trays. Comfortable handles provide for easy transport around the laboratory.  
*Internal Dimensions:*  
L x W x H: 12 x 15 x 3 "  
(30 x 38 x 7.5 cm.)  
*Height, open:*  
19.5" / 50 cm.



1 each 275.60

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805537 **ISO-SHIELD™** SHIPPING VIAL STORAGE CONTAINER 1 each 164.10

This handy container has two compartments which fit most standard manufacturers' shipping vials, including both round and square vials. **Works exceptionally well with the Iso-Loc™** packaging system from ICN (see <sup>32</sup>P section). Each compartment has its own hinged lid, so that only one beta radiation source need be exposed at a time. The container can be used for storage in a refrigerator or freezer, as well as for safe transport around your laboratory.

*Internal Dimensions of Each Compartment (2):*

L x W x H: 1.6 x 1.6 x 2.4 "  
(4 x 4 x 6 cm.)

805535 **ISO-SHIELD™** STORAGE CONTAINER 1 each 192.15

The ICN Iso-Shield™ Storage Container is made of transparent acrylic which protects the user from beta radiation during storage and transport of samples kept in standard labware. Dimensions accommodate most test tube racks, small bottles, and radiochemical vials (i.e., ICN Iso-Loc™ Packaging System). Can be used in the refrigerator or freezer, as well as on a benchtop or shelf. Equipped with a convenient hinged lid, this versatile container provides radiation protection throughout the laboratory.

*Internal Dimensions:*

L x W x H: 10 x 4.75 x 5.5 "  
(25 x 12 x 14 cm.)

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## Safety and Protection Supplies

805536 **ISO-SHIELD™ WASTE CONTAINER** 1 each 341.75

The ICN Iso-Shield™ Waste Container is designed to accommodate standard disposable plastic bags. Our sturdy container will safely store your contaminated waste prior to disposal. A fitted lid facilitates use, thereby reducing exposure.

*Internal Dimensions:*

L x W x H:

12 x 9 x 16 "

(30.5 x 23 x 41 cm.)



### Hot Box System

- Total Containment of Radioactive Gases
- Reduce Laboratory Contamination
- Affordable and Effective
- For all <sup>35</sup>S Metabolic Labeling Protocols
- No Decontamination of CO<sub>2</sub> Incubators Necessary



The Hot Box system improves laboratory safety by eliminating the hazard of contamination by volatile <sup>35</sup>S compounds used in metabolic labeling procedures. It isolates all labeling and allows for full use of your CO<sub>2</sub> incubator. It is easy-to-use, simply place the experiment to be labeled and a Static Hot Filter in the system, attach the Exhaust Hot Filter and flush the unit with the desired gas mixture. Seal the unit, remove the Exhaust Hot Filter and Flow Meter, then place the system in the properly controlled temperature environment. To remove the labeled cells, reattach the Exhaust Hot Filter and Flow Meter and flush the system again. Finally, you dispose of both filters. If you already have an ICN Modular Incubator Chamber, all that is required is a Hot Box Conversion Kit. Complete instructions are provided.

Cat. No.	Description	Qty.	Price
6154000	Hot Box™ System w/Single Flow Meter	1 each	1060.50
6154100	Hot Box™ System w/ Dual Flow Meter	1 each	1165.50
6154200	Filter Pack 5 Static/5 Exhaust	1 pack	136.50
6154300	Air Filters (sterile)	6/pack	47.25
6154400	Chimney Filter	5/pack	89.25
6154500	Hot Box™ Conversion Kit A	1 kit	551.25
6154600	Hot Box™ Conversion Kit B	1 kit	624.75

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### Brem Shields

### PUG 7 Radiation Detector



The *Bremsstrahlung* dose rate from high energy beta emitting radionuclides, such as  $^{32}\text{P}$ , can be significant. This shield, manufactured of a "low Z" material, provides for safe storage and will greatly reduce hand and wrist dosage. The 3/4" Brem Shield is lightweight and the cylindrical dimensions provide a comfortable "grip". Screw caps are easily removed from the bottle by turning the upper shield. Nylon "set-screws" secure the bottle (glass or plastic) while the "O"-ring sets in the cover grip and retains the cap.

Dose rate measurements (surface of plastic vial containing 10 mCi  $^{32}\text{P}$  in 0.5 ml aqueous solution): Unshielded = 2450 mR/hr, With Brem Shielding = 5 mR/hr.

Cat. No.	Description	Qty.	Price
805530	8 cc Glass Vial 2.25" x 1" diameter cavity	1 each	115.75
805529	60 cc Poly Bottle 2.75" x 1.5" cavity	1 each	126.80
805528	8 cc Poly Vial 1.625" x 0.81" diameter cavity	1 each	115.75

Any alpha, beta or gamma monitoring program whether aimed at the measurement of radiation levels or control of contamination is served by the versatile PUG 7 combined with an accompanying probe. This universal instrument can be used with any geiger or scintillation probe ICN offers. The PUG 7 utilizes a continuously adjustable regulated high voltage supply of 200-1500 V to operate GM or scintillation detector delivering a 1 millivolt or higher pulse. An adjustable discriminator allows for full control over system sensitivity. Its high voltage system provides sufficient output to operate GM tubes up to 2 inches in diameter without loss of efficiency, as well as, PM tubes with voltage dividers of over 100 megohms total resistance.

### Features:

**Panel Meter:** 0-500 counts per minute (times switch multiplier), 200-1500 volts.

**Flashing Red LED:** Proportional to the count rate.

**Audible Sonalert:** Proportional to the count rate. Has a volume control knob.

## Safety and Protection Supplies

**Ranges:** 0-500, 5,000, 50,000, 500,000 counts per minute. All 4 ranges are suitable for use with both GM and scintillation probes.

**Controls:** Range Switch, Volume Control, High Voltage Adjustment, High Voltage Display, Discriminator Adjustment, Time Constant, Calibration, Zero Adjustment.

**Probe Connections:** BNC low noise, teflon insulated.

**Outputs:** 5 pin DIN connector available on side port, Chart recorder drive, Pulse out to operate remote rate-meter or scaler. Earphone - pulse to operate ear-phone.

**Batteries:** PUG 7 operates on one (or optionally two) standard 9 volt transistor batteries. Recommended - Eveready 1222 carbon, Eveready E146X mercury, or Kodak U9VL-1 lithium (or equivalent).

### Battery Life:

Battery Type	Life (in hours)
Carbon-Zinc	100
Alkaline	150
Mercury	400
Nickel-Cadmium	100
Lithium	200

**Dimensions:** 4.25" x 4.0" x 8.25" with handle in fold down position.

**Weight:** 2 lbs. 8 oz. without probe.

Cat. No.	Description	Qty.	Price
807304	PUG 7	1 each	821.35

## Frisker Radiation Detector



- Light Weight
- Anti-Saturation Circuit
- Built-In Sonalert w/volume control
- One-Hand Operation
- Detachable Pancake Probe

The Frisker radiation detector is small in size, light-weight in design. The removable probe and large detector area makes this a very useful monitor for bench tops, for checking hands, clothes, and shoes for nearly all radioactive contamination.

This small, three range ratemeter features a 2" diameter pancake probe. It reads in counts per minute (and mR/hr). The thin probe window is recessed and protected by sturdy aluminum grill. It will detect alpha, beta and gamma radiation. The anti-saturation circuit will not fall below full scale in high fields. It is tested to 100 R/hr, and the sonalert with volume control gives audible rate indication.

### Specifications -

**Meter:** rugged 2.5" meter

**Ranges:** 3 linear ranges of 0-500, 0-5,000, and 0-50,000 counts per minute.

**Audio:** sonaler with volume control.

**Detector:** T-1190 2" diameter (5 cm) "pancake" GM tube. Window Diameter: 1.75" (4.5 cm). Window Thickness: 1.5 mg/cm<sup>2</sup>. Quench Gas: halogen for long life.



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**Background:** typically 50 counts per minute. Thin profile tube (13 mm) give slow background.

**Efficiency:** 100% for all beta and alpha emissions that have sufficient energy to penetrate the thin window.

**Physical Dimensions:** 3" (7.6 cm) x 5.25" (13.3 cm) x 2.25" (5.7 cm) excluding probe, meter, and handle.

**Feet:** probe has replacable nylon feet for easy sliding on bench or desk top without contaminating the bottom face of the instrument or detector.

**Calibration:** single master calibration pot as well as individual cal pots for each scale.

**Power:** 9 volt nominal "transistor" battery, Eveready 1222.

**Current Drain:** typically 3 ma.

**Handle:** swivel type polished anodized aluminum.

**Weight:** electronics only - 22 oz., 625 g; With pancake probe 34 oz., 0.97 kg.

**Battery Life:** 100 hours.

### Thin-Window Pancake Probe (GM)

*For Alpha, Beta, and Gamma Radiation Detection!*



This probe is designed for rapid inspection of laboratory bench and equipment surfaces and for personnel. It features a 1.75" diameter, 1.5 mg/cm<sup>2</sup> pancake tube. It "sees" an area over three times as great as the usual 1" diameter End-Window GM detector probe, but because of its flat surface, any background is actually lower than the usual 1" End-Window probe. It is supplied complete with the pancake tube and with the probe-to-instrument coil cord and low noise Teflon<sup>®</sup> insulated BNC connector.

Cat. No.	Description	Qty.	Price
807396	Frisker	1 each	1019.80

Cat. No.	Description	Qty.	Price
807310	Thin-Window Probe	1 each	407.90

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## Safety and Protection Supplies

### End-Window Probe (GM)

*For Alpha, Beta, and Gamma Radiation Detection!*



A general purpose GM probe sensitive to alpha, beta, and gamma emissions. A typical application involves the detection of the  $^{14}\text{C}$  beta. It is halogen quenched and has an infinite life. The thin 1.5-2.0 mg/cm<sup>2</sup> x 28.5 mm diameter window is protected by a 79% open grill. Its dimensions, excluding the cord, are 45 mm diameter x 115 mm in length.

Cat. No.	Description	Qty.	Price
807312	End-Window Probe	1 each	270.10

### Portable Lead Container

Suitable for carrying and storing up to 4 mCi of  $^{60}\text{Co}$  or 150 mCi of  $^{137}\text{Cs}$ . The storage space dimensions are 1.5" diameter x 3" deep. It is constructed of steel clad, 1" thick lead walls. The convenient sliding handle facilitates carrying.

Cat. No.	Description	Qty.	Price
805490	Portable Lead Container	1 each	347.30

### Lead Bricks

Smooth 2" x 4" x 8" virgin lead bricks (#26) can be easily stacked to form a protective wall.

Cat. No.	Description	Qty.	Price
805491	Lead Brick	1 each	60.65

### Lead Lined Aprons

The FDA has recommended routine use of special shields to prevent unnecessary exposure to the reproductive organs of individuals undergoing X-ray examinations. These extremely durable, thin, flexible, multi-layers of lead vinyl are coat fashioned to wear in comfort never before experienced. They have top ties and intermediate ties long enough to tie in front if desired. The plastic cover is stain resistant and easily cleaned with a damp cloth.

Cat. No.	Description	Qty.	Price
808404	5-Ply Coat Apron 0.5 mm lead equiv., 10.5 lbs. 24" x 38" neckline to bottom	1 each	192.95
808405	5-Ply Coat Apron 0.5 mm lead equiv., 11.75" 24" x 43" neckline to bottom	1 each	203.95
808406	3-Ply Coat Apron 0.3 mm lead equiv., 5 lbs. 24" x 38" neckline to bottom	1 each	154.35
808440	Half Apron 0.5 mm lead equiv. 20" x 24"	1 each	99.20