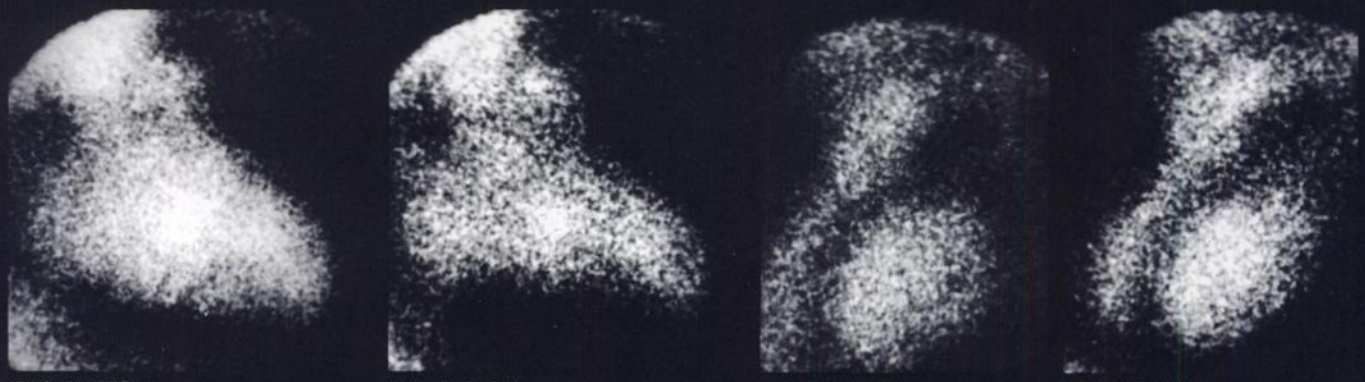
# Sodium Iodide I 123

## for thyroid studies

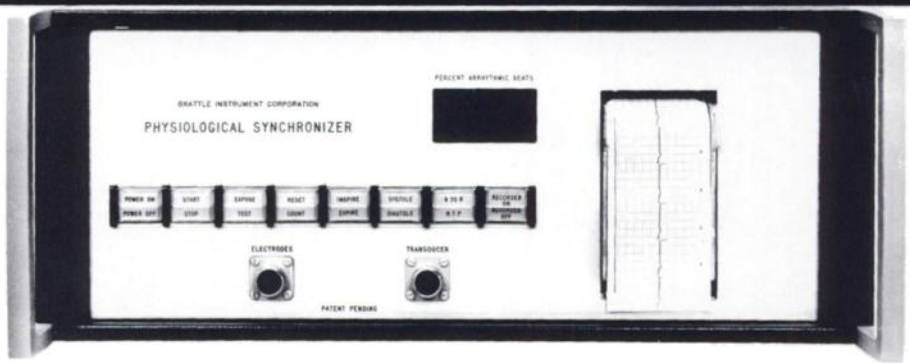
medi+physics™

# Help your cardiologist study heart kinetics non-invasively with Brattle-gated scintiphotos.



RAO, DIASTOLE | RAO, SYSTOLE | LAO, DIASTOLE | LAO, SYSTOLE

The RAO view shows akinesis of the lower antero-lateral wall and apex; and contraction of the inferior wall and high up the antero-lateral wall. The LAO view shows good contraction posteriorly and akinesis of the septal aspect of the chamber. Patient was injected IV with 20mCi of $^{99m}$Tc-labelled Human Serum Albumin. The agent was prepared using the New England Nuclear Electrolysis Kit for labelling HSA. Write or call for a portfolio of Brattle-gated lung, liver and heart studies.




**No knobs, no meters, no errors**
The spartan panel above tells the second-best part of our story. If you want to photograph peak systole, press the SYSTOLE button. If, say, you want systole only at full expiration, press the EXPIRATION button as well. If only breathing is relevant, don't press the heart button.

The Brattle is connected to the patient and to your gamma (or x-ray or ultrasonic) camera. Whenever the patient is in the selected phase, both the scope and the scaler on your gamma camera are gated ON, and film is exposed. Otherwise, they are OFF.

**Brattles lock onto patients—and stay locked on**
It doesn't matter if the patient's heart rate and breathing depth change while he's under the collimator because we stay right with him. Brattles contain an ECG to track heart, a plethysmograph to track respiration, and a tiny computer to deduce systole and diastole times from the heart signal. And because it's all built in, your operator need not be a physiologist.

**We don't cover our tracks—we print them**
The panel lights flash whenever the patient reaches the selected phases; and pushing the RECORDER-ON button gets you an ECG tracing marked with breathing and camera-on times. You can verify function before, during and after exposure.

**A single pair of axillary electrodes captures both heart and breath**
It's easy. And we supply disposable, pre-filled electrodes.

**Some Brattles have been in clinical use for over three years—in community and major hospitals**
More than half of our instruments are in community hospitals and the list is growing rapidly. Upon request, we'll supply names of happy users in your area.

**What's the next step? Get in touch**
Ask your NEN man about Brattles and HSA Kits. He can show you a portfolio of clinical pictures and arrange to have one of our people give you a demo. Or write or call us direct. We'll send you brochures on this and other models, and will give you your own set of clinical pictures and a bibliography on gated scintigraphy. If you wish, we'll even make you a Brattle owner. (This is the best part of our story.)

## Brattle Instrument Corporation

243 Vassar Street • Cambridge, Massachusetts 02139 • 617-661-0300

You are entering a remarkable era of diagnostic advancement. Instead of being limited to a single imaging method, you will take advantage of many techniques, choosing them to meet your specific diagnostic criteria and the condition of your patient.

Searle is helping shape this era of advancement. Over the past decade, guided by your needs, we have developed sophisticated nuclear imaging instruments to a high degree of performance. Now, the knowledge gained during that time is being applied to the creation of instrumentation in the fields of ultrasound and CT scanning.

What Searle developed yesterday in nuclear imaging, the medical community relies on today. And *today* we are planning significant advances in ultrasonic, CT, and nuclear imaging. Tomorrow is in view.

# IMAGING:
## The Living Art

SEARLE

**Searle Radiographics Inc.**
Subsidiary of G. D. Searle & Co.

SR-514

# One of the safest decisions you'll ever have to make...and as easy as 1,2,3.

Consider the benefits of MPI-Iodine-123 and your course of action becomes clear. Don't you and your patients deserve these important benefits?

**Greater patient safety because of reduced radiation absorbed dose.** Substitution of I 131 with MPI-Iodine-123 reduces the absorbed radiation dose more than 24 times to the thyroid gland.

**Compare:**

| Maximal Thyroid Uptake % | Rads/100μCi MPI-Iodine-123 | Rads/100μCi I 131 |
|---|---|---|
| 5 | 1.05 | 26.0 |
| 15 | 3.19 | 80.0 |
| 25 | 5.36 | 130.0 |

**High counting statistics.** MPI-Iodine-123 159 keV gamma rays are detected more than 3 times as efficiently on Anger-type cameras as the 364 keV gamma rays emitted by I 131. You get a higher count rate with MPI-Iodine-123 than with equivalent amounts of I 131 on gamma cameras. Therefore, scintiphotos can be obtained more rapidly.

**Images that demonstrate true thyroid function.** MPI-Iodine-123 is organified by the thyroid so images obtained will depict total thyroid function—not the trapping mechanism alone.

**You save money** when MPI-Iodine-123 is delivered with other Medi-Physics products. Your Medi-Physics representative will be glad to show you how you can receive MPI-Iodine-123 without delivery charges in certain areas. Call for full information about MPI-Iodine-123, our reliable shipping procedures and other products you can receive along with MPI-Iodine-123.

**Use the appropriate toll-free number:**
Outside California 800-227-0483
Inside California 800-772-2446

medi+physics™

**For complete prescribing information consult package insert, a summary of which follows:**

**SODIUM IODIDE I 123**
**CAPSULES AND SOLUTION FOR ORAL ADMINISTRATION**
**DIAGNOSTIC**

**DESCRIPTION:** Sodium iodide I 123 for diagnostic use is supplied as capsules and in vials as an aqueous solution for oral administration. At calibration time each capsule has an activity of 100 microcuries and each vial contains solution with a total specific concentration of 2 millicuries per ml at calibration time.

**INDICATIONS:** Sodium iodide I 123 is indicated for use in the diagnosis of thyroid function and imaging.

**CONTRAINDICATIONS:** None known.

**WARNINGS:** This radiopharmaceutical should not be administered to children or to patients who are pregnant or to nursing mothers unless the information to be gained outweighs the potential hazards. Ideally, examinations using radiopharmaceuticals, especially those elective in nature, in women of childbearing capability should be performed during the first few (approximately 10) days following the onset of menses. However, when studies of thyroid function are clinically indicated for members of these special population groups, use of I 123 would be preferable to the use of I 131 in order to minimize radiation dosage.

**PRECAUTIONS:** Sodium iodide I 123 as well as other radioactive drugs must be handled with care, and appropriate safety measures should be taken to minimize radiation exposure to the patient consistent with proper patient management. The prescribed I 123 dose should be administered as soon as practicable in order to minimize the fraction of radiation exposure due to relative increase of radionuclidic contaminants with time. The uptake of I 123 may be decreased by recent administration of iodinated contrast materials, by intake of stable iodine in any form, or by thyroid, anti-thyroid and certain other drugs. Accordingly, the patient should be questioned carefully regarding diet, previous medication, and procedures involving radiographic contrast media.

**ADVERSE REACTIONS:** There were nine adverse reactions reported in a series of 1,393 administrations. None of these were attributed to I 123. Five adverse reactions, consisting of gastric upset and vomiting, were attributed to a filler in the capsule. Two cases of headache and a case of nausea and weakness were attributed to the fasting state. One case of garlic odor in the breath was presumed to be attributable to the presence of tellurium.

**DOSAGE AND ADMINISTRATION:** The recommended oral dose range for diagnostic studies of thyroid function in the average adult patient (70 kg) is from 100 to 400 microcuries. The patient dose should be measured by a suitable radioactivity calibration system immediately prior to administration. Concentration of I 123 in the thyroid gland should be measured in accordance with standardized procedures.

**SPECIAL CONSIDERATION:** Radiopharmaceuticals should be used only by physicians who are qualified by training and experience in the safe use and handling of radionuclides and whose experience and training have been approved by the appropriate government agency authorized to license the use of radionuclides.

**HOW SUPPLIED:** Sodium iodide I 123 for oral administration is supplied in glass vials and in capsules.

Pho/Gamma® V

# Hewed out of solid tradition

Searle's new Pho/Gamma V is a worthy addition to the proven Pho/Gamma scintillation camera series. Designed for the clinic or laboratory looking for cost-effective instrumentation, the Pho/Gamma V features the advanced, high-speed electronics of the Pho/Gamma LFOV in a standard field of view camera. It also offers a large assortment of parallel-hole, pin-hole, diverging-converging and spot-converging collimators.

**EASE OF OPERATION**

Like the Pho/Gamma LFOV, the Pho/Gamma V has eleven factory pre-set isotope windows for operator convenience. Automatic peaking assures remarkable reproducibility from study to study and from day to day.

**TRIPLE PEAK CAPABILITY**

Window width and energy level can also be set independently on 3 analyzers for unique isotopes and special studies. Thus, your facility can take full advantage of the diagnostic potential in multi-peak nuclides such as Gallium 67. This is especially important in soft-tissue studies where high sensitivity and superior resolution are vital.

**IMPROVED ELECTRONICS**

New ratio correction circuitry allows wider window widths, shortens study times and increases patient throughput. Other electronic innovations include pulse-pair pile-up rejection and event buffering circuitry. As a result, the Pho/Gamma V is capable of count rates up to 200,000 cps, which is sufficient for even highly specialized techniques such as dynamic cardiac studies.

**INSTRUMENTATION BACKED BY SUPERIOR SERVICE**

Searle Service is one of the largest, highly trained Service Organizations in the nation. This trained and knowledgeable group is dedicated to maintaining highest quality instrument performance in your laboratory.

IMAGING:
The Living Art

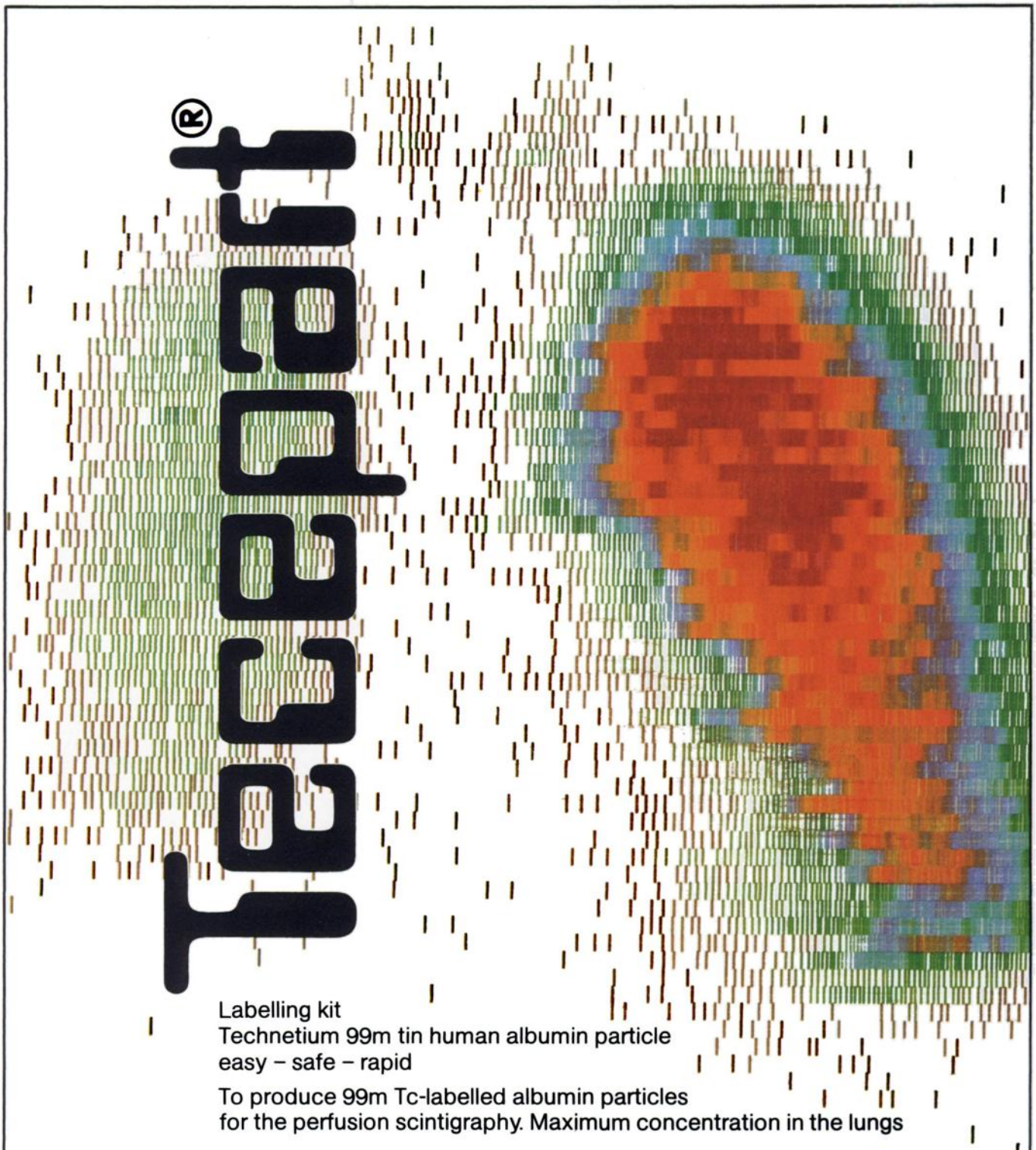
The Pho/Gamma V is the most advanced standard field of view scintillation camera available today. Like other instruments in the famous Pho/Gamma line, it consistently delivers high quality images to give the physician maximum diagnostic support.

*For more information on the Pho/Gamma V system, including the unique Micro Dot™ Imager and Scintiscan™ Whole Body Table, call your Searle representative or write: Searle Radiographics, Inc., 2000 Nuclear Drive, Des Plaines, IL 60018. Telephone: (312) 298-6600.*

SEARLE

**Searle Radiographics, Inc.**
Subsidiary of G. D. Searle & Co.

SR 544




Labelling kit
Technetium 99m tin human albumin particle
easy – safe – rapid

To produce 99m Tc-labelled albumin particles
for the perfusion scintigraphy. Maximum concentration in the lungs

**Storage:**
at room temperature up to 25°C

**Labelling kit:**
12 ml vial with tin-II-human albumin particles, lyophilized

**Specifications of the injection solution:**

Volume: 1–10 ml
Human albumin: 0.25–2.5 mg/ml
$Sn^{2+}$: 0.0045–0.045 mg/ml
NaCl: 9.2–10.8 mg/ml

Technetium-99m: approx. $10^{-6}$ mg/ml
pH: 5–6
Stability: approx. 8 hours
Content of 99m $TcO_4^-$ : < 1% of total activity.

HOECHST

BEHRING INSTITUTE
Behring

Hoechst Aktiengesellschaft
Pharmaceutical Marketing Planning International
D-6230 Frankfurt (Main) 80 · W.-Germany

Lh 87 188

# Think NEN first when it comes to nuclear medicine.


**New England Nuclear**
**Radiopharmaceutical Division**
Atomlight Place, North Billerica, Mass. 01862
Telephone 617-667-9531
Los Angeles: 213-321-3311 Miami: 305-592-0702

Canada: NEN Canada Ltd., Lachine, Quebec, H7T 3C9, Tel: 514-636-4971, Telex: 05-821808
Europe: NEN Chemicals GmbH, D-6072 Dreieichenhain, W. Germany, Daimlerstrasse 26, Postfach 1240. Tel: (06103) 85034.

# GE Formatter

## Now...a formatter that records as fast as the camera can detect.

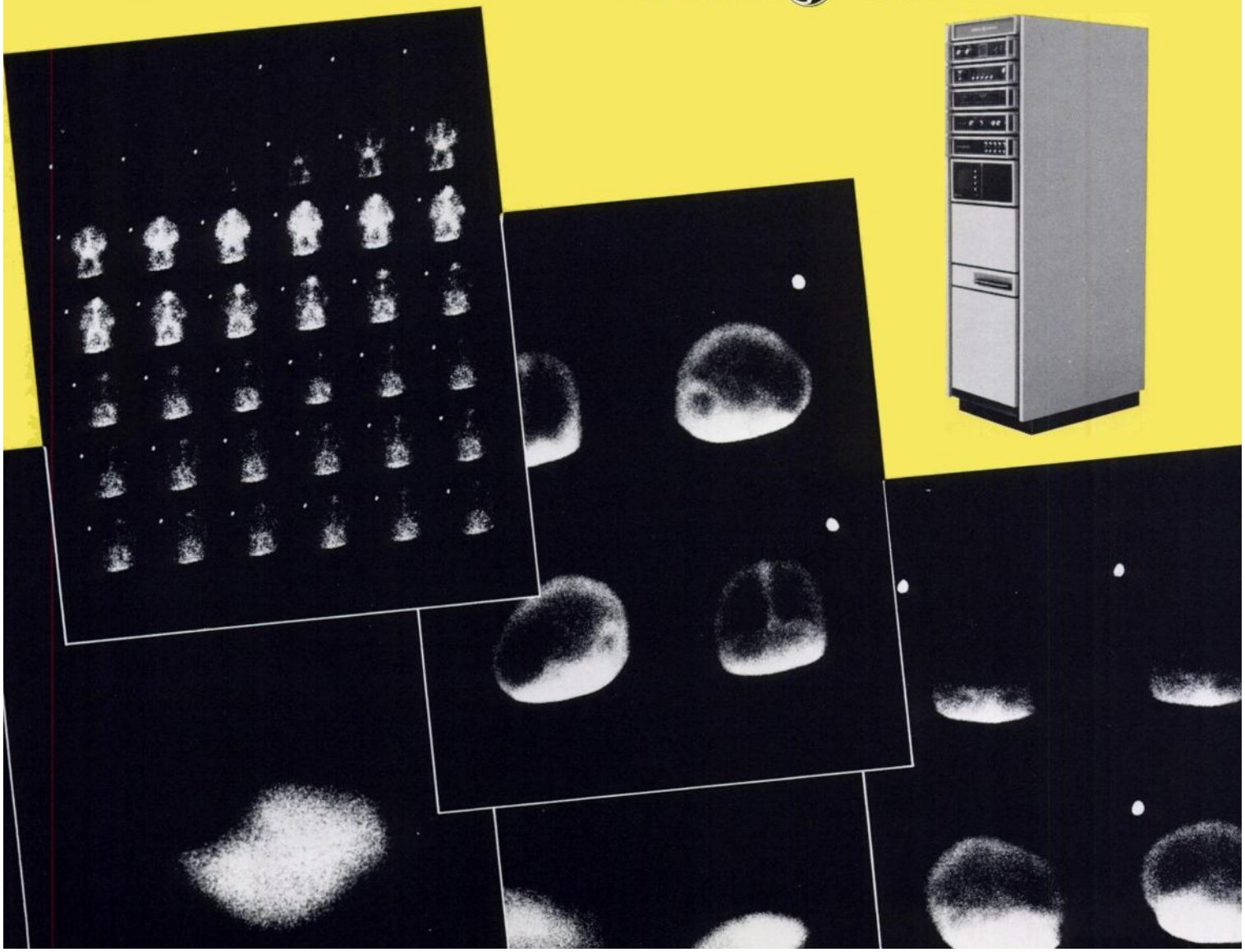
**GE Formatter records 4 times more information per second than any other unit — it's the system of choice for dynamic studies.**

- **10 frames per second** with no data loss — the fastest formatter available.
- **Up to 42 dynamic study images** on one 8 x 10 film.
- **Uses standard 8 x 10 photographic cassettes** — economical, readily available.
- **Standard multiple formats** — 35, 70 and 105 mm.
- **Minimum floor space** — about 4½ square feet. Includes camera and formatter electronics in one compact cabinet.
- **Easy serviceability** with modular design.

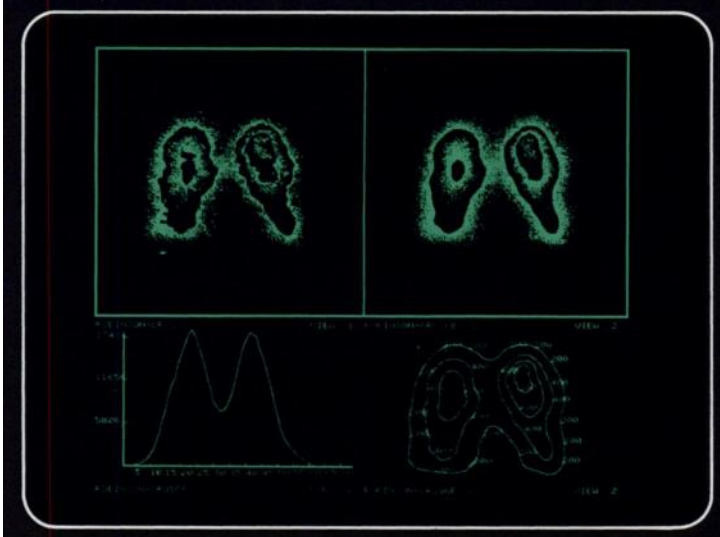
Those are the facts about the GE Formatter . . . the system that helps you get maximum diagnostic data out of every second. Why get anything less? Contact your GE representative.

General Electric Medical Systems, Milwaukee, Toronto, Madrid.

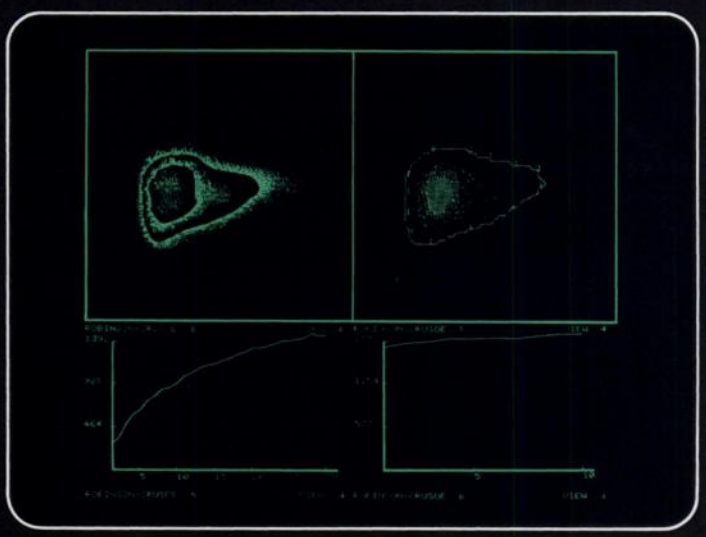
GENERAL ELECTRIC



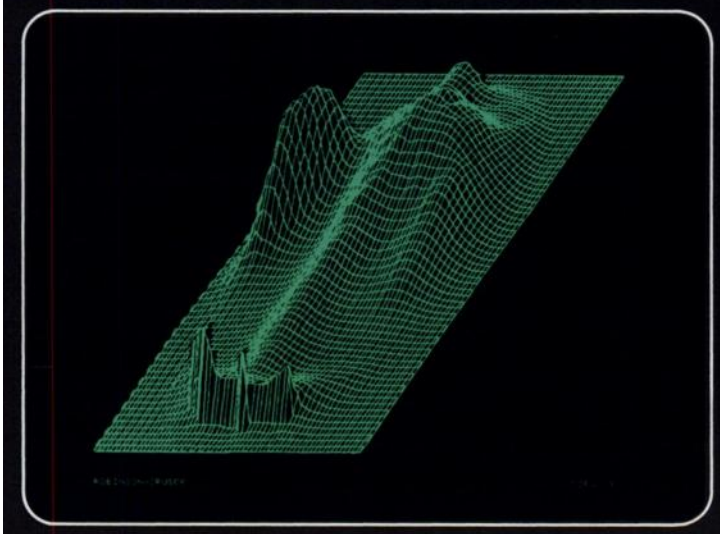
# Advances in High Resolution Storage Displays from varicam



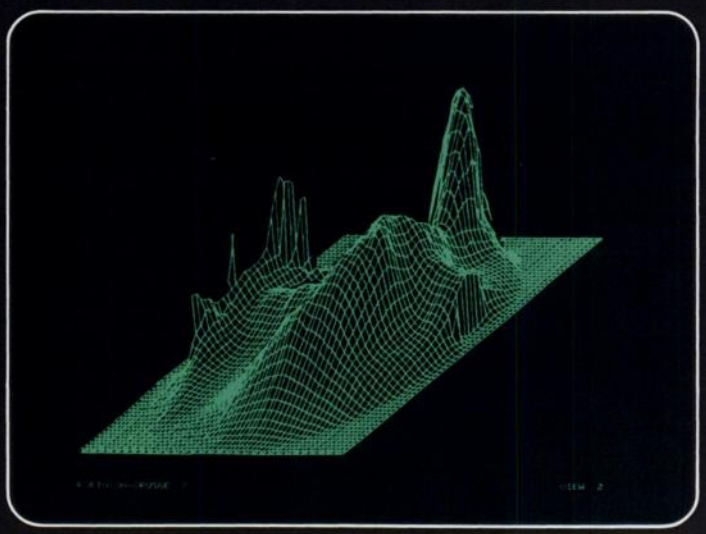
Anterior view of lungs, raw data, variably smoothed data, relative perfusion curve and contours.



Example of output from dynamic protocol including automatic R.O.I. selection.



Isometric view of cirrhotic liver. Perspective 1 (a range of perspectives is available).



Isometric view of cirrhotic liver. Perspective 2 (a range of perspectives is available).


VARICAM's storage monochrome display has been designed to optimize the use of the oscilloscope's potentialities.

The hardware vector generator produces fast lines between points enabling line drawn isometric displays and true isocontour maps.

The hardware character generator enables efficient labelling of all images.

VARICAM's special modification to the storage unit itself results in a large increase in writing speed on the screen, particularly in grey scales.

This enables the use of VARICAM's sophisticated dot density interpolation programs without undue delay.

varian

varian radiation division
611 Hansen Way, Palo Alto, California 94303, USA.
Telephone: (415) 493-4000

European Enquiries: Molesey Road, Walton-on-Thames, Surrey.
England. Telephone: (093 22) 28971 Telex: 261351

# You Told Us You Needed

**High quality images, consistently reproducible, to further increase diagnostic accuracy;**

**High speed data acquisition with minimal loss;**

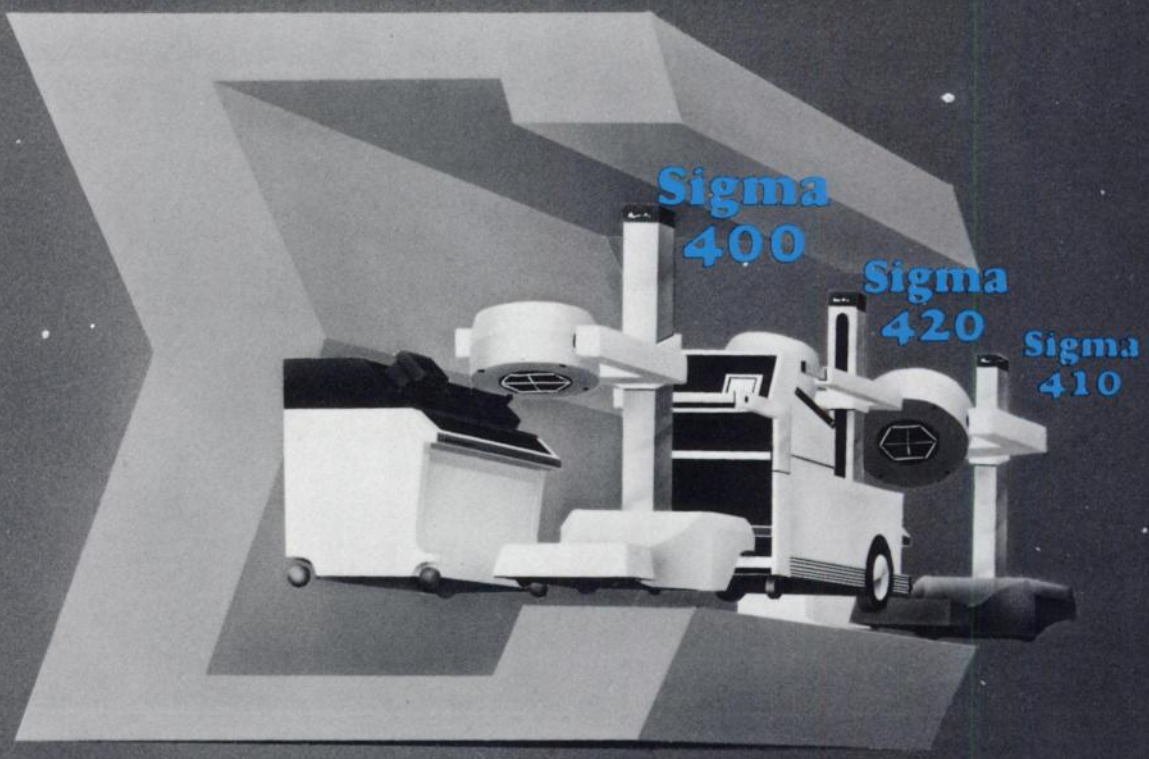
**Simple setup for increased thruput and optimized performance; and**

**Protection against obsolescence.**

# We Have Responded With

# The Sigma Series With MPC

## Micro Processor Control




# We Listened To You.

ohio-nuclear, inc.
A subsidiary of Technicare Corporation

U S — 6000 Cochran Road • Solon Ohio 44139
Telephone (216) 248-8500
TWX 810 427 2696

U K — Ohio-Nuclear U K • Radix House • Central Trading Estate • Staines • Middlesex England
Telephone Staines 51444

Worldwide — Siemens A G Medical Division • D8520 Erlangen • Henkestrasse 127 • West Germany
Telephone 09131 84-1
TWX 841 629 847

# Pho/Gamma® L.E.M.

**Low Energy Mobile Scintillation Camera**

# Designed for a new environment

**MOBILITY AND FLEXIBILITY**
When movement of a critically ill patient is risky... but the diagnostic support of nuclear imaging is indicated, consider Searle's new Pho/Gamma L.E.M. Compact and maneuverable, the L.E.M. can easily be moved to the patient's environment in the emergency room, ICU or CCU where heart, lung, brain and renal studies can be done without compromising patient comfort and safety.

**PROVEN ELECTRONICS**
The L.E.M. has the same high-speed electronics as Searle's proven Pho/Gamma LFOV. It has six factory pre-set isotope windows for operator convenience. Automatic peaking assures remarkable reproducibility from study to study and from day to day. Window width and energy level can be set independently on 2 analyzers for dual-peak isotopes and special studies.

**INCREASED PATIENT THROUGHPUT**
New ratio correction circuitry allows wider window widths, shortens study times and increases patient throughput. Other electronic innovations include pulse-pair pile-up rejection and event buffering circuitry. As a result, the L.E.M. is capable of count rates up to 200,000 cps.

**CHOICE OF COLLIMATORS**
The L.E.M. offers a wide selection of lightweight collimators for optimum resolution under any conditions. With its converging collimation capabilities, it offers significant improvement in resolution of deep-seated structures. Renal studies, for example, yield images of such clarity that it is possible to obtain even oblique views of diagnostic quality.

**TAILORED FOR SPECIAL APPLICATIONS**
In heart imaging, the L.E.M. can be "gated" for systolic or diastolic studies, and the high count rate capability makes it suitable for advanced techniques such as dynamic cardiac imaging. The L.E.M. reveals midline brain lesions with unequalled clarity in static studies with the converging collimator. Parallel-hole and diverging collimation is used for large-area studies, such as lung imaging for pulmonary emboli.

IMAGING:
The Living Art

**INSTRUMENTATION BACKED BY SUPERIOR SERVICE**
Searle Service is one of the largest, highly trained Service Organizations in the nation. This trained and knowledgeable group is dedicated to maintaining highest quality instrument performance in your laboratory.

*For more information about the Pho/Gamma L.E.M., including sample studies, call your Searle representative or write: Searle Radiographics, Inc., 2000 Nuclear Drive, Des Plaines, IL 60018. Telephone: (312) 298-6600.*

SEARLE

**Searle Radiographics, Inc.**
A Subsidiary of G. D. Searle & Co.

SR-537

Contains 0.9% benzyl alcohol as a preservative. Made isotonic with sodium chloride. Supplied at a concentration of 100 μCi/ml and a specific activity of 1 to 6 mCi/mg. Sodium hydroxide or hydrochloric acid may be present for pH adjustment.

# Mallinckrodt's L-Selenomethionine Se 75 Injection

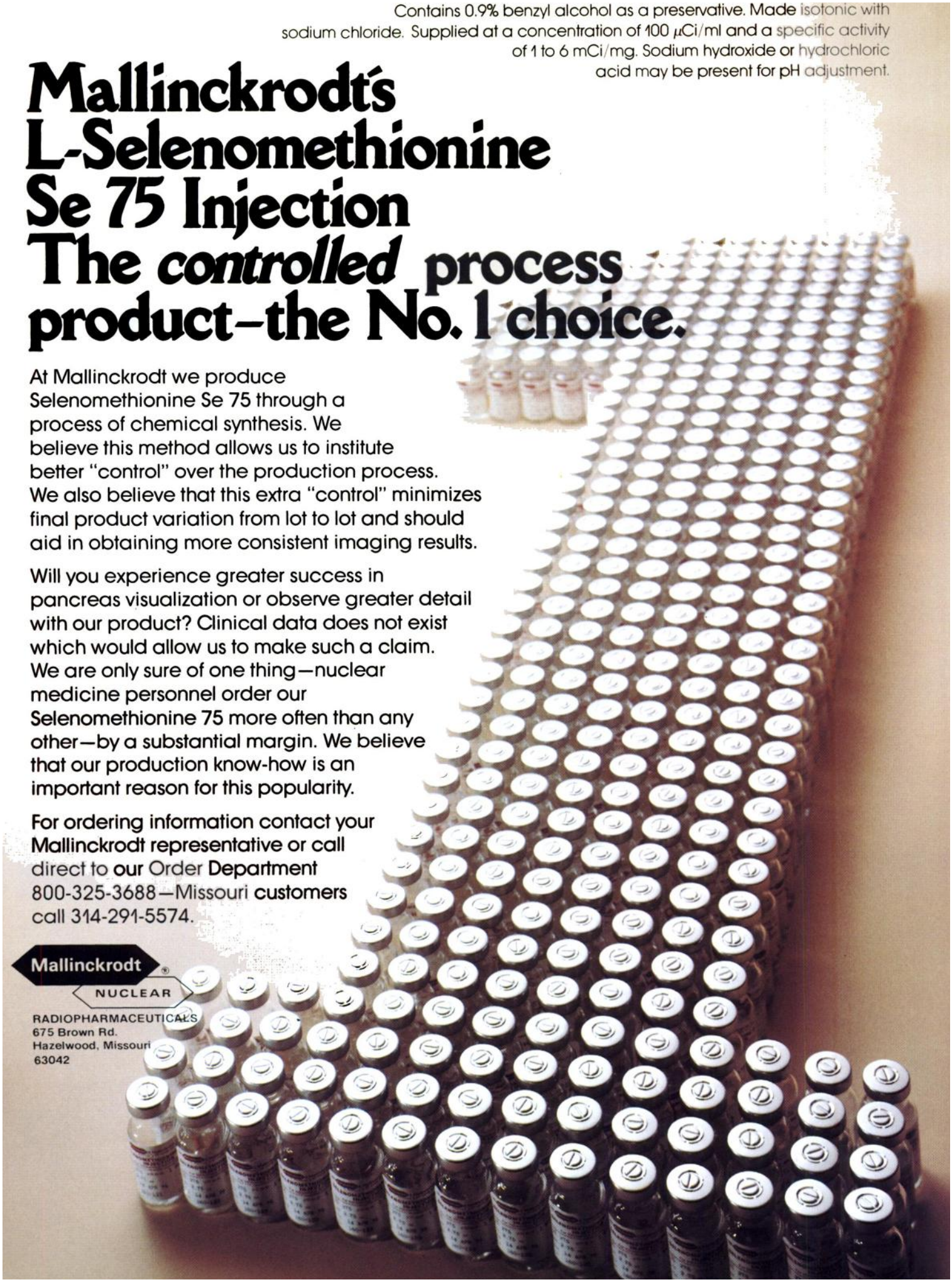
# The *controlled* process product–the No. 1 choice.

At Mallinckrodt we produce Selenomethionine Se 75 through a process of chemical synthesis. We believe this method allows us to institute better "control" over the production process. We also believe that this extra "control" minimizes final product variation from lot to lot and should aid in obtaining more consistent imaging results.

Will you experience greater success in pancreas visualization or observe greater detail with our product? Clinical data does not exist which would allow us to make such a claim. We are only sure of one thing—nuclear medicine personnel order our Selenomethionine 75 more often than any other—by a substantial margin. We believe that our production know-how is an important reason for this popularity.

For ordering information contact your Mallinckrodt representative or call direct to our Order Department 800-325-3688—Missouri customers call 314-291-5574.

Mallinckrodt®
NUCLEAR
RADIOPHARMACEUTICALS
675 Brown Rd.
Hazelwood, Missouri
63042



# L-Selenomethionine Se 75 Injection

## DESCRIPTION
Selenomethionine Se 75 Injection is supplied as a sterile non-pyrogenic aqueous solution containing 0.9% benzyl alcohol as a preservative. The solution is made isotonic with sodium chloride and may contain hydrochloric acid or sodium hydroxide for pH adjustment.

## INDICATIONS
Selenomethionine Se 75 is indicated for pancreas scanning as an aid in the diagnosis of suspected pancreatic disease.

## CONTRAINDICATIONS
None.

## WARNINGS
This radiopharmaceutical should not be administered to patients who are pregnant or during lactation unless the information to be gained outweighs the potential hazards.

Ideally, examinations using radiopharmaceuticals, especially those elective in nature, of a woman of childbearing capability should be performed during the first few (approximately 10) days following the onset of menses.

The transplacental transport and long biologic half-time of this agent may result in significant radiation exposure to the fetus. Since Selenomethionine Se 75 is secreted in milk during lactation, formula feeding should be substituted.

Radiopharmaceuticals should be used only by physicians who are qualified by specific training in the safe use and handling of radionuclides produced by nuclear reactor or particle accelerator and whose experience and training have been approved by the appropriate government agency authorized to license the use of radionuclides.

## PRECAUTIONS
As in the use of any other radioactive material, care should be taken to insure minimum radiation exposure to the patient, consistent with proper patient management, and to insure minimum radiation exposure to occupational workers.

Fasting prior to administration of Selenomethionine Se 75 may enhance hepatic uptake of the agent which may result in degradation of pancreatic image quality.

## ADVERSE REACTIONS
Adverse reactions have not been reported following the administration of Selenomethionine Se 75 Injection.

See package labeling for information on dosage and administration, physical characteristics and radiation dosimetry.

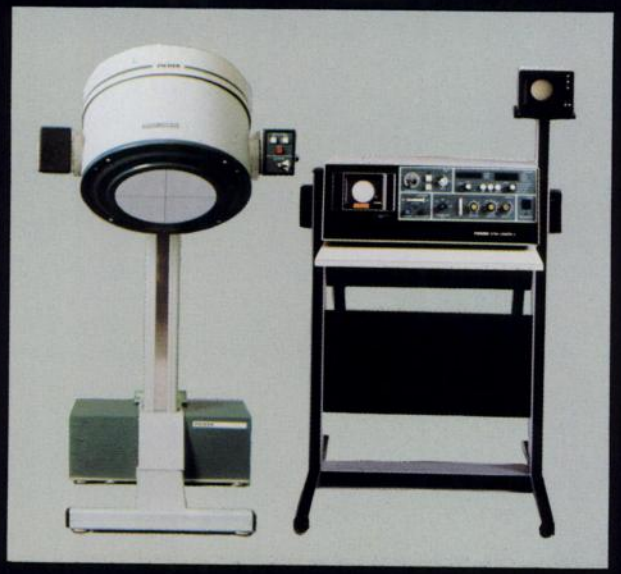
**Mallinckrodt, Inc.**
**675 Brown Rd.**
**Hazelwood, Missouri 63042**

Mallinckrodt® NUCLEAR

**RADIOPHARMACEUTICALS**

# Think bigger.

Lung View, Anterior



Bone View, Posterior

Think about Picker's dynamite 15" detector. This large field size detector images all lung fields and liver/spleen studies in one view without a diverging collimator. Positioning of all organs is easy. And with Omniview® 4, 24" wide whole body studies can be completed quickly with only two passes.

Specially designed photo multiplier tubes, delivering up to 7% greater photocathode area, combined with patented light pipe masking translate into solid 1/8" intrinsic resolution and assured ±10% field uniformity.

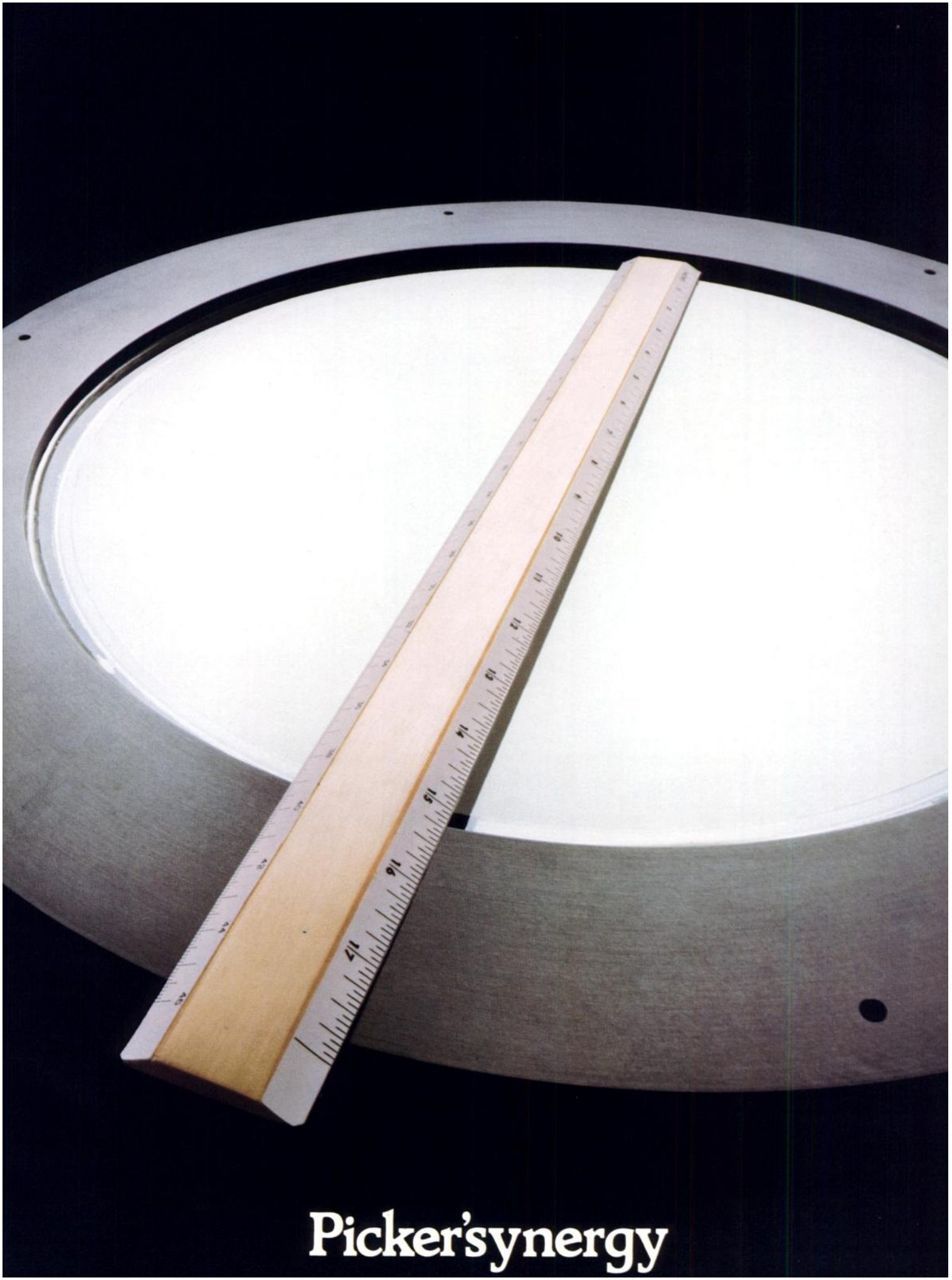
For cerebral and cardiac studies, lung perfusion studies, breast and prostate metastasis visualization, bone imaging, liver/pancreas and kidney studies — in every type of nuclear application, the large field size, high uniformity and exceptional system resolution of the 15" detector, in concert with the dynamite Dyna® Camera family of accessory systems, delivers the kind of results that today's clinicians demand.

This demonstrable quality of our nuclear capabilities is a result of what we call Picker'synergy — the complete interfacing of systems and services for improved diagnostic visualization.

Talk to your Picker representative about the detector that offers you the best combination of field size, uniformity and resolution specifications — Picker's dynamite 15" detector. Or write Picker Corporation, 12 Clintonville Road, Northford, CT 06472.


**PICKER®**

ONE OF THE C.I.T. COMPANIES


Picker'synergy

# What have we done for you lately?


We've developed a dual function radioisotope calibrator . . . one that provides an added measure of confidence with *two* modes of operation:

- ☐ Radiation Exposure Monitoring
- ☐ Radioisotope Calibration

FOR THE NUCLEAR MEDICINE SPECIALIST: The assurance of knowing the measured radiation exposure-rate around the work station . . . hot lab . . . injected patient. This knowledge leads to more rapid and safer handling of radioactive material and the consequent lowering of radiation exposure for the operator.

- ☐ Exposure-Rate Measurements to 20R/hour
- ☐ 0.1 mR/hour Sensitivity
- ☐ Remote Detector Operation

FOR THE PATIENT: The assurance that the administered dose is calibrated to be *exactly* as prescribed.

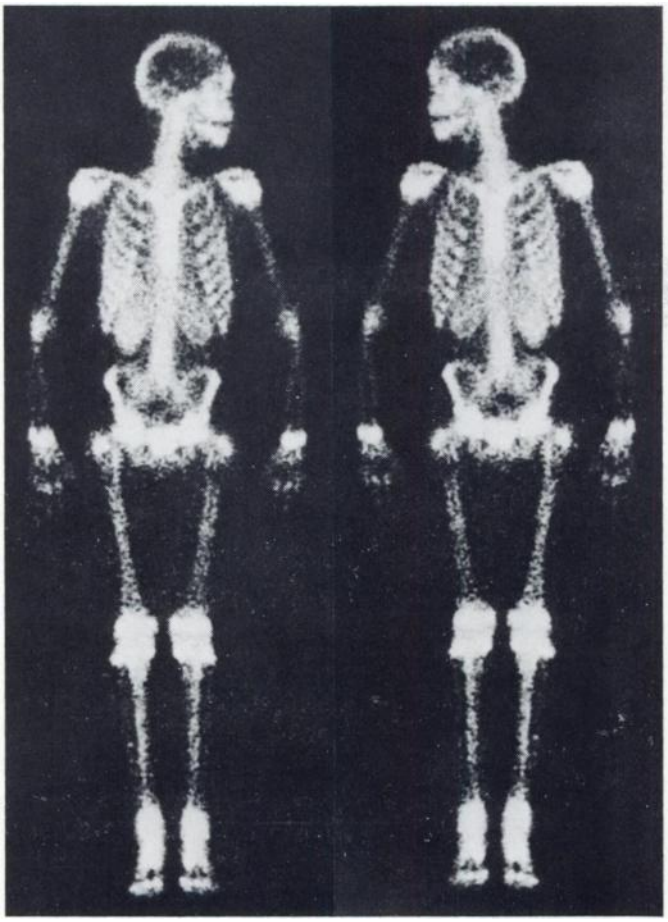
- ☐ 90+ Isotope Calibrations
- ☐ Widest Range (to 20 Ci)
- ☐ Geometry Independence

CAPINTEC, INC.

136 Summit Avenue • Montvale, New Jersey 07645 • (201) 391-3930

"It takes three dual-probe scanners or two cameras to handle the patient load of one cleon."

"Scan-dalous!"



TELEPHONE (617) 444-2494/TELEX 922-552

**cleon**

CORPORATION ...for maximum patient throughput in whole-body imaging.

**SEND FOR THE FACTS:**

**cleon** JNM
CORPORATION
150 Gould Street
Needham, MA 02192

Yes, I'd like to have the facts about the Cleon Whole-Body Imager.

NAME _____

DEPARTMENT _____

INSTITUTION _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____


# ? Lymphoma
# ? Hodgkin's disease
# ? Bronchogenic carcinoma

## Gallium Ga 67:

Now available for routine use as
a non-invasive adjunct in diagnosis.

**Indications and Usage:** Gallium Citrate Ga 67 may be useful to demonstrate the presence and extent of certain malignancies such as Hodgkin's disease, lymphomas, and bronchogenic carcinoma. Positive Ga 67 uptake in the absence of prior symptoms warrants follow-up as an indication of a potential disease state.

**Contraindications:** None known.

**Warnings:** Gallium Citrate Ga 67 should not be administered to children or to patients who are pregnant or to nursing mothers unless the information to be gained outweighs the potential hazards. Ideally, examinations using radiopharmaceutical drug products, especially those elective in nature of a woman of childbearing capability should be performed during the first few (approximately ten) days following the onset of menses.

**Precautions:**

General

A thorough knowledge of the normal distribution of intravenously administered Gallium Citrate Ga 67 is essential in order to accurately interpret pathologic studies.

The finding of an abnormal gallium concentration usually implies the existence of underlying pathology, but further diagnostic studies should be done to distinguish benign from malignant lesions. Gallium Citrate Ga 67 is intended for use as an adjunct in the diagnosis of certain neoplasms. Certain pathologic conditions may yield up to 40% false negative gallium studies. Therefore a negative study cannot be definitively interpreted as ruling out the presence of disease.

Lymphocytic lymphoma frequently does not accumulate Gallium Ga 67 sufficiently for unequivocal imaging; and the use of gallium with this histologic type of lymphoma is not recommended at this time.

Gallium Citrate Ga 67, as well as other radioactive drugs, must be handled with care and appropriate safety measures should be used to minimize external radiation exposure to clinical personnel. Also, care should be taken to minimize radiation exposure to patients consistent with proper patient management.

Carcinogenesis

No long term animal studies have been performed to evaluate carcinogenic potential.

Pregnancy Category C

Adequate reproduction studies have not been performed in animals to determine whether this drug affects fertility in males or females, has teratogenic potential, or has other adverse effects on the fetus. Gallium Citrate Ga 67 should be used in pregnant women only when clearly needed.

Nursing Mothers

Gallium Citrate Ga 67 has been found to accumulate in breast milk and should not be used in nursing mothers.

Pediatric Use

Safety and effectiveness in children have not been established.

**Adverse Reactions:** Severe itching, erythema and rash were observed in one patient of 300 studied.

**Dosage and Administration:** The recommended adult (70kg) dose of Gallium Citrate Ga 67 is 2-5mCi. Gallium Citrate Ga 67 is intended for intravenous administration only.

Approximately 10% of the administered dose is excreted in the feces during the first week after injection. Daily laxatives and/or enemas are recommended from the day of injection until the final images are obtained in order to cleanse the bowel of radioactive material and minimize the possibility of false positive studies.

Studies indicate the optimal tumor to background concentration of ratios are often obtained about 48 hours post-injection. However, considerable biological variability may occur in individuals, and acceptable images may be obtained as early as 6 hours and as late as 120 hours after injection.

The patient dose should be measured by a suitable radioactivity calibration system immediately prior to administration.

Radiopharmaceuticals should be used by persons who are qualified by specific training in the safe use and handling of radionuclides produced by nuclear reactor or particle accelerator and whose experience and training have been approved by the appropriate government agencies authorized to license the use of radionuclides.

**How Supplied:** Gallium Citrate Ga 67 is supplied sterile and non-pyrogenic for intravenous use. Each ml contains 2mCi of Gallium Ga 67 on the calibration date, as a complex formed from 9ng gallium chloride Ga 67, 2mg of sodium citrate, 6.8mg sodium chloride, and 0.9% benzyl alcohol w/v as preservative. The pH is adjusted to between 4.5-7.5 with hydrochloric acid and/or sodium hydroxide solution.

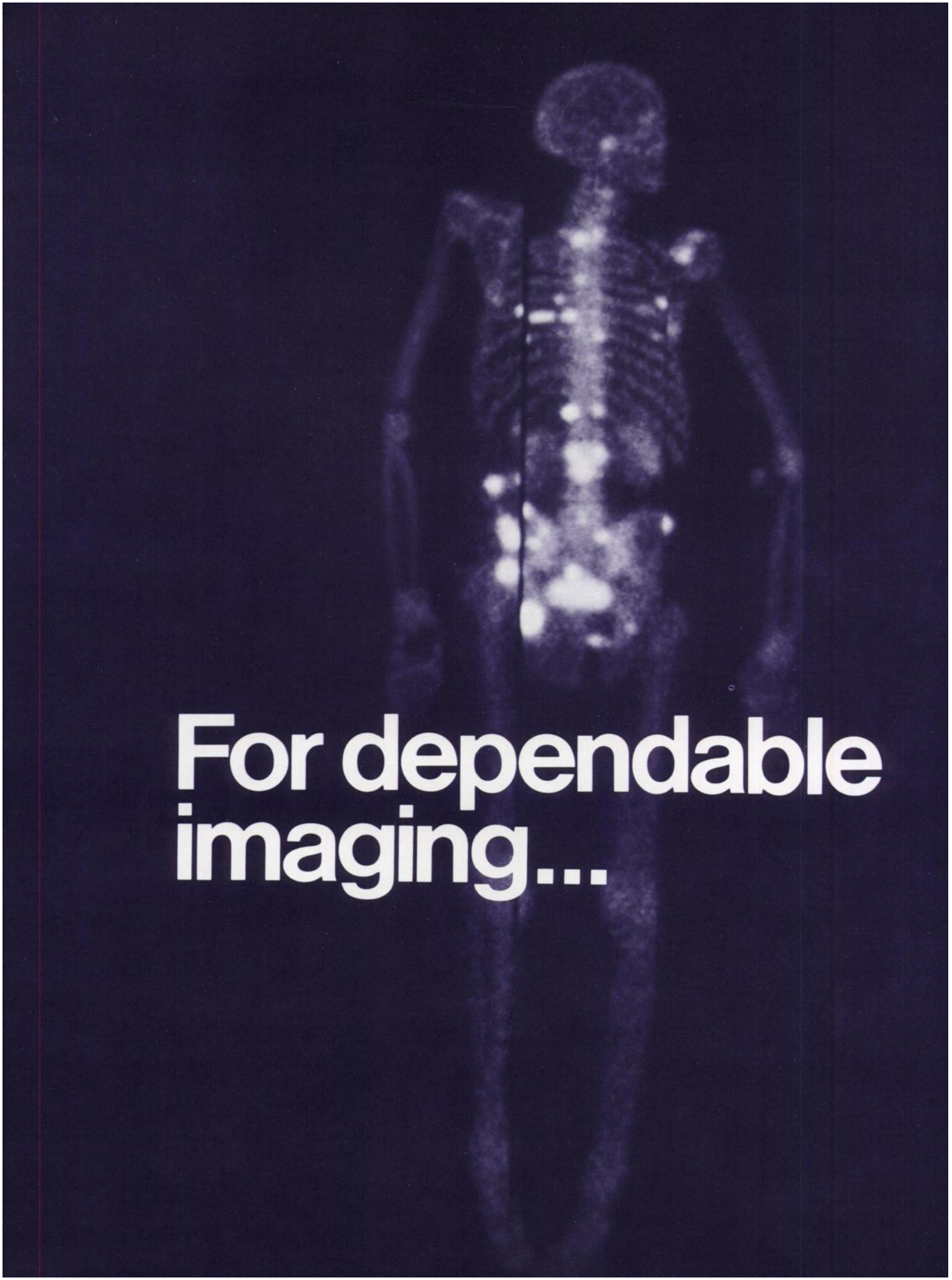
Vials are available from 3mCi to 18mCi in increments of 3mCi on calibration date.

**The contents of the vial are radioactive and adequate shielding and handling precautions must be maintained.**

**CAUTION:** Federal (U.S.A.) law prohibits dispensing without prescription.

NEN **New England Nuclear**
**Radiopharmaceutical Division**
Atomlight Place, North Billerica, Mass. 01862
Telephone 617-667-9531
Los Angeles: 213-321-3311 Miami: 305-592-0702

Canada. NEN Canada Ltd., 2453 46th Avenue, Lachine, Quebec, H7T 3C9, Tel: 514-636-4971, Telex: 05-821808
Europe: NEN Chemicals GmbH, D-6072 Dreieichenhain, W. Germany, Daimlerstrasse 23, Postfach 1240. Tel: (06103) 85034.


For dependable
imaging...

Dependable imaging of skeletal lesions —that's what bone scanning is all about. And that's what the unique, dry-mix formulation and stable PCP bond of Osteoscan assure. Osteoscan's diphosphonate formulation, when labeled with $^{99m}$Tc, provides:

- ☐ dependably high tagging efficiency
- ☐ rapid blood and soft tissue clearance to assure high target-to-nontarget ratio
- ☐ excellent in vivo stability
- ☐ low tin level—to minimize the potential for liver uptake and interference with subsequent brain scans

For further information about Osteoscan, please contact: Arnold Austin, Technical Manager, Professional Services Division, Procter & Gamble (513) 977-8547.

# the dependable diphosphonate

PROCTER & GAMBLE

# OSTEOSCAN®

(5.9 MG DISODIUM ETIDRONATE, 0.16 MG STANNOUS CHLORIDE)

SKELETAL IMAGING AGENT

In Europe, contact: Philips-Duphar B.V.,
Cyclotron and Isotope Laboratories, Petten, Holland.

See following page for a brief summary of package insert.

PROCTER & GAMBLE

# OSTEOSCAN®

(5.9 MG DISODIUM ETIDRONATE, 0.16 MG STANNOUS CHLORIDE)

SKELETAL IMAGING AGENT


## PRODUCT INFORMATION

Before using, please consult the full Package Insert included in each kit.

## DESCRIPTION

Each vial of OSTEOSCAN contains 5.9 mg disodium etidronate and 0.16 mg stannous chloride as active ingredients. Upon addition of ADDITIVE-FREE $^{99m}$Tc-pertechnetate, these ingredients combine with $^{99m}$Tc to form a stable soluble complex.

## ACTIONS (CLINICAL PHARMACOLOGY)

When injected intravenously, $^{99m}$Tc-labeled OSTEOSCAN has a specific affinity for areas of altered osteogenesis. Areas of bone which are undergoing neoplastic invasion often have an unusually high turnover rate which may be imaged with $^{99m}$Tc-labeled OSTEOSCAN.

Three hours after intravenous injection of 1 ml $^{99m}$Tc-labeled OSTEOSCAN, an estimated 40-50% of the injected dose has been taken up by the skeleton. At this time approximately 50% has been excreted in the urine and 6% remains in the blood. A small amount is retained by the soft tissue. The level of $^{99m}$Tc-labeled OSTEOSCAN excreted in the feces is below the level detectable by routine laboratory techniques.

## INDICATIONS

OSTEOSCAN is a skeletal imaging agent used to demonstrate areas of altered osteogenesis.

## CONTRAINDICATIONS

None.

## WARNINGS

This radiopharmaceutical should not be administered to patients who are pregnant or lactating unless the information to be gained outweighs the potential hazards.

Ideally, examinations using radiopharmaceuticals, especially those elective in nature, of a woman of childbearing capability should be performed during the first few (approximately 10) days following the onset of menses.

Radiopharmaceuticals should be used only by physicians who are qualified by specific training in the safe use and handling of radionuclides produced by nuclear reactor or particle accelerator and whose experience and training have been approved by the appropriate government agency authorized to license the use of radionuclides.

The $^{99m}$Tc-generator should be tested routinely for molybdenum breakthrough and aluminum. If either is detected, the eluate should not be used.

## PRECAUTIONS

Both prior to and following $^{99m}$Tc-labeled OSTEOSCAN administration, patients should be encouraged to drink fluids. Patients should void as often as possible after the $^{99m}$Tc-labeled OSTEOSCAN injection to minimize background interference from accumulation in the bladder and unnecessary exposure to radiation.

As in the use of any other radioactive material, care should be taken to insure minimum radiation exposure to the patient, consistent with proper patient management, and to insure minimum radiation exposure to occupational workers.

## ADVERSE REACTIONS

None.

## DOSAGE AND ADMINISTRATION

The recommended adult dose of $^{99m}$Tc-labeled OSTEOSCAN is 1 ml with a total activity range of 10-15 mCi. $^{99m}$Tc-labeled OSTEOSCAN should be given intravenously by slow injection over a period of 30 seconds within eight (8) hours after its preparation. Optimum scanning time is 3-4 hours postinjection.

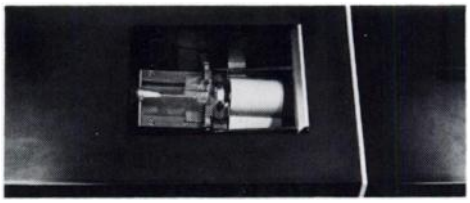
The patient dose should be measured by a suitable radioactivity calibration system immediately prior to administration.

# CintiChem™

Automated $^{99m}$Tc Unit-Dose Delivery System

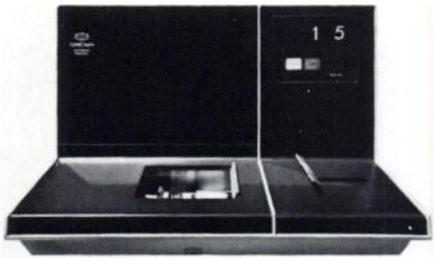
## Systematically safer.

Organ-specific agents for optimum imaging of brain, kidney, bone and lung, and for glomerular filtration rate studies, are provided in kits containing 10 unit-dose vials. Each kit is single step, requiring only addition of technetium to produce the scanning agent.



Preselected amount of $^{99m}$Tc activity is automatically dispensed into vial, then diluted with saline to 1.3 ml. Entire dispense/dilute cycle is automatic and shielded, and is completed within 75 seconds.

Unit-dose vial is entered only once for technetium delivery, once for agent withdrawal. Shielded syringe assembly automatically centers disposable syringe with vial. A 1.0-ml patient injection is reproducibly withdrawn into syringe.




Dispenser fully automates isotope measurement, reagent transfer and dose calibration. Eliminates time-consuming manual steps, computations and potential radiation exposure.

UNION CARBIDE

# Delivering the future in imaging agents:

The CINTICHEM System, a total unit-dose $^{99m}Tc$ delivery system...

- ☐ Simplifies radionuclide delivery
- ☐ Improves dosage accuracy and reproducibility
- ☐ Reduces radiation burden
- ☐ Permits precise, contaminant-free administration of agents
- ☐ Reduces labor and cost per test
- ☐ Simplifies record keeping and calculations

The CINTICHEM System includes: an automated technetium dispenser, a high-yield molybdenum 99/technetium 99m generator, organ-specific kits and a unique unit-dose shielded syringe assembly. All integrated for the preparation of sterile, pyrogen-free radiodiagnostic agents—precisely, reliably and with greatly reduced radiation burden to the user.

The CINTICHEM Dispenser automatically delivers a preselected amount of $^{99m}Tc$ activity ($TcO_4^-$ in saline) into a single-use unit-dose vial. Vial contents are transferred to a disposable syringe via a shielded syringe assembly that permits reproducible withdrawal of a 1.0-ml patient dose.

The CINTICHEM Generator is an optimized, advanced-technology $^{99m}Tc$ generator. It offers exceptionally high yields and is available in 500-, 1,000-, 1,500- and 2,000-mCi sizes. (Sodium pertechnetate $^{99m}Tc$ in isotonic saline.)

A series of organ-specific CINTICHEM Agents incorporates optimum current formulations for organ specificity. Each kit contains 10 unit-dose vials. (Kits containing five multidose vials are also available.) Each kit is single step. Requires only the addition of technetium to produce the imaging agent. And the CINTICHEM Dispenser performs this step automatically.

Kits currently available include: DTPA (diethylene triamine pentaacetic acid [calcium trisodium salt]). For brain and kidney imaging, and glomerular filtration rate (GFR) studies. Unit dose contains 3.3 mg $CaNa_3$ DTPA, 0.17 mg $SnCl_2$-$2H_20$, pH adjusted to 4 with HCl. HEDSPA (1-hydroxy-ethylidene-1,1 disodium phosphonate). For bone imaging. Unit dose contains 0.75 mg HEDSPA, 0.08 mg stannous ion as tartrate, pH adjusted to 4 with HCl. MAA (macroaggregated albumin). For lung perfusion studies. Unit dose contains 0.11 mg MAA ($0.3\text{-}1.3 \times 10^6$ particles), 0.09 mg stannous tartrate, isotonic saline. HCl and Na0H may be present for pH adjustment. Additional radiopharmaceuticals will also be offered.

Let us send detailed data on the CINTICHEM System. Simply return the coupon and we'll come back with a glimpse into the future.

**CintiChem™**
**Systematically safer.**

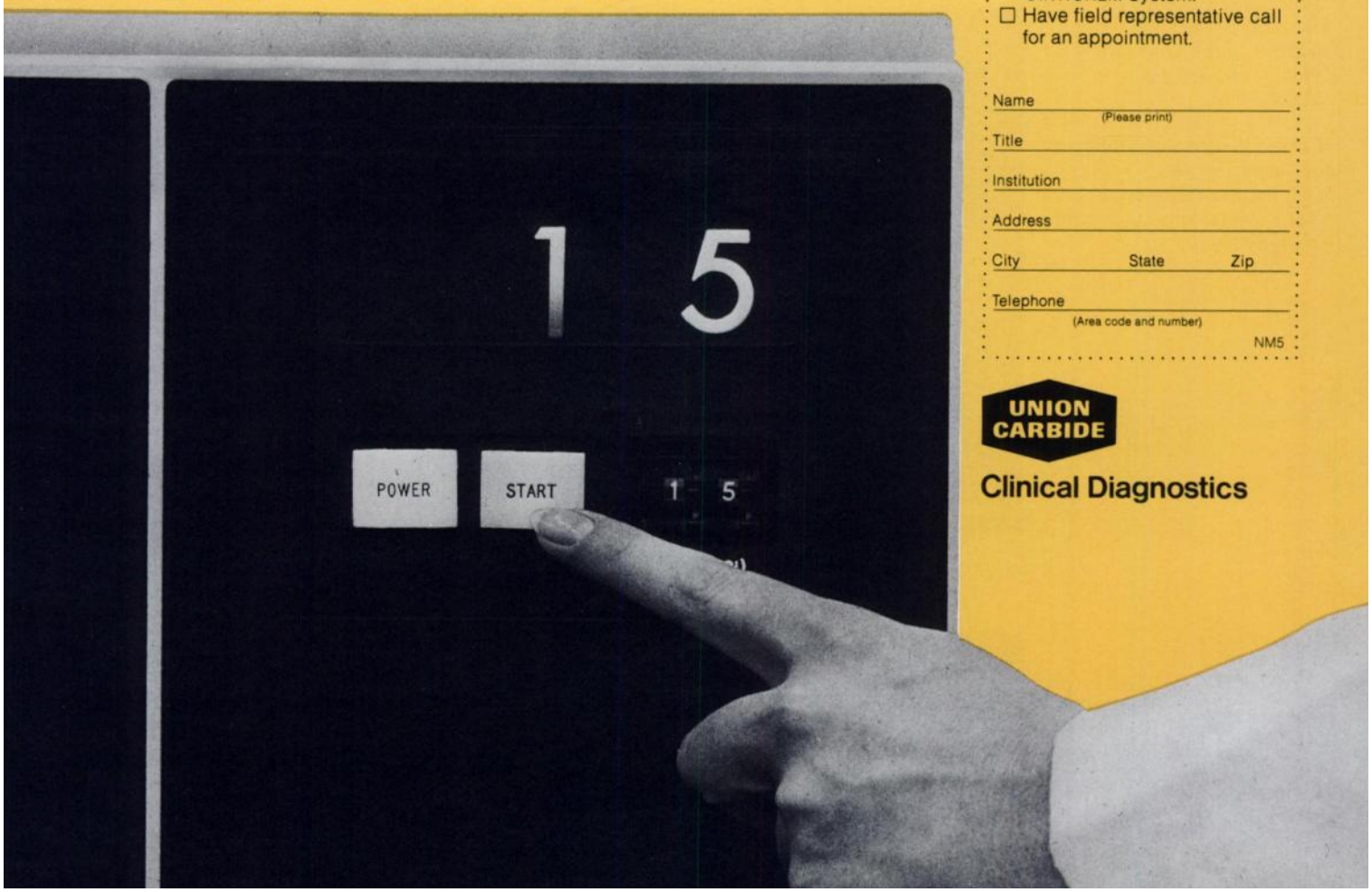
Union Carbide Corporation
Clinical Diagnostics
401 Theodore Fremd Avenue
Rye, New York 10580

- ☐ Send brochure on the CINTICHEM System.
- ☐ Have field representative call for an appointment.

Name _____
(Please print)
Title _____
Institution _____
Address _____
City _____ State _____ Zip _____
Telephone _____
(Area code and number)
NM5

UNION CARBIDE
**Clinical Diagnostics**

# Unit-dose.



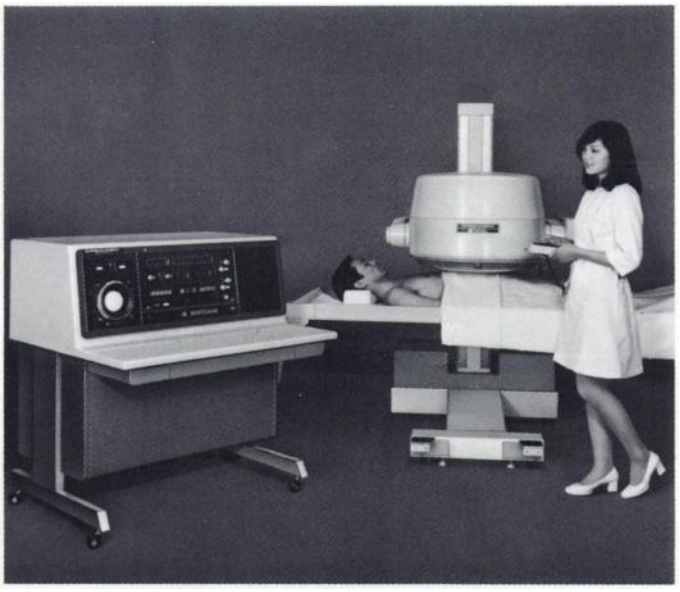
# Why All the Interest in Toshiba's Newest Jumbo Gammacamera?

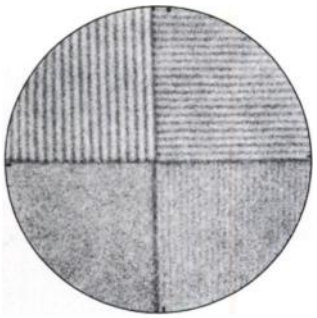
**Since its introduction at the First World Congress of Nuclear Medicine, our newest high performance delay line Gammacamera, GCA-401, has been generating world-wide interest. In fact, several sets have been, or soon will be installed in Europe, Australia, and Japan. The features that make this unit so attractive include:**

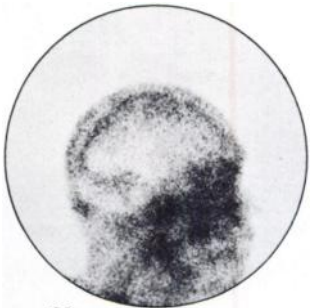
- High intrinsic resolving capability (3.2mm lead pattern using $^{99m}$Tc.)
- 35cm usable field of view, large enough to image both lungs or a large organ.
- Programable setting of measuring conditions
- Compact, easy-to-operate control console
- Adaptable for whole-body-imaging
- Compatible with any data processing system
- Reliability assured through utilization of Toshiba's world renowned IC electronics

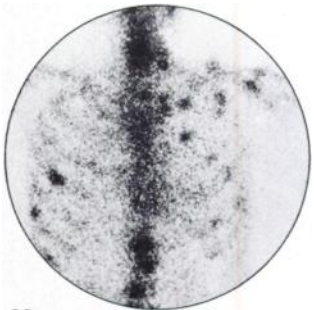
**If we've caught your interest too, please write.**
**We'll be pleased to send you all the information you need on the GCA-401.**

GCA-401




**Intrinsic Resolution**
$^{57}$Co 999 K-counts,
Window; 20%
Pb-Bar pattern; 2.4, 3.2, 4.0, 4.8 mm


$^{99m}$Tc-DTPA, 24m Ci,
300 K-counts, Window; 20%
Collimator; High resolution.


$^{99m}$Tc-pyrophosphate, 13m Ci,
200 K-counts, Window: 20%
Collimator; High resolution.

Toshiba **TOSHIBA**
**TOKYO SHIBAURA ELECTRIC CO., LTD.**

Producer Goods Export Division
1-6, Uchisaiwaicho 1-chome, Chiyoda-ku, Tokyo, 100 Japan
Cable: TOSHIBA TOKYO Telex: J22587 TOSHIBA Phone: 501-5411

# Continuing Leadership

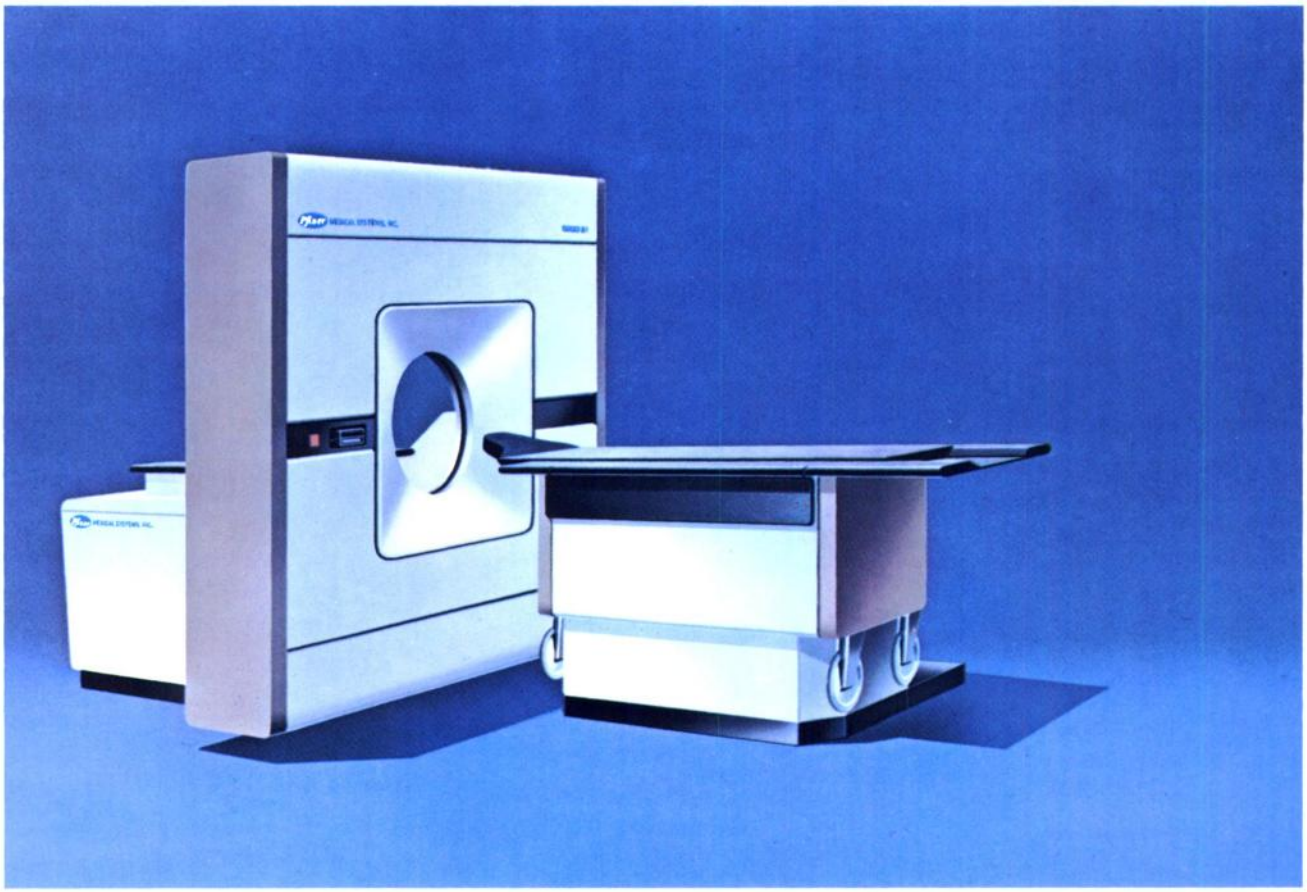
# Now...

**The Pfizer ACTA-Scanner® was the world's first whole body scanner.**

Since it was first put into clinical use—in February 1974—the ACTA-Scanner has been used for head and whole body scanning in thousands of patients at the Georgetown University Medical Center, the original development site.

It has also been used in additional thousands of patient procedures in such institutions as the University of Minnesota Hospitals, Thomas Jefferson University Hospital, Yale-New Haven Hospital, Lahey Clinic Foundation and Mount Zion Hospital in San Francisco.

ACTA-SCANNER

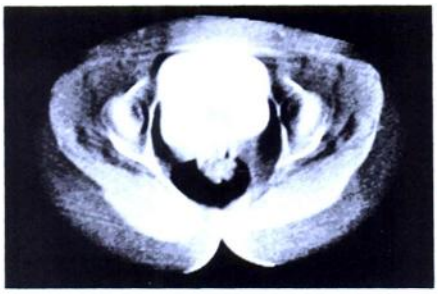


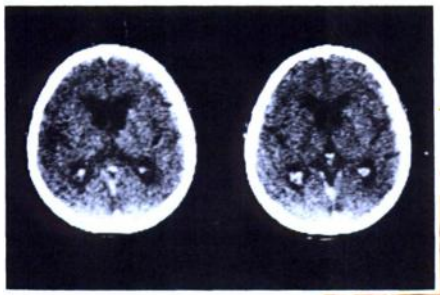
# Now...

Pfizer **MEDICAL SYSTEMS, INC.**
A SUBSIDIARY OF PFIZER INC.

## ACTA-SCANNER®

## 0200 & 0200FS



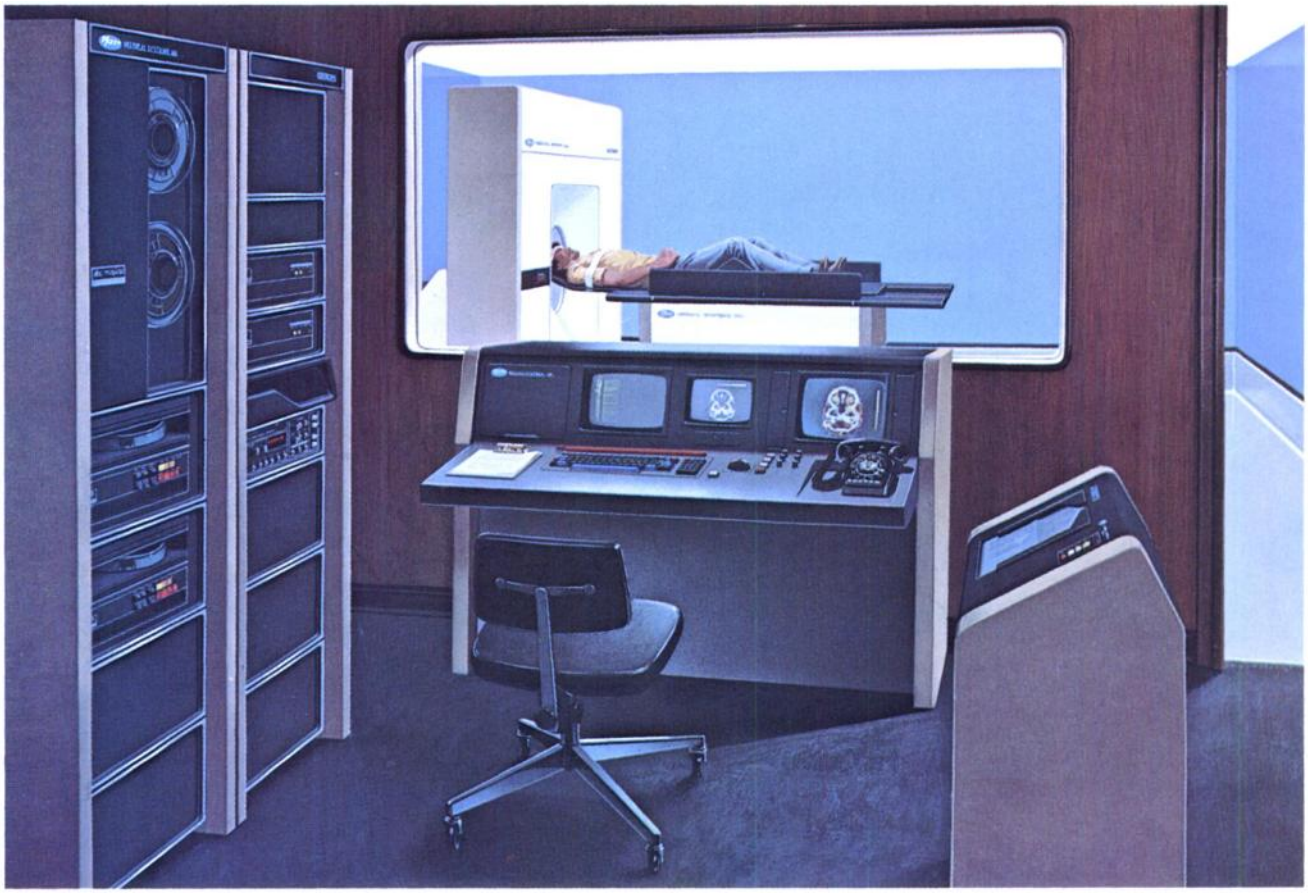


From the very beginning, Pfizer Medical Systems has been aware that growing clinical experience and continuing research would dictate certain refinements and improvements in computerized tomography. Pfizer is determined to be in the forefront of such developments and to make them available as economically as possible.

The first result of this effort is the ACTA-Scanner 0200, which incorporates a more efficient and comfortable patient handling system and an advanced computer system, firmly establishing a modular approach to changing technology. The 0200 user will be able to convert to the 0200FS when available. The 0200FS will enable completion and display of a scan in less than 30 seconds. Other operating refinements are described on the next page.

**This modularity, of course, will make the advanced features of the 0200FS just as readily available to current as well as prospective users.**

Pfizer **MEDICAL SYSTEMS, INC.**
A SUBSIDIARY OF PFIZER INC.



# Distinguishing Features

Pfizer **MEDICAL SYSTEMS, INC.**
A SUBSIDIARY OF PFIZER INC.

## ACTA-SCANNER®
## 0200 & 0200FS

### Operation and Control Advances

- Under 30-second scan time minimizes artifacts and increases patient throughput
- Three matrices standard—160,256,320
- Industry compatible CT numbering system allows universal comparisons
- Advanced computer system
- Light beam guided patient positioning
- Variable scan slice thickness adjustment
- Tiltable gantry (±20°) for increased flexibility of scan position
- 22" tunnel diameter to accommodate most patients
- Area of interest analyses

### Versatile Patient Record System

- *For data storage*—(1) magnetic tape, for low cost mass storage; (2) optional "floppy" disc for easy filing of individual patient scan data
- *For photographic recording*—(1) 105 mm roll or cut film; (2) Polaroid® copies; (3) Multiformat Scan Recorder (optional)

### Advanced Patient Handling System

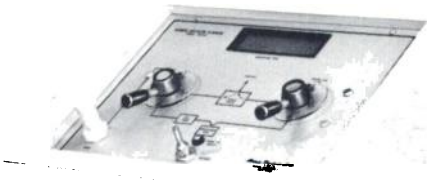
- Interchangeable bed modules allow maximum patient throughput
- Bed modules may be rolled to patient rooms, simplifying patient transfers
- Head supports on each bed module allow pre-positioning and immobilization
- Human-engineered for increased patient comfort
- Power mechanism raises bed module and locks it into position
- Movements of bed module are remotely controlled after lock-in

### Continuing Features

- 320 matrix
- Instant image reconstruction—**including 0200FS**
- Pfizer commitment to customer service
- 12 month warranty—labor, parts including tube
- Color and black-and-white viewing
- Selective enlargement

**FULL FUNCTION**

# XENON SYSTEM FOR LESS THAN $1600.



**The APC Economy Xenon System fills the void between disposable bag units and automated gas handling equipment.**

- **Completely shielded**
- **Adjustable flow rate**
- **Resistance free breathing**
- **Accepts any external xenon source**
- **Performs all regional ventilation studies**

- **Easy to use**
- **Washout timer**
- **Permanent charcoal cartridge**
- **Exceeds all NRC/State requirements**

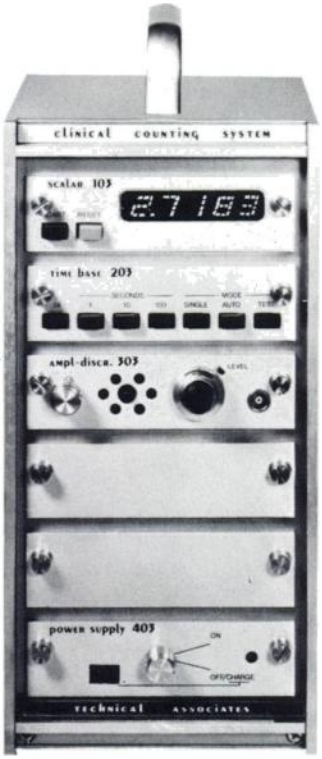
**Total performance... at an affordable price.**

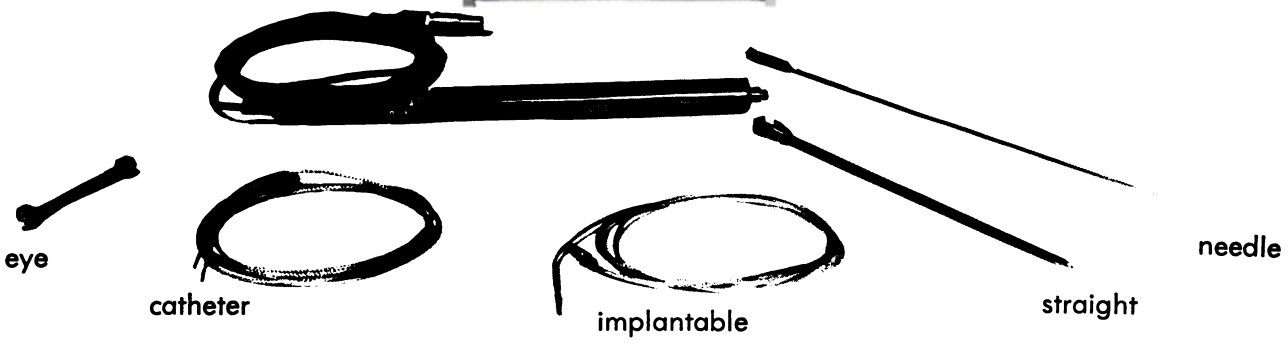
## Atomic Products Corporation

Center Moriches, New York 11934, U.S.A.
(516) 878-1074

# the proven clinical counting system

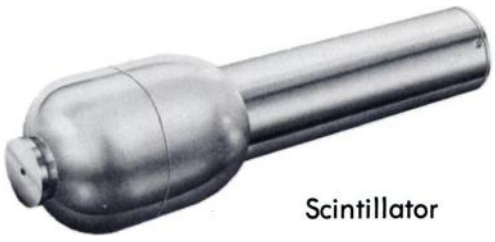
**NEW**
**Thrombus Detectors**
write for details




## Solid State Probes

G.I.



Scintillator

- Operating room design
- In vivo use
- Single, dual and multiple or matrix detectors
- Intracavitary, intraorgan, or surface
- Real time information
- Chart, printer, and computer compatible

**TECHNICAL ASSOCIATES**

7051 ETON AVE., CANOGA PARK, CA. 91303
(213) 883-7043

# NEW IMPROVED SIMPLIFIED [$^{57}$Co] VITAMIN $B_{12}$ [$^{125}$I] FOLATE RADIO ASSAY KITS

| | $^{57}$Co Vitamin $B_{12}$ | $^{125}$I Folate |
|---|---|---|
| **FEATURING:** | | |
| • SUPERSENSITIVITY | 33 pg | 0.1 ng |
| • LINEAR RANGE | 100 - 2,400 pg/ml | 1 - 32 ng/ml |
| • TOTAL INCUBATION TIME | 45 minutes | 45 minutes |
| • PRECISION (within-run) C.V. | 3.5% | 3% |
| • PRECISION (run-to-run) C.V. | 6% | 7% |

- LINEAR PLOT (log-logit paper provided)
- SEPARATION BY CHARCOAL-DEXTRAN *TABLET*
- PRE-MEASURED INDIVIDUAL CALIBRATORS
- LYOPHILIZED REAGENTS
- BUFFER INCLUDED (requires only $H_2O$)
- RELIABILITY AND ECONOMY
- EXCELLENT RECOVERY
- ONLY ONE PIPETTING AND TWO DISPENSATION STEPS REQUIRED PER TUBE.

**Kits Also Available:**

T-3 RIA
T-4 RIA
[$^{3}$H] Folic Acid
[$^{3}$H] Aldosterone (no Chromatography)
[$^{3}$H] Cortisol RIA
[$^{3}$H] Cyclic AMP
[$^{3}$H] Cyclic GMP
[$^{125}$I] Gentamicin RIA
[$^{125}$I] Cortisol RIA


**Diagnostic Products CORPORATION**

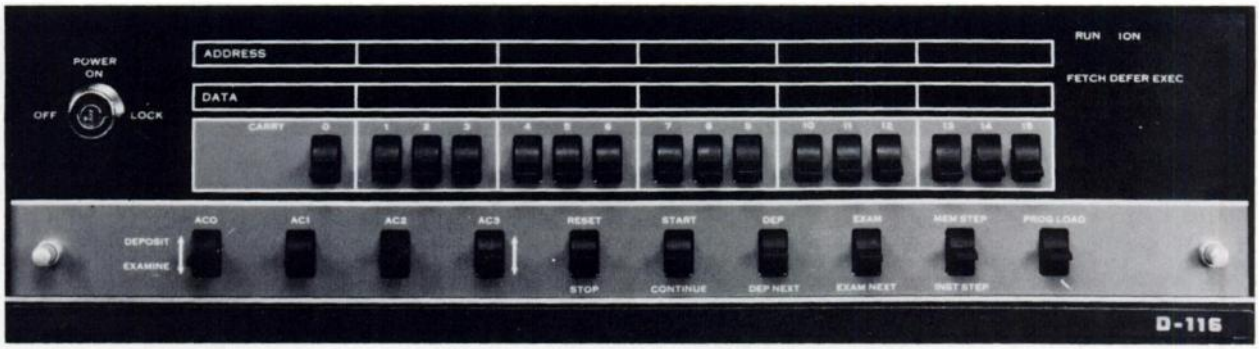
12306 Exposition Boulevard • Los Angeles, Calif. 90064

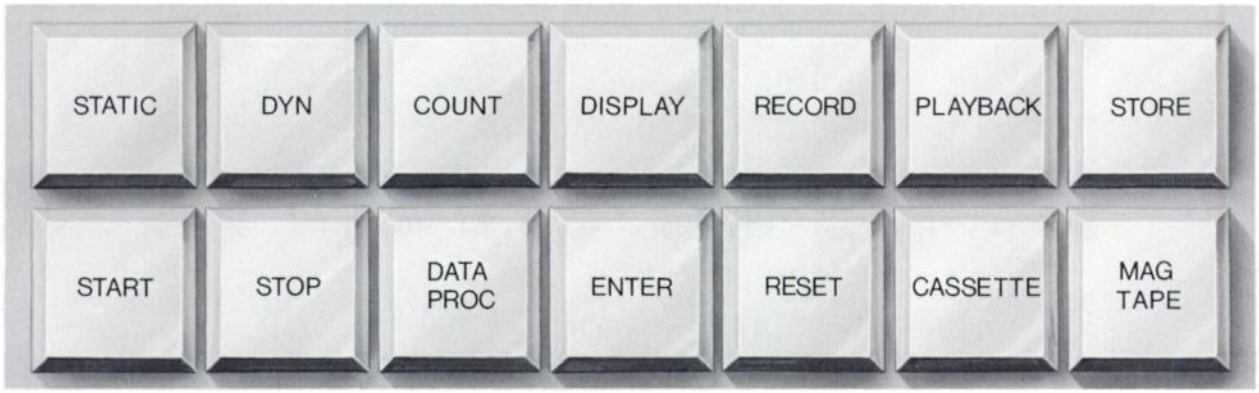
TWX 910-342-7577 In Calif. call collect (213) 826-0831

Call toll free 800-421-7235

# SEVENTY SEVEN REASONS:

## 2. A gamma camera system with a simple-to-use, integral computer incorporating the most comprehensive software programs in nuclear medicine.




**Consider:**

- System Seventy Seven is the result of ten years of development in perfecting a computerized gamma camera.
- It is still the lowest priced of all computerized gamma cameras.
- There are more System Seventy Seven installations than any other computerized gamma camera system.
- The clinical software library for System Seventy Seven is the most extensive available.
- It is the only system that can realistically convert so wide a range of raw clinical data to diagnostic results.
- It is designed to be operated by your own nuclear medicine technologist. *No programmers or computer specialists are required.*
- Clinical data in the images produced by System Seventy Seven have established new standards in nuclear cardiography.

**SYSTEM SEVENTY SEVEN** provides the user with the speed, power and versatility of a computer with the pushbutton ease of operation of a pocket calculator; in fact, it improves on the pocket calculator by back-lighting only those buttons which are subsequent legitimate operations. Its software program library implements complex computer operations, relieving the operator of plaguing, time-consuming routines. Time is left for medicine. The back-lighted pushbuttons activate the respective computer software; thus providing rapid, easy computerized manipulation of clinical data without sacrificing the user's decision-making flexibility and integrity.

Send for nuclear cardiography applications brochure.

BA **BAIRD-ATOMIC**

**Home Office:** Baird-Atomic, Inc.,
125 Middlesex Turnpike, Bedford, Mass. 01730
Tel. (617) 276-6000 — Telex: 923491 —
Cable: BAIRDCOBFRD

**International Sales and Service:**
**BAIRD-ATOMIC** (Europe) B.V. Veenkade 26-27-28a, The Hague, Holland
Telephone: (070) 603807. Telex: 32324. Cable: BAIRDCO HAGUE
**BAIRD-ATOMIC, LIMITED,** East Street, Braintree, Essex, England.
Telephone: Braintree 628. Telex: 987885. Cable: BAIRTOMIC
**BAIRD-ATOMIC,** Ind. E Com., Ltda., Av. Paulista, 2073-14 c/1412, 01311 Sao Paulo, SP, Brazil
Telephone: (011) 289-1948. Telex: 01122401. Cable: BAIRDATOMIC SPAULO

# a $^{133}$Xe Gas Control System from RADX

## The START
## Xenon-Kow II

$^{133}$Xe is most economically obtained in curie quantity glass ampules. The Xenon-Kow II was designed to safely and conveniently crush the ampule and dispense $^{133}$Xe in smaller doses. The dynamic volume storage chamber provides for constant concentrations (decay excepted), and transfer efficiencies exceed 98%. The economies realized will pay for the entire system, usually in the first year. Let us analyze and compare your current cost with our system cost.

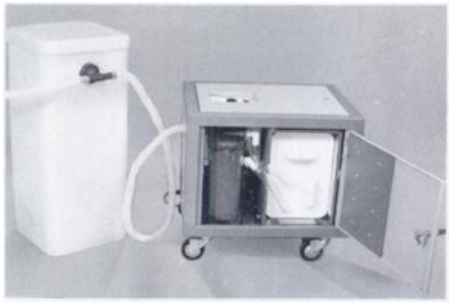
## The HEART of the System
## Ventil-Con

The Ventil-Con controlled gas delivery system is used for patient administration of $^{133}$Xe. You may administer the $^{133}$Xe as a bolus or homogenous mixture with air and oxygen to perform the single breath, equilibrium and washout phases of lung ventilation studies.

Major features are:

- GM detector for $^{133}$Xe concentration determinations
- Automatic $O_2$ replenishment
- Manual $O_2$ replenishment
- Emergency $O_2$ assist
- Swivel adapter for multiple views available
- In line, autoclavable, bacteriological filter
- Wide variety of face mask and mouthpieces available
- 10 liter dry spirometer
- Volume meter
- Dual channel strip chart recorder (optional)
- Breathing resistance less than 0.05-0.1 inches of water
- Arm adjustable for 0-60 inches
- Large $CO_2$ adsorber

We also make special Ventil-Cons for $^{127}$Xe and cerebral perfusion studies by the Obrist technique[1].



## The FINISH
## Xenon Trap

The Radx Xenon Trap is the only activated charcoal trap with a built-in $^{133}$Xe saturation detector/alarm. When the charcoal reaches its saturation point, (because there is no such thing as a "life-time" trap) an audio/visual alarm is activated indicating it's time to replace the 6-cylinder cartridge pack. Other features are a large desiccant jar for moisture removal, a "flame isolated"pumping system and an optional expandable interface (pictured).

Actually, the Xenon Trap is not the finish because with every piece of Radx equipment goes our one-year warranty, and our commitment to the future needs of nuclear medicine.

1. Obrist, W. D. et al, "Determination of Regional Cerebral Blood Flow by Inhalation of Xenon-133", Circulation Research, XX,124-134, January 1967.

RADX

P.O. Box 19164, Houston, Texas 77024 • (713) 468-9628

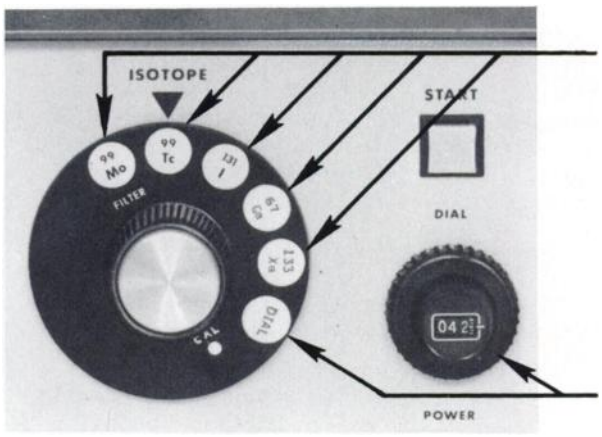
# NEW

# RAD/CAL™ II DIGITAL ISOTOPE CALIBRATOR

Factory-calibrated for all widely used radionuclides. Others can be added easily.


- Automatic ranging from 1 $\mu$c to 1 Ci.
- 4-digit, solid state readout.
- Fully-shielded chamber.
- Molybdenum breakthrough shield.

Also performs as a computing dose calibrator (when used with an optional Hewlett Packard HP-25 Pre-Programmed Calculator).




Has 5 pre-calibrated switch positions for selecting the most commonly used radionuclides.

In "Dial" position, the 10-turn potentiometer permits ANY radionuclide to be measured.

**ONLY $1495**

**For full details write for Bulletin 170-A**

**NUCLEAR ASSOCIATES, INC.**
Subsidiary of
**RADIATION-MEDICAL PRODUCTS CORP.**
100 VOICE ROAD • CARLE PLACE, N.Y. 11514 • (516) 741-6360

It asks for your instructions, repeats them and gives you a chance to change them. Then, it even talks back if an instruction is wrong.

That's smart. But that's not all.

The SKI Gamma System has a microprocessor with a magnetic disc memory that calculates, controls the counter, spots errors, makes sound evaluations about data quality.

And the microprocessor is an integral part of the system—not just added on. In the unlikely event something goes wrong, you have only one number to call. Ours.

The SKI Gamma System is *fully* automatic—so there's no raw data to pat, prod, calculate or manipulate. You can put up to 200 tubes in the changer, key in your instructions and walk away. While you are doing something else, it counts your samples, alters assay routines if you're doing more than one type of test, plots standard curves, reduces data to medically useful answers and prints them on tape in easy-to-read form.

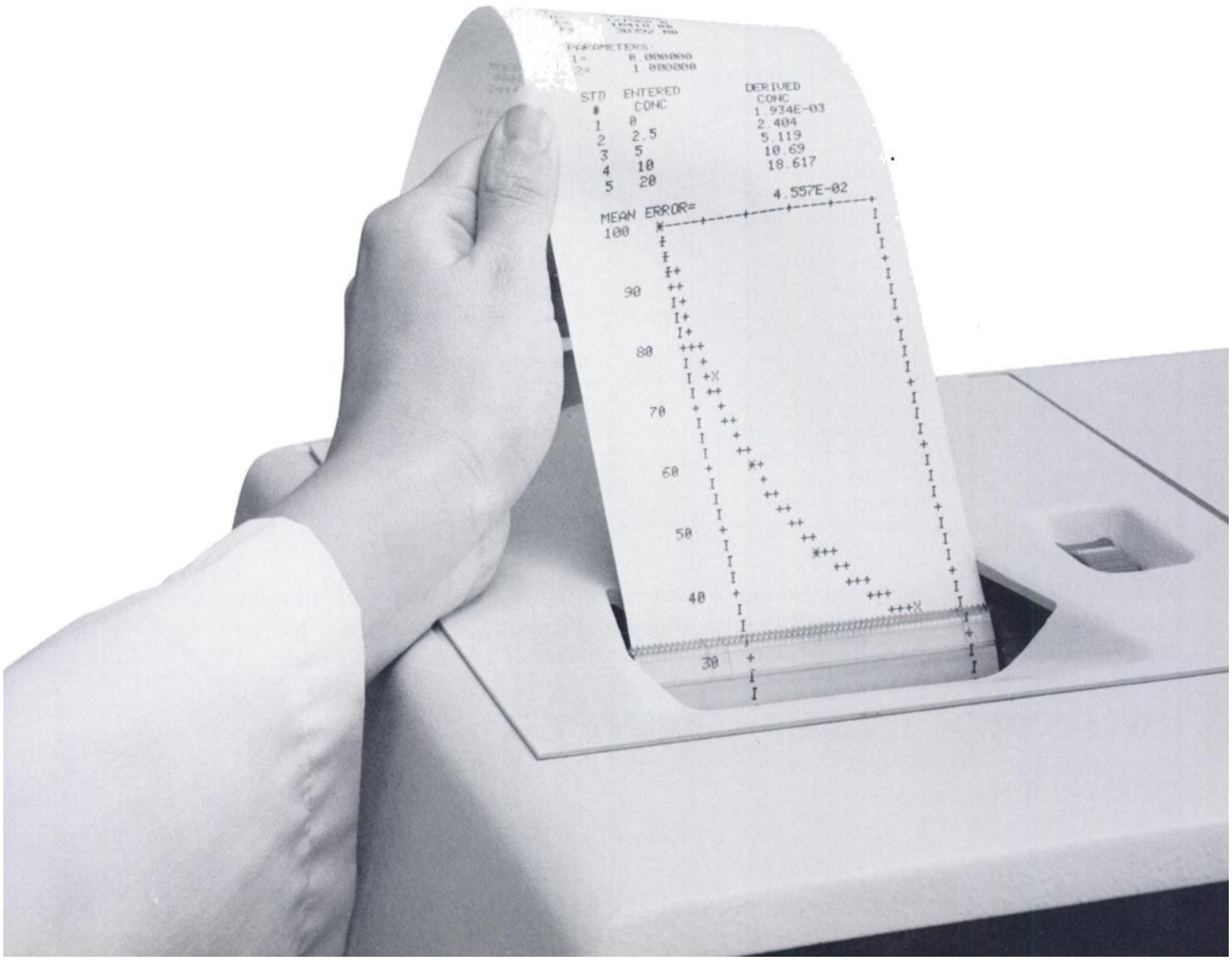
That's smart.

Because of all this, more and more laboratories are enjoying the speed, dependability and flexibility of The SKI Gamma System.

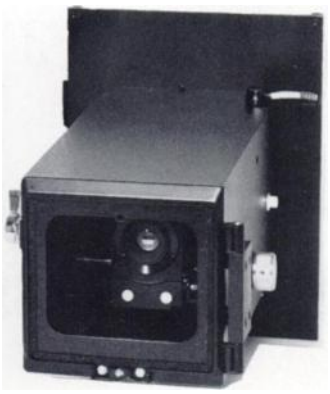
Call us for details—or a free demonstration—and learn how much simpler RIA and other radioassays can be.

SKI Smith Kline Instruments, Inc.
880 West Maude Ave. • Sunnyvale, CA 94086 • (408) 732-6000
A Subsidiary of SmithKline Corporation

# The SKI Gamma System. A little smarter than the rest.



# State of the art in gamma camera hard copy recording.



## Multi-Imager 1

Multi-Imager 1 employs the CRT of the gamma camera to record static, dynamic, and whole body imaging procedures on transparency format. The highly versatile Multi-Imager 1 offers film size formats of 5x7 and 8x10, yielding superior quality transparency scintiphotos recorded on a wide range of x-ray film processor compatible films. Up to 30 images can be recorded on a single sheet of film in ten different formats. In addition to the usual 1, 4, and 16 image formats, Multi-Imager 1 offers seven further choices to yield the exact diagnostic format required. For example, Multi-Imager 1 offers a 6 image format to allow recording of static studies that require a fifth and sixth view, and a 30 image format for dynamic studies that require more than sixteen frames. For whole body imaging, the 2 image format records side by side AP and PA views on the same sheet of film. Static, dynamic, and different size images can be mixed on the same sheet of film.

## Multi-Imager 4

Multi-Imager 4 yields unmatched performance in gamma camera hard copy recording. A built in high resolution CRT, state of the art microprocessor technology, and electronically synchronized multiple lens optics provide a very small dot size on 8x10 format without increasing the pulse pair resolution dead time of the gamma camera system. The fast lens system of Multi-Imager 4 is compatible with both conventional x-ray film and the slower single emulsion radiographic films that provide the best image quality. Up to 64 images can be recorded in ten different formats. The dual intensity recording mode allows simultaneous acquisition of whole body or static views at two different intensity levels. Positive patient indentification is achieved through a nine digit keyboard LED system.

**Both Multi-Imager 1 and Multi-Imager 4 can provide thousands of dollars in annual film cost savings and are compatible with all gamma cameras. Mail coupon to receive detailed information and sample clinical studies.**

## #MATRIX INSTRUMENTS

1 Ruckman Rd.
Closter, N.J. 07624
**(201) 767-1750**

**Mail coupon to receive sample clinical studies.**

Matrix Instruments, Inc., 1 Ruckman Rd., Closter, N.J. 07624
Please send Multi-Imager System literature and sample studies.

Name
Hospital
Address
State
Phone
Title
Dept.
City
Zip

# World-Wide Acceptance ...Global Availability


# ISOCLEAN CONCENTRATE

## Radio-Labware Cleaner

The most effective solution anywhere offered for cleansing hot-lab apparatus of adherent radioactivity. Safe and easy-to-use. Proves itself thousands of times daily in research and clinical laboratories throughout the world.

Now available at reasonable cost, internationally, through licensed manufacture to Isolab's exacting specifications, plus national distribution from local stocks.

*Contact your nearest* Isoclean *licensee or distributor for complete information.*

**ISOLAB** inc.
INNOVATIVE PRODUCTS FOR RESEARCH
**Drawer 4350 Akron Ohio USA 44321**

**Phone: 216/825-4528 collect Or**
**800/321-9632 toll-free**
**Cables: ISOLAB AKRON**
**Telex: 98-6475**

**WESTERN EUROPE**
BIOLAB S. A.
Ave. Michel-Ange 8
1040 Brussels, Belgium

**IBERIAN PENINSULA**
ATOM
Paseo del Monte, 34
Barcelona-12, Spain

**SOUTH AFRICA**
CHEMLAB Pty. Ltd.
P.O. Box 56218
Pinegowrie, Transvaal, RSA

**AUSTRALASIA**
S.R.E. Pty. Ltd.
P.O. Box 69
Pennant Hills, N.S.W. 2120

***In the U.S. and Canada: Order from any office of Amersham-Searle, Nuclear Associates, Picker and other distributors—or call Isolab collect.***

# Raytheon widens your image horizons.

## Introducing the 91-tube Cameray XL.

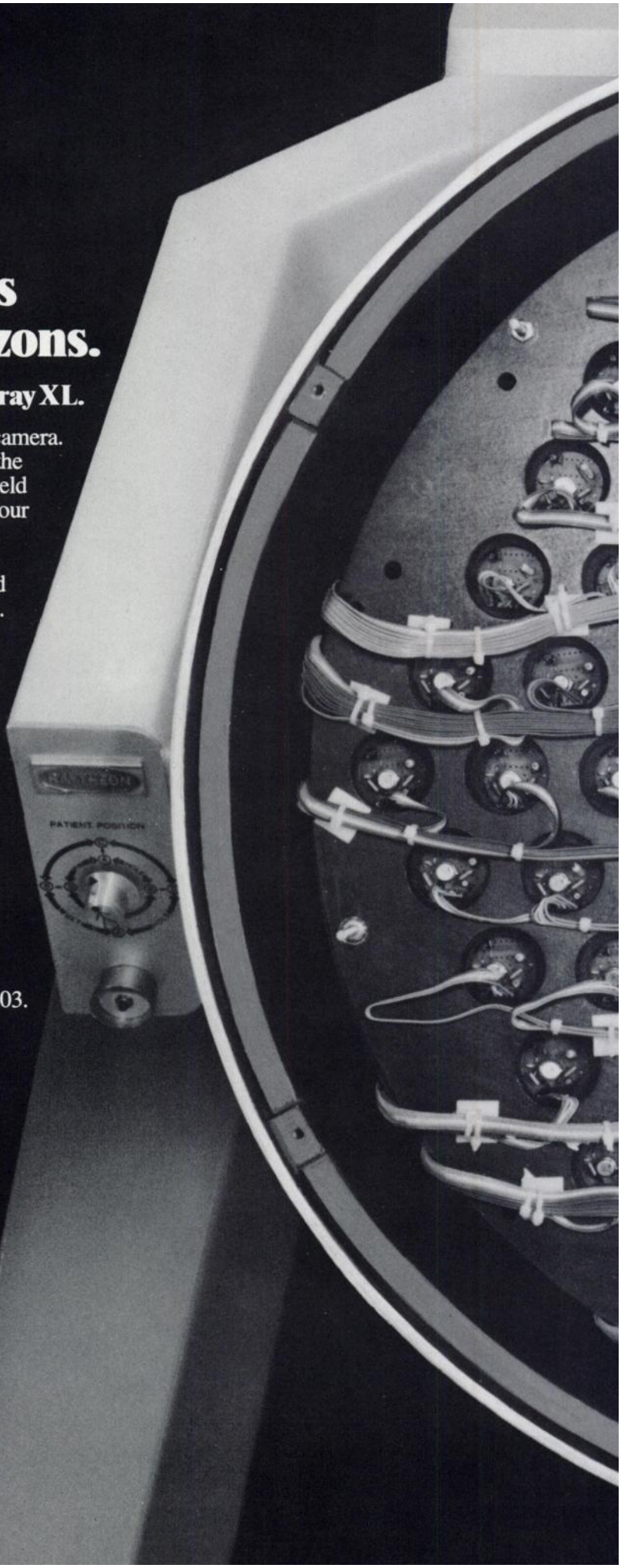
A new generation of wide field gamma camera. With wider-than-ever field of view. And the same sharp image resolution as smaller field cameras. That's how Raytheon widens your image horizons with the new 91-tube Cameray XL.

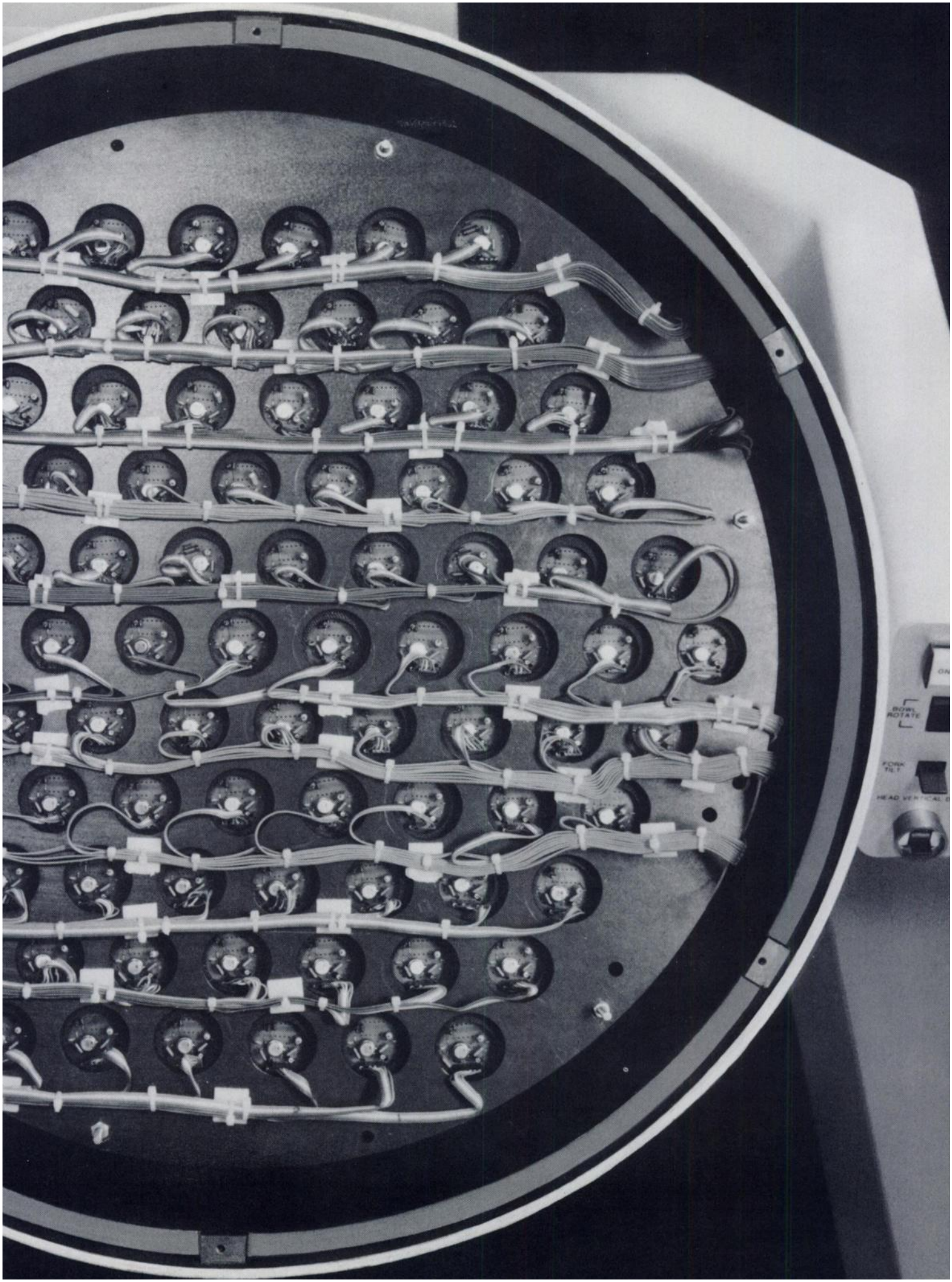
You get a big 16½ inch effective field of view. A total camera field of 18 inches. And because the Cameray XL uses straight bore, rather than diverging collimators, you get no less than the highest image resolution.

Of course, you also get the same Total System Performance (TSP) that you get from our 37-tube Cameray II. That includes uniformity, linearity and resolution. Plus a full range of accessories.

So get more patient per scan. And resolution that's rare in a wide field camera. Broaden your horizons with the Cameray XL-91. Contact Raytheon's Medical Electronics Operation, Fourth Avenue, Burlington, Massachusetts 01803. (617) 272-7270.

RAYTHEON




BOWL ROTATE
FORK TILT

# Now Everybody Can Breathe Easier

Everybody benefits from comprehensive technological advances like the widely used Omnimedical AVM-3 Automated Ventilation Module. With the AVM-3 radioxenon ventilation studies are automated, simplified, reproducible one man operations. Patient cooperation is not needed. Interfaced with the gamma camera, the operator selects a study sequence—Single Breath (tidal volume or vital capacity) or Rebreathe, singly or in combination—and pushes the start button. Scintiphotos are initiated automatically at precise predetermined intervals. The data is then collected. The entire system is enclosed in a streamlined case mounted on an overbed table for use on patients in either sitting or supine positions. The AVM-3 is easy to position, easy to use, easy on the patient, even easy to store. And it's easy to buy. $3,750. F.O.B. Los Angeles. Omnimedical guarantees 30 day delivery. Now, you can breathe easier, too! AVM-3 by Omnimedical, P.O. Box 1277, Paramount, Ca. 90723 (213) 633-6660.

**OMNIMEDICAL**

# Recommended* Certified**


*Quality control procedures governing nuclear medical services must include the assay of the radiopharmaceutical prior to patient administration.

Authorities recommend that the assay procedure (most likely using a Capintec calibrator) include:

Daily consistency checks, using a long-lived reference standard, to affirm proper instrument performance; monthly calibration checks, which demonstrate system performance, using reference standards that span both the energy range and activity range of radiopharmaceutical interest.

**Every Capintec reference standard set consists of 3 precisely calibrated radioactive sources of certified purity and activity, as follows:

| | |
|---|---|
| $^{57}$ Cobalt | 1 millicurie |
| $^{137}$ Cesium | 100 microcuries |
| $^{60}$ Cobalt | 100 microcuries |

Each source is accompanied by a Certificate of Radioactivity Calibration which guarantees accuracy to better than 5%.

These procedures are your assurance that the administrated dose is calibrated to be exactly as prescribed.

# CAPINTEC, INC.

136 Summit Avenue • Montvale, New Jersey 07645 • (201) 391-3930

## POSITIONS OPEN

IMMEDIATE OPENINGS FOR TWO technologists in fully accredited 370-bed community and university affiliated hospital, situated in scenic northcentral Pennsylvania. Proficiency required in radioimmunoassay work, imaging dynamic studies and computer applications. Department is equipped with cameras, rectilinear scanners, automated well counters and a computer. Good salary and full benefits. Contact Jack D. Cain, Director of Personnel, The Williamsport Hospital, 777 Rural Ave., Williamsport, Penna., 17701.

NUCLEAR MEDICINE TECHNOLOgist. 500-bed medical center is presently seeking a registered or registry eligible nuclear medicine technologist to work in a rapidly expanding nuclear medicine laboratory. Competitive salary and excellent hospital benefits. Reply may be directed to: Joe Wells, Employment Manager, Mt. Carmel Medical Center, 125 South Souder, Columbus, Ohio 43222 (614) 225-5288. An Equal Opportunity Employer—Male/Female.

NUCLEAR MEDICINE TECHNOLOgist: Capable in in-vitro and imaging procedures, wanted for 200-bed general hospital located in San Francisco peninsula. Contact: Nuclear Medicine Service, VA Hospital, Livermore, CA, 94550, Tel: (415) 447-2560, ext. 294.

NUCLEAR PHARMACISTS: CENTRALized Nuclear Pharmacy experience preferred. Positions include Managers and Assistant Managers of Nuclear Pharmacies throughout the United States. Please send resumes to Pharmatopes, Inc., 1944 West Central, Toledo, Ohio 43606, Attention: Personnel, or call 419-473-1215.

NUCLEAR MEDICINE RESIDENCY. Two year program affiliated with Johns Hopkins Hospitals. Opening available July, 1976. A.M.A. approved. Contact S. J. N. Sugar, M.D. Chief, Nuclear Medicine Service. Prince George's General Hospital, Cheverly, Maryland 20785.

NUCLEAR MEDICINE TECHNICIAN: Immediate opening for MT., ASCP with nuclear medicine training or experienced nuclear medicine technician, organ image and in vitro tests. Starting salary—$850 depending on training and experience. Send resume to Dr. Harry Lo, Grays Harbor Community Hospital, 915 Anderson Dr., Aberdeen, Washington 98520.

NUCLEAR MEDICINE TECHNOLOgist. For laboratory of 178 bed general hospital in University Town. Must be registered or registry eligible. Permanent day position. Competitive salary and liberal fringe benefits. Continuing education program. Contact: Personnel Director, McDonough District Hospital, Macomb, Illinois 61455.

NUCLEAR MEDICINE PHYSICIAN TO head section of nuclear imaging in Department of Diagnostic Radiology at 500-bed medical school affiliated teaching hospital in large northeast metropolitan area. Candidate must be board qualified or certified in Nuclear Medicine. Please submit C.V. to Box 701, Society of Nuclear Medicine, 475 Park Avenue South, New York, N.Y. 10016. An affirmative action/equal opportunity employer.

FULL-TIME NUCLEAR MEDICINE physician. Preferably with radiology background, wanted for large Manhattan university teaching center, including two adjacent affiliated hospitals, ongoing training programs; send resume, P.O. Box 702, Society of Nuclear Medicine, 475 Park Avenue South, New York, N.Y. 10016.

NUCLEAR MEDICINE TECHNOLOgist for position in attractive well equipped department. Will work with Pho Gamma scanner, dose calibrator, and radiation survey equipment. Department is a vital part of a 420-bed general community hospital located in central Illinois city of 100,000 people. Top salary, fully paid hospitalization and major medical. Contact Ellen Carter, Personnel, Decatur Memorial Hospital, 2300 North Edward, Decatur, Ill. 62526.

IMMEDIATE OPENING FOR A REGISTered Nuclear Technician in a 167 bed hospital with modern scanning equipment. Competitive starting salary with excellent fringe benefits. Contact Paul D. Vogen, Middle Ga. Hospital, 888 Pine St., Macon, Ga. 31201. Telephone 912/743-1551.

## POSITIONS WANTED

NUCLEAR MEDICINE PHYSICIAN with extensive experience in all aspects of nuclear medicine; research and teaching, wishes to relocate. Board certified in Nuclear Medicine and Internal Medicine. Willing and able to develop a comprehensive, computerized nuclear medicine program for interested party whether in academic medicine, community hospital, or in private practice. Response should include job description and salary range. Send reply to Box 603, Society of Nuclear Medicine, 475 Park Ave. South, New York, N.Y. 10016.

CHIEF NUCLEAR MEDICINE TECHnologist. Registered (ARRT). 5 years experience, 2 years chief technologist, 2 years N.M. teaching, A.M.A. approved institution. Well versed in all areas of procedure, planning, and management. Prefer south eastern coast. Contact H. L. Hise, 5605 Dowgate Court, Rockville, Maryland 20851, (202) 295-0178.

RADIOPHARMACEUTICAL/ANALYTIcal Ph.D. 1976. Desire position in application, preparation, R&D in the area of radiopharmaceutical labelling/analytical chemistry. Experienced with GC, HPLC. Liquid scintillation and other radioactivity assay. Publications. Will relocate. Steven H. Wong, Chemistry Department VPI&SU, Blacksburg, Va 24061.

## FOR SALE

AUTOMATIC SAMPLE CHANGER; Baird-Atomic/Tri-Gamma 600 Sample Capacity; approximately 3 years old. Less than one-half original price. Contact: A. W. Patrick, Winter Haven Hospital, Winter Haven, Florida 33880 or call (813) 293-1121 Ext. 1461.

COBALT THERAPY MACHINE, Atomic Energy Canada, Ltd., Theratron 80, with a beam stopper counterweight (G-1001). Accessories include, but are not limited to: transit dosimeter, sectional stretcher top, two (2) wedge filters, breast cone and dose distribution atlas. Source: A.E.C.L. Cobalt 60; 4,498 curies calibrated October, 1972. Superficial therapy machine, General Electric Maximar 100, including table top drawers and seat, side rail tube stand, full assortment of treatment cones. Contact Mrs. Madra Potter, Mercy Hospital, 1500 E. Sherman, Muskegon, Mi. 49443. Phone 616-739-9341.

## WANTED

USED COLLIMATORS FOR A PICKER Magnascanner part number 2114B and/or 2127A low energy collimator(s). Also looking for a used pin hole collimator with an all purpose aperture for a Dynna Camera 2C. Please contact Mr. Craig R. Treadwell, R. T. at Magic Valley Memorial Hospital, 650 Addison Ave. West, Twin Falls, Idaho 83301. Telephone (208) 733-1511 Ext. 282.

Topics in Nuclear Medicine. The Eighth Annual Seminar in Nuclear Medicine will be held at Colby College and the Mid-Maine Medical Center in Waterville, Maine, August 16–20, 1976. Thirty hours of minisymposia along with lectures, workshops, and interesting cases will be presented by Drs. Henry N. Wagner, Leonard Rosenthal, Steven M. Larson, Thomas G. Mitchell, H. William Strauss, and Mr. James Langan. Accredited Category I, AMA's Physician Recognition Award.

For further information, contact **Dr. Robert Kany, Director of Special Programs, Colby College, Waterville, Maine 04901.**

**RESIDENCY IN NUCLEAR MEDICINE**

**Sacramento Medical Center, School of Medicine, University of California, Davis**

Positions available for all levels of postgraduate Nuclear Medicine training, internship and resident beginning July 1977. Selection in October 1976. ABNM approved program integrating classroom, clinical and research experience.

**Gerald L. DeNardo, M.D., Director**
**Nuclear Medicine Department, UCD-SMC**
**4301 X Street, Sacramento, CA 95817**
**Phone: 916-453-3787**

**YALE MEDICAL SCHOOL**

**Full Time Academic Staff Position in NUCLEAR MEDICINE**

Send C.V. and Bibliography to:

Alexander Gottschalk, M.D.
Director, Section of Nuclear Medicine
Yale University School of Medicine
333 Cedar Street
New Haven, Conn. 06510

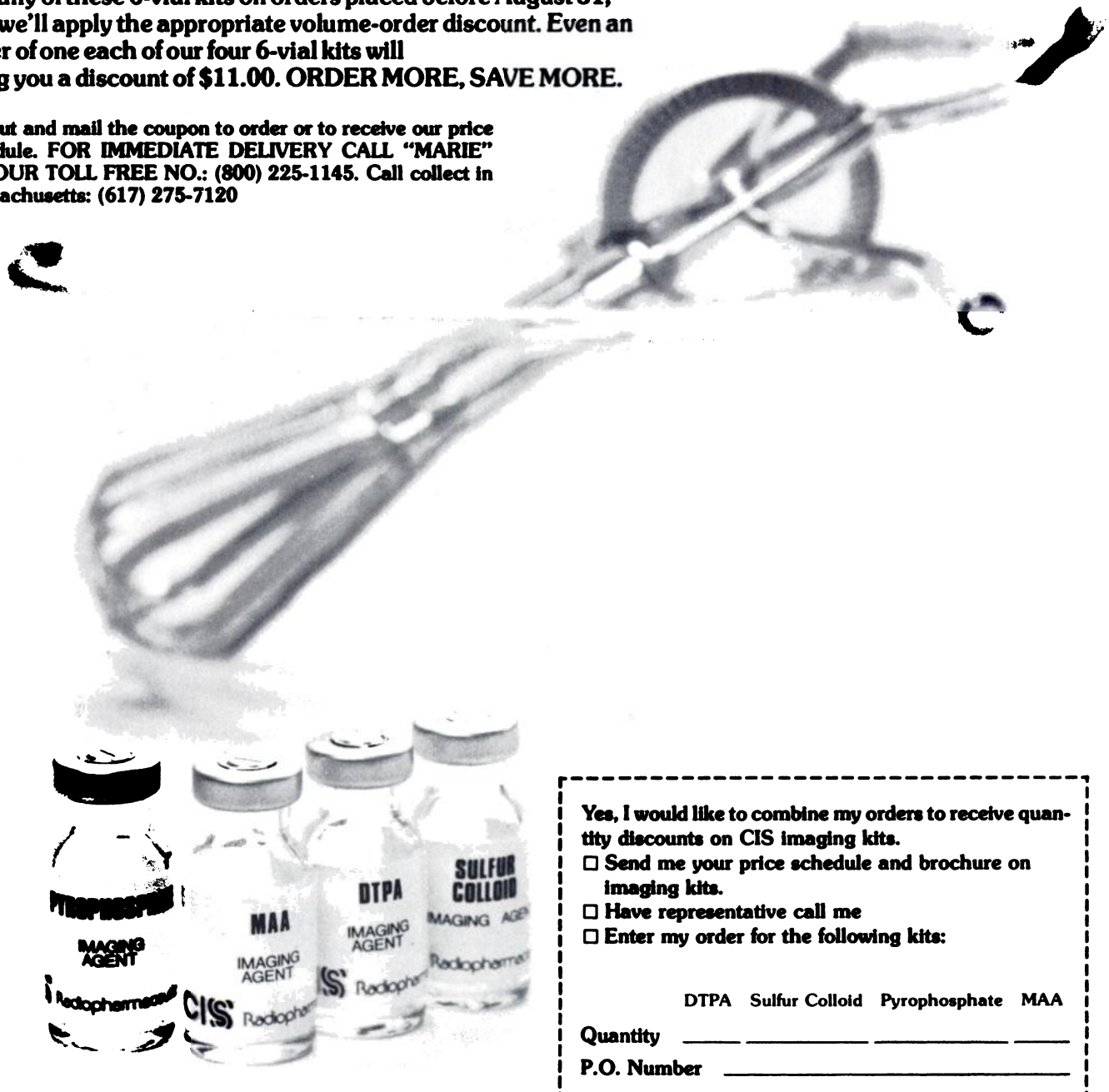
*An Equal Opportunity Employer*

# MIX THEM
## for the Best Buy

**Take advantage of our quantity discount by combining any of our Tc99m radionuclide imaging kits (DTPA, Sulfur Colloid, Pyrophosphate or MAA) in one order.**

**Mix any of these 6-vial kits on orders placed before August 31, and we'll apply the appropriate volume-order discount. Even an order of one each of our four 6-vial kits will bring you a discount of $11.00. ORDER MORE, SAVE MORE.**

**Fill out and mail the coupon to order or to receive our price schedule. FOR IMMEDIATE DELIVERY CALL "MARIE" ON OUR TOLL FREE NO.: (800) 225-1145. Call collect in Massachusetts: (617) 275-7120**




**Yes, I would like to combine my orders to receive quantity discounts on CIS imaging kits.**

- ☐ **Send me your price schedule and brochure on imaging kits.**
- ☐ **Have representative call me**
- ☐ **Enter my order for the following kits:**

| | DTPA | Sulfur Colloid | Pyrophosphate | MAA |
|---|---|---|---|---|
| **Quantity** | _____ | _____ | _____ | _____ |

**P.O. Number** _____

**Refer to price schedule dated Oct. 31, 1975**

**Name** _____ **Title** _____

**Organization** _____

**Address** _____ **Tel** _____ **Ext** _____

**City** _____ **State** _____ **Zip** _____

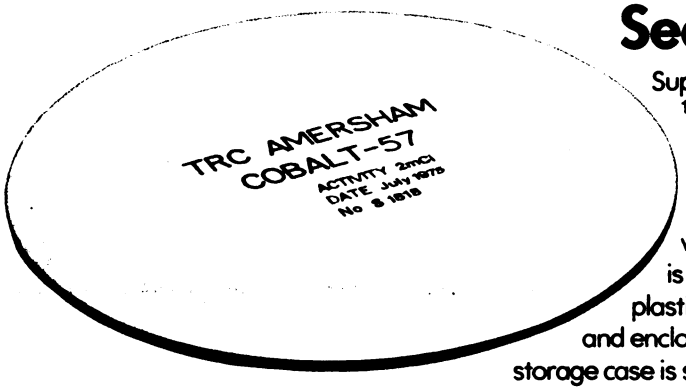
CIS®

CIS Radiopharmaceuticals, Inc.

5 DeAngelo Drive/Bedford, Ma. 01730 Telephone:(617)275-7120;
outside Massachusetts (800)225-1145 TELEX 94-9465

# A reference is only as good as its source

Our sources have an excellent reputation for safety and convenience; they offer you references you can trust.




## Sealed flood sources

Supplied as $^{57}Co$ (2 and 3mCi) and $^{133}Ba$ (0.5 and 1.0mCi) in two sizes, to check the uniformity and resolution of conventional and wide field-of-view gamma cameras, and for transmission imaging. The maximum acceptable variation in activity over the entire active area, is ±1% of the mean value. Each uniformly active plastic component is surrounded by inactive plastic and enclosed in an anodized aluminium casing. A shielded storage case is supplied with each source.

## Anatomical marker sources

**Spot sources** are available as a 1mm bead of $^{57}Co$ or $^{133}Ba$ (10 and 100μCi). Features include a welded plastic capsule, point source geometry with a visible active bead, and colour coding for quick identification of nuclide and activity. They are packed in sets of three in shielded boxes; replacements are available separately.


**Pen point tracers** have a 1mm diameter bead of $^{57}Co$ (100μCi) sealed in the tip of a ball-point pen shaped holder with a brass shield for the active end.

**Flexible sources** are 50cm x 4mm diameter; $^{57}Co$ (100μCi) is dispersed in an inner core of active plastic, sealed in an inactive PVC tube, and closed by aluminium caps.

## $^{129}I$ rod sources for γ counters

$^{129}I$ (0.1μCi) gamma/X-ray spectrum is virtually identical to $^{125}I$, and has a half-life of $1.57 \times 10^7$ years. Calibration in terms of $^{125}I$ is available. The length is 100mm, maximum diameter 15mm—suitable for most manual and automatic counters. Active material is sealed in a plastic capsule attached to a handling rod. Other nuclides $^{241}Am$, $^{133}Ba$, $^{57}Co$, $^{60}Co$, $^{137}Cs$, $^{54}Mn$, $^{22}Na$, $^{75}Se$, $^{123m}Te$, $^{88}Y$ and mock $^{131}I$.

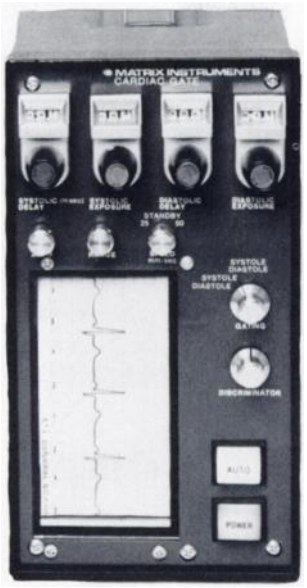
**The Radiochemical Centre Amersham**

Please write for further details.
The Radiochemical Centre Limited, Amersham, England. Telephone: 024-04-4444
In the Americas: Amersham/Searle Corp., Illinois 60005. Telephone: 312-593-6300
In W. Germany: Amersham Buchler GmbH & Co. KG, Braunschweig. Telephone: 05307-4693-97

0353

# State of the art in cardiac and respiratory synchronization.

## Cardiac Gate




Cardiac Gate is designed to synchronize the cardiac image exposure with predetermined phases of the cardiac cycle.

The Cardiac Gate has two modes of operation: manual and automatic. In the manual mode, delay and exposure time parameters are set manually, using the R wave of the electrocardiogram as a reference. In the automatic mode, microprocessor circuitry automatically tracks the cardiac cycle and computes the position of end-systole and end-diastole. In the automatic mode, end-systole and end-diastole exposures are made without any calibration settings.

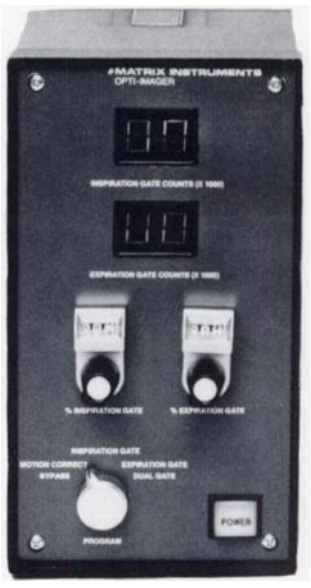
The dual gating operation mode allows recording of both end-systole and end-diastole simultaneously in a split screen two image format.

The cardiac cycle can even be divided into nine equal time segments and the image corresponding to each displayed simultaneously in a nine image format.

The Cardiac Gate includes a complete electrocardiograph module. The built in heated stylus strip chart recorder records both the ECG trace and the gating intervals.

The Cardiac Gate provides both ECG and gating outputs for computer interface.

## Opti Imager




Opti-Imager is designed to provide an organ image with effects due to respiratory motion minimized. Opti-Imager has two distinct modes of operation: continuous motion correction and respiratory gating. In the continuous motion correction mode, the motion of the organ is tracked and corrected electronically without the need to attach any sensors to the patient. The distribution of counts within the organ image is monitored and corrections are applied to continuously shift the image before it is displayed to compensate for organ motion. Correction is made for motion in both the X and Y direction. Thus, the gamma camera is not gated and all the counts provided by the detector are recorded. The time required to attain a statistically satisfactory image is the same for both a motion corrected and an uncorrected image. In the gating mode, inspiration plateau and expiration plateau images are recorded. The dual gating operation mode allows recording of both inspiration and expiration plateau images simultaneously in a split screen two frame format. Dual scalers record the number of counts in each image.

The Cardiac Gate and Opti-Imager can be synchronized to yield a combination of both cardiac and respiratory gating. Mail coupon to receive detailed information and sample clinical studies.


**#MATRIX INSTRUMENTS**

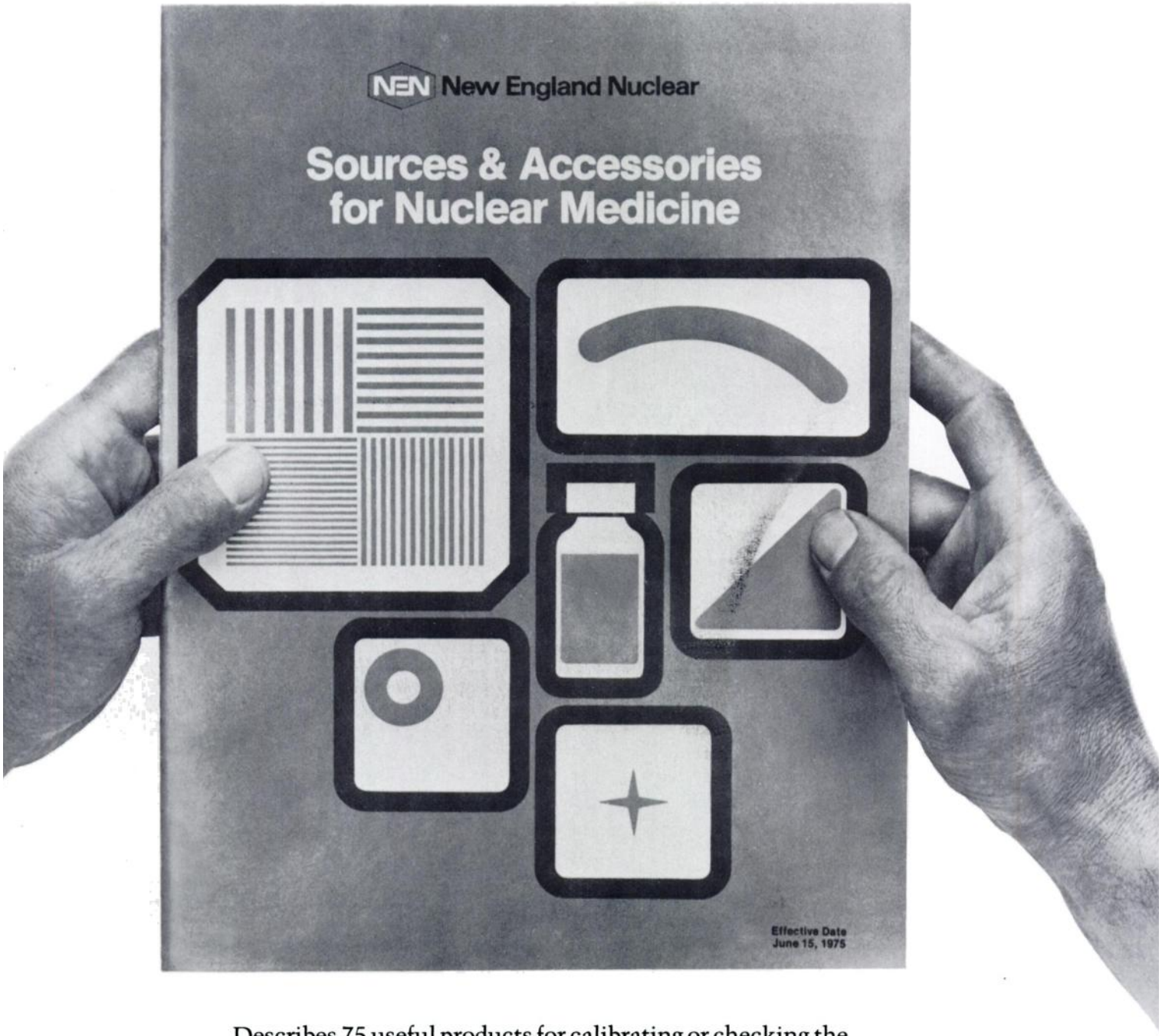
1 Ruckman Rd.
Closter, N.J. 07624
**(201) 767-1750**


**Mail coupon to receive sample clinical studies.**

Matrix Instruments, Inc., 1 Ruckman Rd., Closter, N.J. 07624
Please send Cardiac Gate and Opti-Imager literature and samples studies

Name
Hospital
Address
State
Phone
Title
Dept.
City
Zip

# Scintillating reading

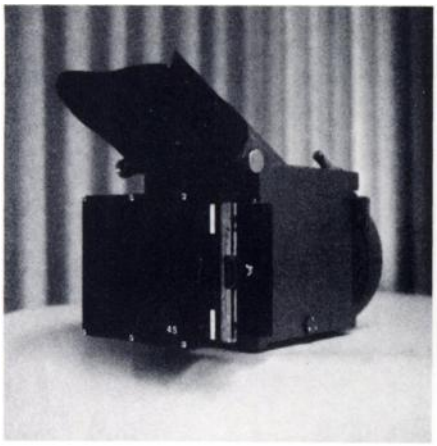



Describes 75 useful products for calibrating or checking the resolution of scintillation cameras, ion chamber detectors, and other detection equipment in your Nuclear Medicine Department. Includes a wide selection of flood sources and bar phantoms as well as calibrated standards to simulate short-lived radionuclides.

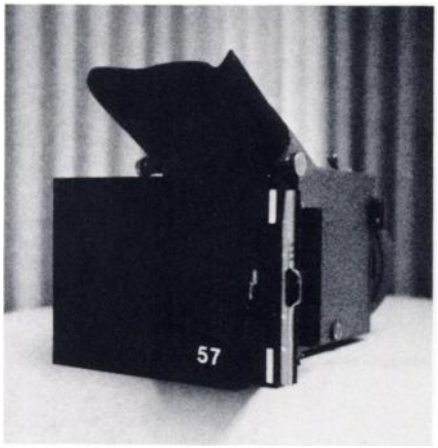
Call us: (617) 667-9531

**NEN New England Nuclear**
**Radiopharmaceutical Division**
Atomlight Place, North Billerica, Mass. 01862
Telephone 617-667-9531
Los Angeles: 213-321-3311 Miami: 305-592-0702

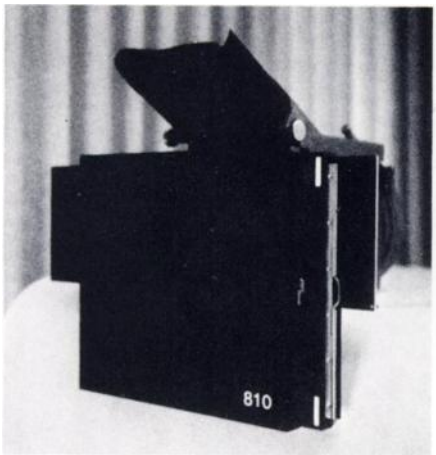
Canada: NEN Canada Ltd., 2453 46th Avenue, Lachine, Quebec, H7T 3C9, Tel: 514-636-4971, Telex: 05-821808
Europe: NEN Chemicals GmbH, D-6072 Dreieichenhain, W. Germany, Daimlerstrasse 23, Postfach 1240. Tel: (06103) 85034.



**MODEL "45" (4 x 5)**




**MODEL "57" (5 x 7)**




**MODEL "810" (8 x 10)**

# *"NISE-FORMAT"™

Since our first idea was born on February 18, 1972 to make a manual positioned, framed film cassette holder for multi-images on X-ray film, we have been able to improve our original design. The total size is now reduced to about the size of the cassette itself.

## FEATURES:

- Available in all sizes (11 x 14 not shown)
- Model No. 45 — Excellent for triple lens cameras
- Model No. 57 — For enlarged, single whole body studies or 2 normal size views (4 to 6 when minified)
- Model No. 810 — For 4 or 6 images (8 to 10 when minified)
- Model No. 1114 — For your "special" requirements (3 "Y" positions)
- Double-sided Cassette can be inserted from either side (left or right)
- No modification necessary, fits directly into existing Polaroid filmback holder (specify!)
- Will never need any service
- Works with triple or single lens cameras
- Economical, reduces film cost up to 60%

*Patent Applied For

Futher information available upon request.
Please write or call

*As shown at the 22nd Annual Meeting of the S.N.M. in Philadelphia, PA.

**N.I.S.E., INC.**
**20018 STATE ROAD, CERRITOS, CALIFORNIA 90701**
**TEL. (213) 860-6708**

*The GE commitment to nuclear medicine: complete equipment, software and service.*

# GE: new ideas solve nuclear needs.

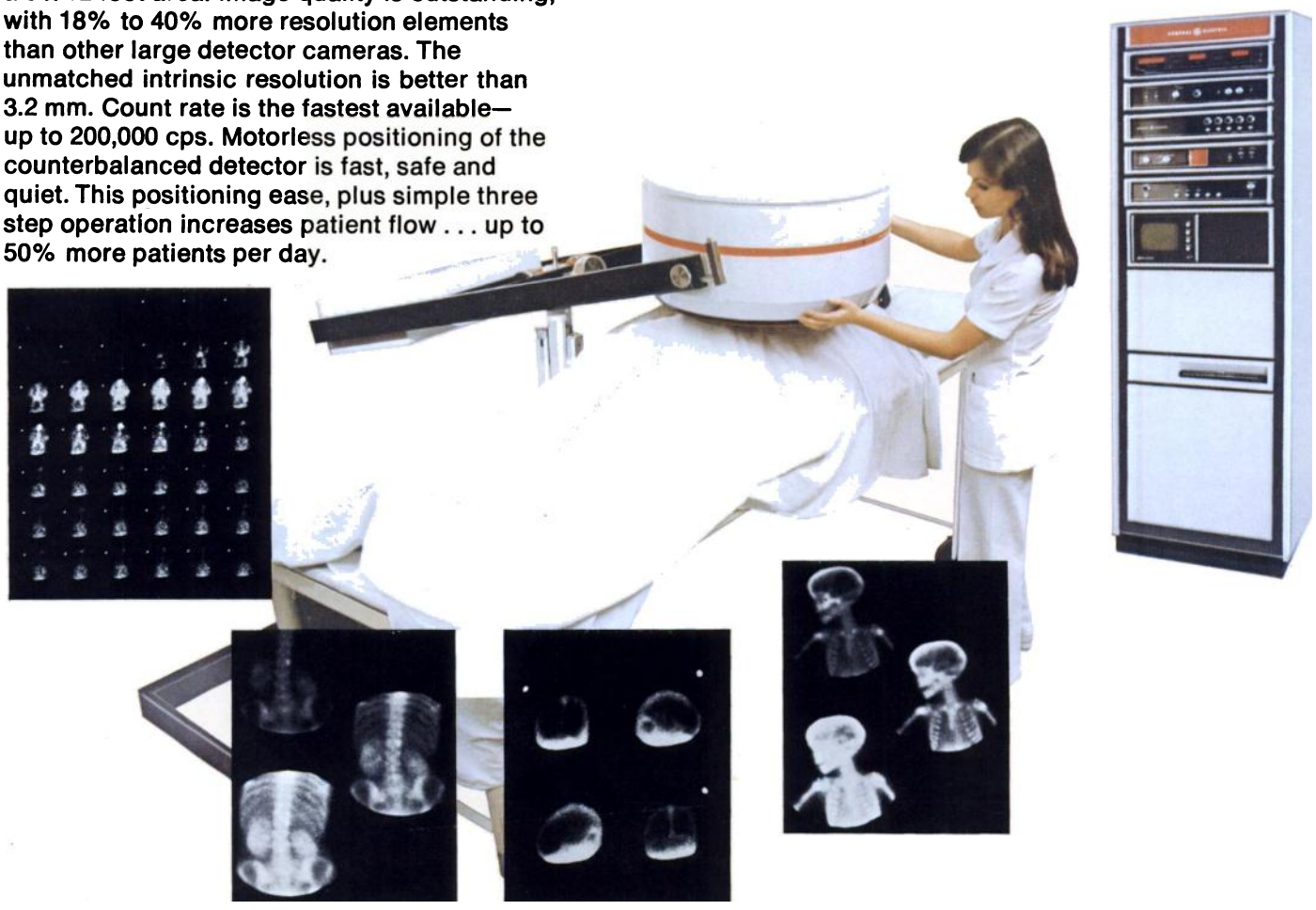
Innovative systems are needed to meet the many needs of today's nuclear departments. That's why GE has combined new product ideas with proven concepts to provide the latest in nuclear capability.

### MaxiCamera system: largest field of view delivers unprecedented image quality.

MaxiCamera™ system's 400 mm field of view—the largest of any scintillation unit—offers nuclear departments important new advantages. The big field allows imaging of both lungs at the same time—reducing lung study time by more than 30%. Large livers can also be imaged rapidly and easily. MaxiCamera system handles whole body scanning, yet the unit requires only a 6 x 12 foot area. Image quality is outstanding, with 18% to 40% more resolution elements than other large detector cameras. The unmatched intrinsic resolution is better than 3.2 mm. Count rate is the fastest available—up to 200,000 cps. Motorless positioning of the counterbalanced detector is fast, safe and quiet. This positioning ease, plus simple three step operation increases patient flow . . . up to 50% more patients per day.

### GE Formatter system: records much faster with no data loss.

During dynamic studies, valuable diagnostic information may be lost if the formatter cannot keep pace with the camera. Now General Electric offers a formatter that records data as fast as the camera detects it, with no data loss. GE Formatter system records up to 10 frames per second . . . many times faster than any other unit. This makes the GE Formatter the system of choice for dynamic studies. You can record up to 42 dynamic images on one 8 x 10 film, using economical, standard photographic cassettes. Standard multiple formats are available: 35, 70 and 105 mm. Valuable floor space is conserved because all formatter and camera controls are combined in one compact cabinet, occupying just 4½ square feet.



## PortaCamera system: nuclear department on wheels.

This compact, mobile scintillation unit is easily wheeled throughout the hospital to facilitate studies on immobile patients. The PortaCamera™ system weighs less than 1,000 lbs., about half the weight of most other portable cameras. The counterbalanced detector allows fast, precise positioning at a touch. A conveniently located, integral console includes all controls and oscilloscope. Easy two-step operation increases patient throughput potential. PortaCamera system also serves as an excellent, low-cost backup unit for ICU, CCU, surgery and emergency rooms.

## GE computer capability improves diagnostic data.

Med II™ is a complete image processing and data analysis system. It allows the physician to use the latest GE computer capability to maximize diagnostic information. The Med II system is a second-generation, push-button operated unit with a comprehensive library of nuclear medicine programs: left ventricular ejection fraction, left to right shunt, cardiac output, renal function, gated blood pool studies, ventricular volume, and many more. Combined, the Med II, MaxiCamera and GE Formatter units provide the most powerful nuclear diagnostic system available today.

MedStor™ is a moderately priced image storage and processing system which can be used with any scintillation camera, including the PortaCamera. The MedStor system provides computer-controlled playback of static and dynamic data, allows selection of up to four regions of interest, and simultaneously generates up to 4 time/activity histograms. The system is pre-programmed, with easy-to-operate push-button control. Image information can be accessed as rapidly as 6 images per second.

## Nuclear parts and service in 8 hours or less.

When your nuclear equipment needs service, GE will provide parts and professionals . . . fast. Our highly trained nuclear service specialists are strategically located throughout the country. One is located near you, for fast response. And General Electric has developed a new computerized parts inventory system. This new service links over 30 GE parts depots nationwide, and keeps them fully stocked at all times. You receive parts from the nearest depot, usually within 8 hours. Transportation costs are minimized, and your nuclear equipment is back serving patients sooner.

Unmatched equipment; the latest diagnostic software; and prompt, reliable service: that's the GE commitment to nuclear medicine. Find out how that commitment can benefit your department. Talk to your GE representative about the systems shown here and our full line of nuclear equipment.

General Electric Medical Systems,
Milwaukee, Toronto, Madrid.

# GE: for the newest in nuclear.

GENERAL ELECTRIC

# The first automatic dosecalibrator with a hard-copy data printer system for NRC (AEC) record keeping


*The Melécord data card — permanent documentation of all pertinent information*

# melétron & melécord

## Your key to accurate dosecalibration and error-free records

**Now you can assay, compute dose, and get an instrument-verified printout—in just 30 seconds.**

**Melétron**—Programmed sequenced instruction eliminates operator errors. All you do to assay a radionuclide is insert the proper key—from the 33 isotope keys now available, with others to come as they are needed—your insurance against instrument obsolescence.

The melétron calculates the volume to administer (in 0.1 ml increments from 0.1 to 99.9) for all patient doses (in 10 uCi increments from 10 uCi to 99.99 mCi.) Accuracy is ± 5%, traceable to a reference dosecalibrator calibrated against 16 known standards at the National Bureau of Standards June 20, 1975.

Range capability is up to 10 curies. Lets you handle high-activity Mo 99/Tc 99m generators. Melétron's automatic ranging eliminates manual selection—and another chance for operator error. Background subtraction is also automatic, and design of the ionization chamber will allow a 3/16" lead shield. The large chamber accommodates all standard size vials and syringes, and even an entire generator eluate for checking Mo 99 breakthrough.

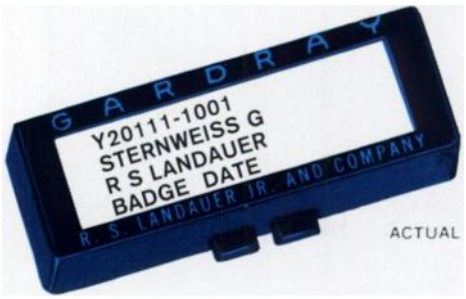
**Melécord prints permanent copies of all functions—the vital part of your record keeping system.** You get hard copy in triplicate. Saves time. Prevents errors. Makes NRC (AEC) accountability far easier.

Melécord also prints the exact time and date of each assay automatically, while it alternately displays them on a digital calendar/clock on the front panel, and Melécord can be factory programmed to generate three lines for printing institution identification on each data card.

To find out how easy it is to solve your dosecalibration and record-keeping problems, call RADX—the innovators in nuclear medicine.

RADX P. O. Box 19164 • Houston, Texas 77024 • 713/468-9628

# "Make the best available better!"



ACTUAL SIZE

"Work on the ultimate, but in the meantime, make the best available better."

Our people have always accepted the challenge and it's what makes us the leader.

We agree that all things considered the Landauer Gardray 8 film badge system is the best available personnel dosimeter. And, although we are always looking for the ultimate, we have continued to work hard and invest money and time to make it better.

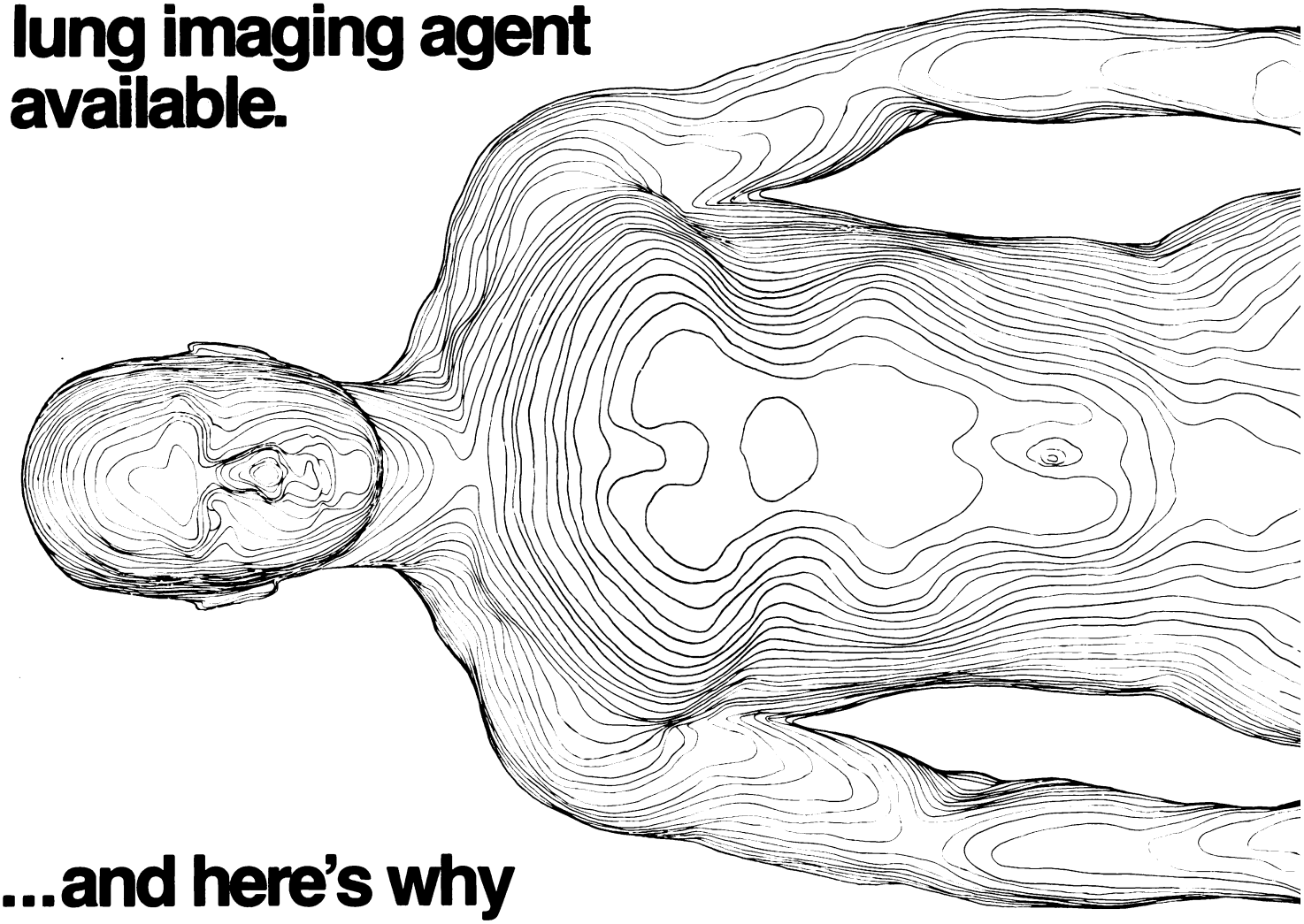
Greatly simplified ordering procedures – permanently encoded unique numbering of film, which is independent of film darkening – new improved techniques for analyzing the film for anomalies that may affect the "meaning" of the exposure and new N.R.C. annual statistical summary reports available now, are just some of the ways our people are working hard to make it better for you.

Write or call for more details.

Landauer

**R.S. LANDAUER JR. & CO.** A tech/ops COMPANY
Glenwood Science Park
Glenwood, Illinois 60425 . (312) 755-7000

# STILL! the simplest, quickest to prepare lung imaging agent available.



# ...and here's why

**Simple, two-step procedure.** Not an ampul, not a frozen material. No waiting, no complicated procedures or specialized equipment required. Just two easy steps and you're ready to assay and inject.

**Uniform particle size, excellent labeling efficiency.** Particle size meets or exceeds Bureau of Biologics standards; 90% in 5-60 micron range. Excellent labeling efficiency when reconstituted with a compatible technetium 99m.

**Won't agglomerate in the vial,** loses virtually no labeling for 8 hours (if stored between 2°C. and 8°C.).

**Ideal for the busy lab.** Recommended amount of 99mTc for reconstitution high enough to allow numerous scans from a single vial.

| | | |
|---|---|---|
| **Squibb Macrotec®** Aggregated Albumin (Human) | **1. Add 1-3 ml. of 99mTc**. Maintain shielding at all times.** | **2. Shake vigorously for 10-15 seconds.** |
| **Mallinckrodt TechneScan™ MAA** Aggregated Albumin (Human) | **1.** Remove reaction vial from *freezer* and *wait approximately 5 minutes* for contents to come to room temperature. | **2.** Add 99mTc** Maintain shielding at all times. |
| **3M Albumin** Microspheres (Human) | **1.** Add 4-10 ml. of 99mTc** | **2.** Shield completely and vigorously shake for 5-15 seconds. |
| **Medi+Physics Lungaggregate™ Reagent** Aggregated Albumin (Human) | **1.** Shake *ampul* vigorously to suspend particles. | **2.** Open ampul. |

*Emphasis added by Squibb to point out certain differences in procedures.*

## MACROTEC® (Aggregated Albumin [Human])

Macrotec (Aggregated Albumin [Human]) is a sterile, non-pyrogenic, lyophilized preparation of aggregated albumin. Each vial of the preparation contains 0.08 mg. tin as chloride, 1.5 mg. denatured human serum albumin, and 10 mg. Normal Serum Albumin (Human).

**INDICATIONS:** For use in perfusion lung imaging as an adjunct to other diagnostic procedures.

**CONTRAINDICATIONS:** At present there are no known contraindications to the use of this product.

**WARNINGS:** Radiopharmaceuticals should not be administered to patients who are pregnant, or during lactation, unless the benefits to be gained outweigh the potential hazards.

Ideally, examinations using radiopharmaceuticals, especially those elective in nature, of a woman of childbearing capability, should be performed during the first few (approximately 10) days following the onset of menses.

Since $^{99m}$Tc is excreted in milk during lactation, formula-feedings should be substituted for breast-feedings.

Radiopharmaceuticals should be used only by physicians who are qualified by specific training in the safe use and handling of radionuclides produced by nuclear reactor or particle accelerator and whose experience and training have been approved by the appropriate government agency authorized to license the use of radionuclides.

*Note:* Macrotec (Aggregated Albumin [Human]) is not radioactive. However, after $^{99m}$Tc is added, adequate shielding of the resultant preparation should be maintained.

**PRECAUTIONS:** In the use of any radioactive material, care should be taken to insure minimum radiation exposure to the patient consistent with proper patient management, and to insure minimum radiation exposure to occupational workers.

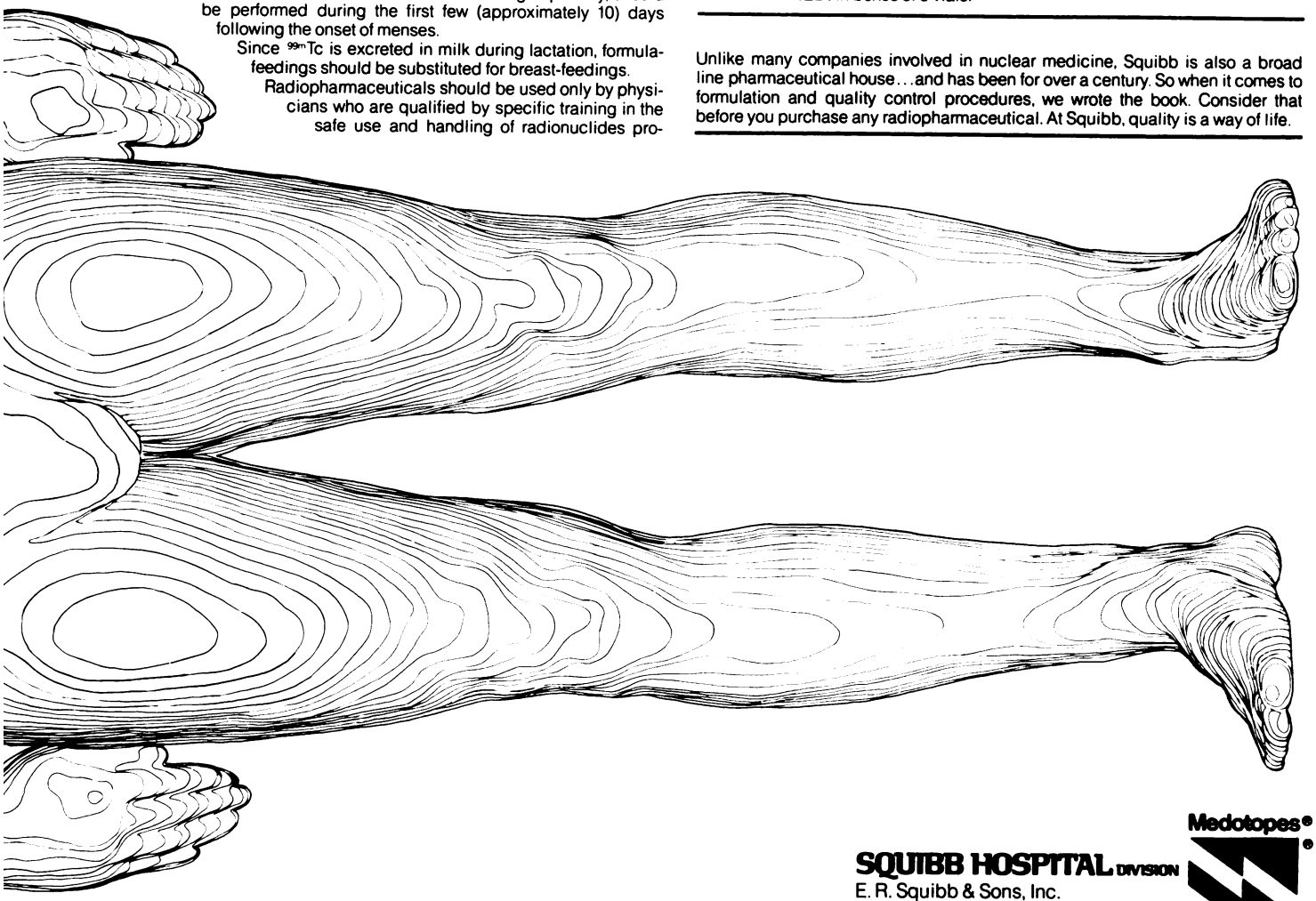
Aseptic technique is essential in the preparation of Technetated (Tc-99m) Aggregated Albumin (Human).

**ADVERSE REACTIONS:** At present, adverse reactions have not been reported following the administration of this product.

For full prescribing information, consult package insert.

**HOW SUPPLIED:** In boxes of 5 vials.

Unlike many companies involved in nuclear medicine, Squibb is also a broad line pharmaceutical house...and has been for over a century. So when it comes to formulation and quality control procedures, we wrote the book. Consider that before you purchase any radiopharmaceutical. At Squibb, quality is a way of life.



Medotopes®

**SQUIBB HOSPITAL DIVISION**
E. R. Squibb & Sons, Inc.
Princeton, N.J. 08540



H606-504

**3.** Gently agitate vial for few seconds. **4.** *Allow to stand for 15 minutes* at room temperature. **5.** Visually inspect vial for presence of large aggregates. *If present, do not use.* **6.** *Agitate* to effect homogenous suspension of the aggregated albumin.

**Recommended maximum activity: 60 mCi.

**3.** Remove vial from shield (with forceps) and place in center of operating *ultrasonic bath* containing 3/4" of water. Bath should be protected by *lead glass or bricks.* *Ultrasound for 5 minutes.*

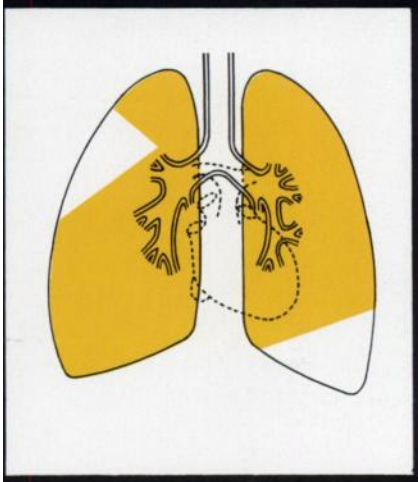
**Recommended maximum activity: 30 mCi.

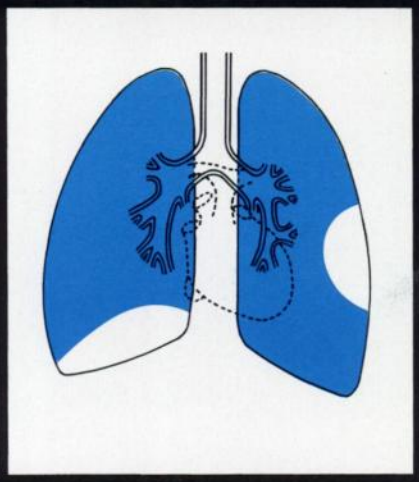
**3.** Withdraw (very slowly) 1.5-2.0 ml. of aggregate from ampul with *syringe.* **4.** Inject (very slowly) syringe contents into *mixing vial.* **5.** Wrap mixing vial in *absorbent paper disc* and place in lead shield. **6.** Add 0.5-2.0 ml. of 99mTc** in saline into shielded mixing vial. Shake vigorously for at least 30 seconds. *Incubate* at room temperature *for 2-5 minutes.* **7.** Shake contents vigorously just before removing aliquot intended for patient use.

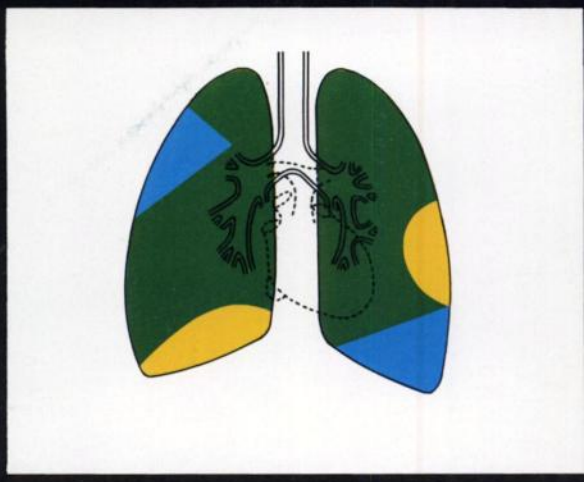
**Recommended maximum activity: 25 mCi/ml.

**Recommended maximum activity: 50 mCi.

*Based on manufacturers' product information. **NOTE: See manufacturers' package inserts before the preparation of any of these products.**





# Perfusion + Ventilation: The two together are diagnostically better.

The ventilation-perfusion ratio $\left(\frac{\dot{V}}{\dot{Q}}\right)$ is the crucial factor determining the regional oxygen partial pressure. This can be evaluated by assessing the gas exchange occurring in any part of the lung. The single most *sensitive* non-invasive test for diagnosing Pulmonary Embolus is the perfusion lung image.[1] However, pulmonary diseases, such as chronic obstructive lung disease, infectious diseases, and neoplasms are all characterized by altered arterial blood flow. Therefore the most reliable way to increase the *specificity* of perfusion lung imaging is to add a Xenon 133 ventilation study.[2]

[1]Urokinase Pulmonary Embolism Trial. A National Cooperative Study. Circulation (Suppl 11) 47:11-61. 1973 (April)

[2]Wagner, Henry N. Jr., Strauss, H. William. *Radioactive Tracers In The Differential Diagnosis of Pulmonary Embolism.* Progress in Cardiovascular Diseases, Vol. XVII, No. 4 (January/February), 1975.

## Pulmolite™–Stannous Macroaggregated Human Serum Albumin Agent.

**Indications:** Technetium Tc 99m MAA is indicated as a lung imaging agent to be used as an adjunct in the evaluation of pulmonary perfusion.
Specifically, the distribution of the agent reflects regional pulmonary perfusion and may be helpful in the evaluation of such clinical conditions as pulmonary embolus, chronic obstructive lung disease, congenital anatomic abnormalities, and pulmonary abscess. It can also be used in conjunction with a suitable liver imaging agent for the performance of lung-liver scans to detect subphrenic abscesses.
**Contraindications:** The safety of aggregated albumin in patients with right-to-left cardiac shunts has not been demonstrated, and its use in such patients is contraindicated. The use of Tc 99m macroaggregated albumin is contraindicated in persons with a history of hypersensitivity reactions to products containing human serum albumin.
**Warnings:** Although not reported to date, the possibility of allergic reactions should be considered in patients who receive multiple doses. This radiopharmaceutical preparation should not be administered to pregnant or lactating women, or persons under 18 years of age unless the benefits to be gained outweigh the potential hazards.
Ideally, examinations using radiopharmaceuticals, especially those elective in nature of a woman of childbearing capability should be performed during the first few (approximately 10) days following the onset of menses.
Theoretically, the intravenous administration of any colloid material such as aggregated albumin imposes a temporary small mechanical impediment to blood flow. While this effect is probably physiologically insignificant in most patients, the administration of aggregated albumin is possibly hazardous in acute cor pulmonale and other states of severely impaired pulmonary blood flow. Although not reported with NEN's Tc 99m Aggregated Albumin, the literature contains four reports of deaths occurring after the administration of aggregated albumin to patients with pre-existing severe pulmonary hypertension.
**The contents of the vial before preparation are not radioactive. However, after the Pertechnetate Sodium Tc 99m is added, adequate shielding of the final preparation must be maintained.**
Radiopharmaceuticals should be used only by physicians who are qualified by specific training in the safe use and handling of radionuclides produced by a nuclear reactor or particle accelerator and whose experience and training have been approved by the appropriate governmental agency authorized to license the use of radionuclides.
The labeling reactions involved in preparing the agent depend on maintaining the tin in the reduced state. Any oxidant present in the Pertechnetate Sodium Tc 99m supply may thus adversely affect the quality of the prepared agent. Hence, Pertechnetate Sodium Tc 99m containing oxidants, or other additives, should not be employed without first demonstrating that it is without adverse effect on the properties of the resulting agent.
**Precautions:** The contents of the vial are sterile and non-pyrogenic. It is essential that the user follows the directions carefully and adheres to strict aseptic procedures during preparation of the product.
PULMOLITE Agent should be used within 8 hours after reconstitution with Pertechnetate Sodium Tc 99m. Refrigerate after reconstitution.
If blood is withdrawn into the syringe, unnecessary delay prior to injection may result in clot formation in situ.
As in the use of any other radioactive material, care should be taken to minimize radiation exposure to the patient, consistent with proper management, and to insure minimum radiation exposure to the occupational workers.
**Adverse Reactions:** Although no adverse reactions have been reported using NEN Technetium Tc 99m Aggregated Albumin, rare instances of hemodynamic or idiosyncratic reactions to other preparations of Tc 99m labeled macroaggregated albumin have been recorded.
**Dosage and Administration:** The recommended intravenous dose range for the average patient (70kg) is 2 to 4 millicuries.
For ease and accuracy in dispensing the prepared agent, it is recommended that prior to reconstitution, concentrated Pertechnetate Sodium Tc 99m be further diluted to a minimum volume of 5ml with fresh, preservative-free, sterile Sodium Chloride Injection (U.S.P.)
The patient dose should be measured by a suitable radioactivity calibration system immediately prior to patient administration. Resuspend particles in syringe immediately prior to injection by repeated inversion of the syringe. (If blood is drawn into syringe, any unnecessary delay prior to injection may lead to clot formation in situ). Do not backflush the syringe. Slow injection is recommended, and for optimum results, imaging should begin as soon as possible after injection.
**How Supplied:** PULMOLITE Stannous Macroaggrated Human Serum Albumin Agent is supplied as a package of five (5) vials, sterile and non-pyrogenic, each vial containing in lyophilized form:

| | |
|---|---|
| Denatured Human Serum Albumin | – 1.5mg |
| Normal Human Serum Albumin | – 10mg |
| Sodium Chloride | – 10mg |
| Stannous Chloride | – 0.012-0.07mg |

PULMOLITE Agent contains no preservative; after reconstitution the shielded vial should be stored at 2° to 8°C.
Included in each package is one (1) package insert and a strip of six (6) radiation labels.

## Xenon Xe 133 Gas (CALIDOSE™) Dispensing System.

**Indications:** Inhalation of Xenon Xe 133 gas has proved valuable for the evaluation of pulmonary function and for imaging the lungs. It may also be applied to assessment of cerebral flow.
**Contraindications:** To date, no known contraindications to the use of Xenon Xe 133 gas have been reported.
**Warnings:** This radopharmaceutical should not be administered to pregnant or lactating women unless the benefits to be gained outweigh the potential hazards.
Ideally, examinations using radiopharmaceuticals, especially those elective in nature, of a woman of childbearing capability should be performed during the first few (approximately 10) days following the onset of the menses.
Radiopharmaceuticals should be used only by physicians who are qualified by specific training in the safe use and handling of radionuclides produced by nuclear reactor or particle accelerator, and whose experience and training have been approved by the appropriate governmental agency authorized to license the use of radionuclides.
**Precautions:** As in the use of any other radioactive material care should be taken to insure minimum radiation exposure to the patient, consistent with proper patient management, and to insure minimum radiation exposure to occupational workers. Expired Xenon Xe 133 gas should be controlled in a manner that is in compliance with the appropriate governmental agency regulations.
Xenon Xe 133 adheres to some plastics and rubber and should not be allowed to stand in tubing or respirator containers. Such unrecognized loss of radioactivity from the dose for administration may render the study non-diagnostic. Xenon Xe 133 gas delivery systems, i.e., respirators or spirometers, and associated tubing assemblies must be leakproof to avoid loss of radioactivity into the laboratory environs not specifically protected by exhaust systems.
**Adverse Reactions:** To date, no adverse reactions based on the use of Xenon Xe 133 gas have been reported.
**Dosage and Administration:** Xenon Xe 133 gas is administered by inhalation from closed respirator systems or spirometers.
The suggested activity range employed for inhalation by the average adult patient (70 kg) is:

Pulmonary function including imaging: 2-30 mCi in 3 liters of air.
Cerebral blood flow: 10-30 mCi in 3 liters of air.

The patient dose should be measured by a suitable radioactivity calibration system immediately prior to administration.
**How Supplied:** The Xenon Xe 133 gas is supplied as part of the Calidose™ system, consisting of 2 ml unit dose vials and the Calidose dispenser* for shielded dispensing.
Normally vials containing either 10 or 20 mCi/vial, packed up to 5 vials per shield tube, are supplied. Vial sets containing up to 100 mCi/vial are available.

*Patent Pending


**New England Nuclear**
**Radiopharmaceutical Division**
Atomlight Place, North Billerica, Mass. 01862
Telephone 617-667-9531
Los Angeles: 213-321-3311 Miami: 305-592-0702

Canada: NEN Canada Ltd., 2453 46th Avenue, Lachine, Quebec, H7T 3C9, Tel: 514-636-4971, Telex: 05-821808
Europe: NEN Chemicals GmbH, D-6072 Dreieichenhain, W. Germany, Daimlerstrasse 23, Postfach 1240. Tel: (06103) 85034.

Pho/Gamma® LFOV™

# Three peaks make a beautiful view

Searle's large field of view scintillation camera, in its standard configuration, is the only instrument of its type which allows you to set window width and energy level on 3 independent analyzers for unique isotopes and special studies...*the only one* which lets you take full advantage of the diagnostic potential in multi-peak nuclides such as Gallium 67. This is a great advantage in soft tissue studies where high sensitivity and superior resolution are vital.

**LARGE SELECTION OF COLLIMATORS**

To sharpen your images even more, the Pho/Gamma LFOV offers a large assortment of converging and parallel hole collimators designed and developed by Searle Radiographics. There is a significant improvement in the resolution of deep-seated structures with converging collimation. In renal studies, for example, the images possess such clarity that it is possible to obtain even *oblique* views of diagnostic quality. Converging collimation also brings enhanced sensitivity to the imaging of small organs.

The large field of view with parallel hole collimation can simultaneously image both kidneys or both lungs. Thus, where a standard field of view camera requires 2 studies, the Pho/Gamma LFOV routinely does the job with only one.

**EASE OF OPERATION**

The Pho/Gamma LFOV has eleven factory pre-set isotope windows for operator convenience. Automatic peaking assures remarkable reproducibility from study to study and from day to day.

**IMPROVED ELECTRONIC DESIGN**

New ratio correction circuitry allows wider window widths, shortens study times, reduces motion artifact and increases patient throughput. Other electronic innovations include pulse-pair pile-up rejection and event buffering circuitry. As a result, the Pho/Gamma LFOV is capable of count rates up to 200,000 cps, which is sufficient for even highly specialized techniques such as dynamic cardiac studies.

The introduction of the Pho/Gamma LFOV in 1975 was a milestone in nuclear imaging. Since then, this advanced instrument has earned a reputation as the finest, most versatile scintillation camera you can buy. Today, clinicians rely on the Pho/Gamma LFOV for improved diagnostic clarity, shortened study times and greater patient comfort in lung, brain, whole body bone, renal and abdominal (liver) blood flow studies.

**INSTRUMENTATION BACKED BY SUPERIOR SERVICE**

Searle Service is one of the largest, highly trained Service Organizations in the nation. This trained and knowledgeable group is dedicated to maintaining highest quality instrument performance in your laboratory.

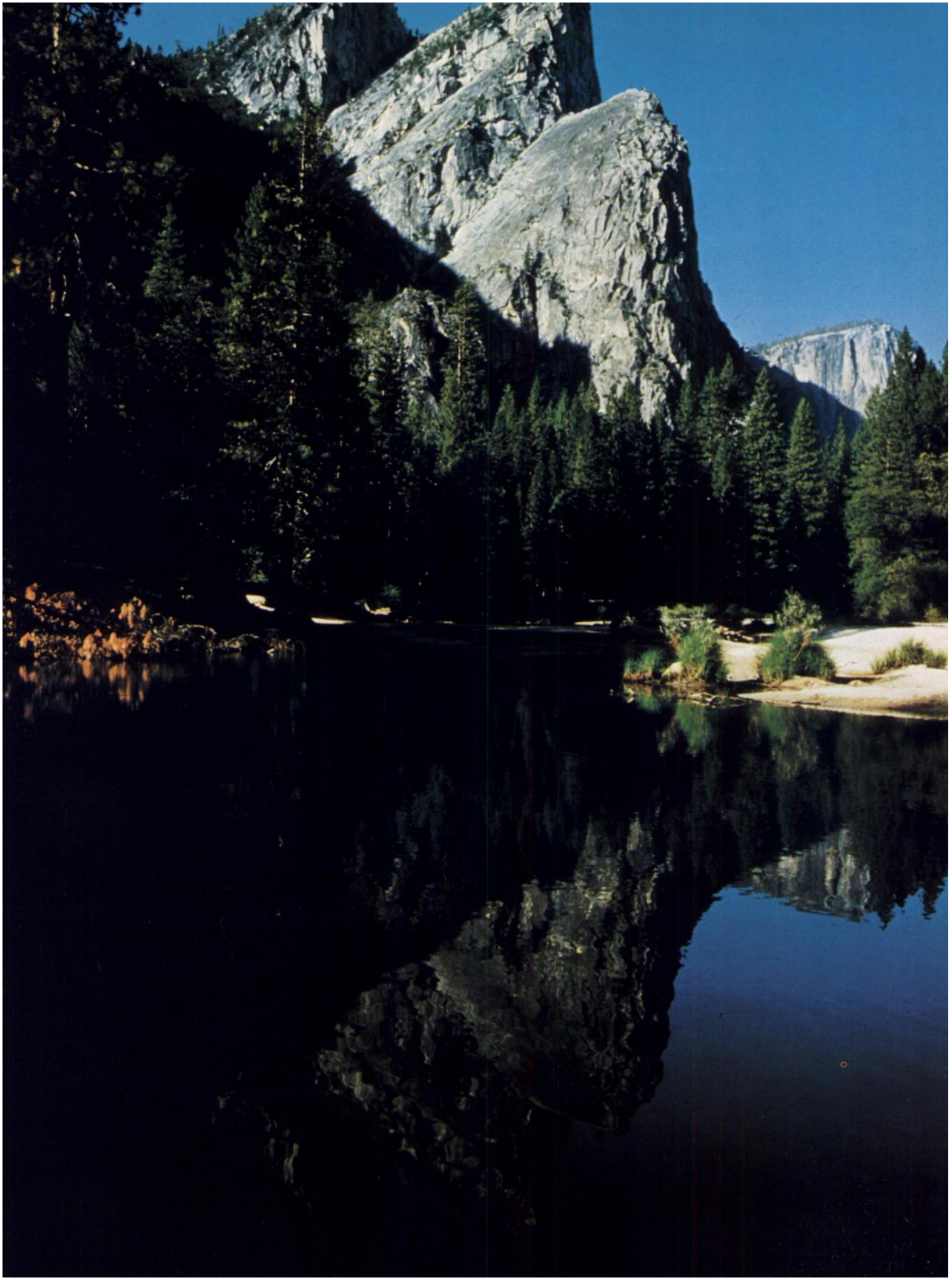
*For more information about the Pho/Gamma LFOV system, including the unique Micro Dot™ Imager and Scintiscan™ Whole Body Table, call your Searle representative or write: Searle Radiographics, Inc., 2000 Nuclear Drive, Des Plaines, IL 60018. Telephone: (312) 298-6600.*

SEARLE

**Searle Radiographics, Inc.**
Subsidiary of G. D. Searle & Co.

IMAGING:
The Living Art

SR 535



# Advances in Low~Cost

Originally color displays were regarded by a large section of the medical physics profession as merely a pretty gimmick.

However it became apparent that the color display was of significant use in viewing successive frames in dynamic examinations.

Varian continued work on color displays and have produced such a display that provides good quality images in the following modes.

- Color scales with identification.
- Color curves with annotation.
- Color regions of interest outlines with identification
- Color contours with identification
- Color isometrics with identification
- Multiple screens at remote locations

Varian physicists feel that, if the black and white STATOS® hardcopy is to be used as a definitive clinical record, the color display is more than adequate as a volatile display.

Accordingly, any system where the modified Tektronix monochrome display is standard, it may be replaced by a color display for a price reduction.

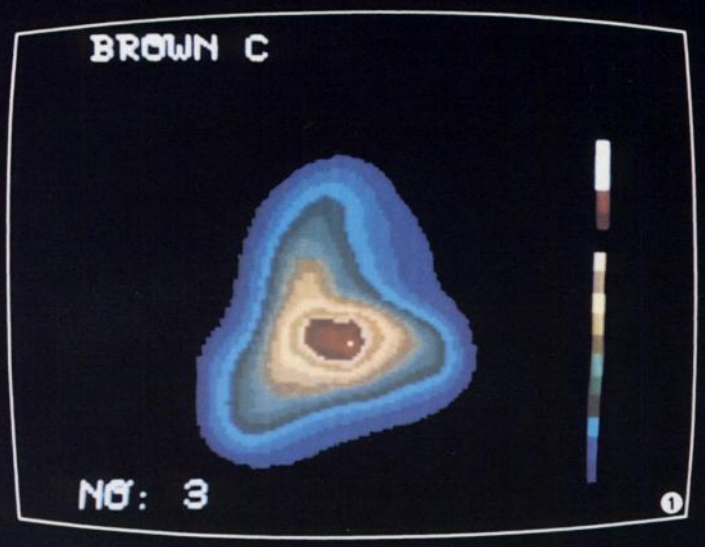
1. Color Scale of Embolized Lung in Left Lateral View
2. Contour Map of Embolized Lung in Left Lateral View
3. Dynamic Liver Examination showing Frame no 30 and Interactive Formation of Regions of Interest
4. Isometric View of Sum Matrix of Liver Dynamic Examination
5. Display of Completed Regions of Interest as shown in frame 3 (above)
6. Curves formed from Regions of Interest as shown in frame 5 (left)

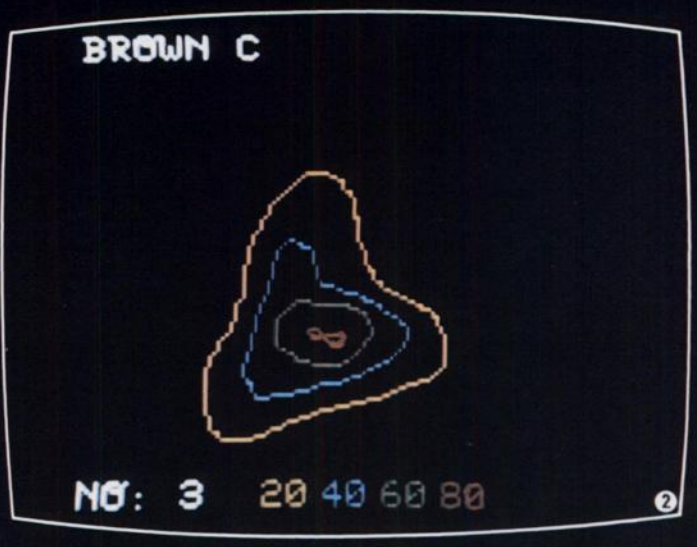
varian
Radiation Division

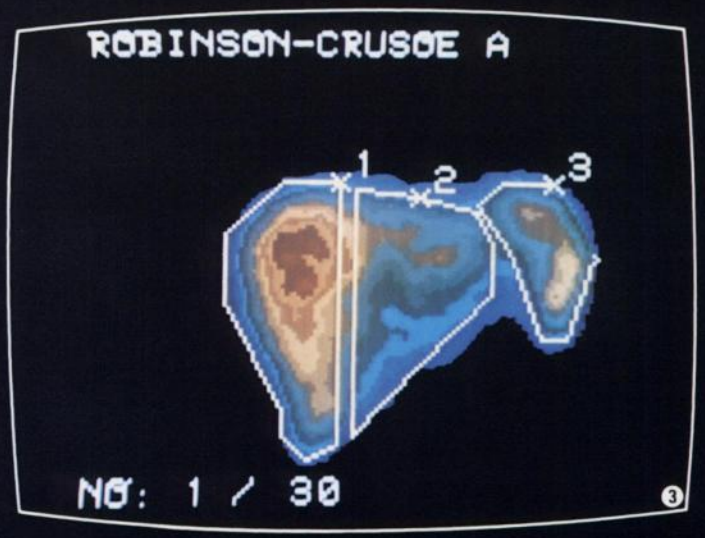
611 Hansen Way, Palo Alto, California 94303, USA.
Telephone: (415) 493-4000

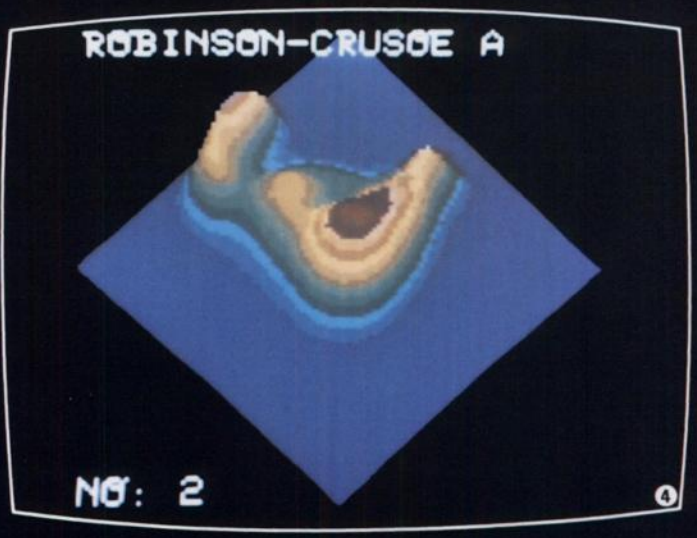
European enquiries: Molesey Road, Walton-on-Thames, Surrey, England. Telephone: (093 22) 28971 Telex: 261351

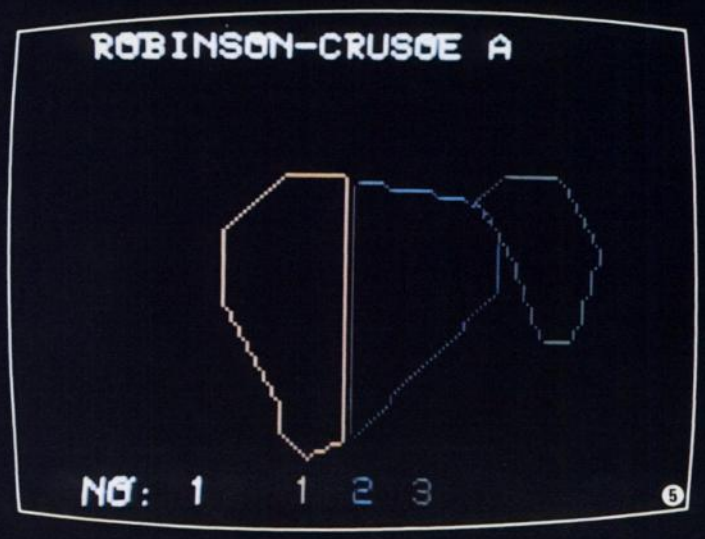
# Multiple~Screen Color Displays from varicam

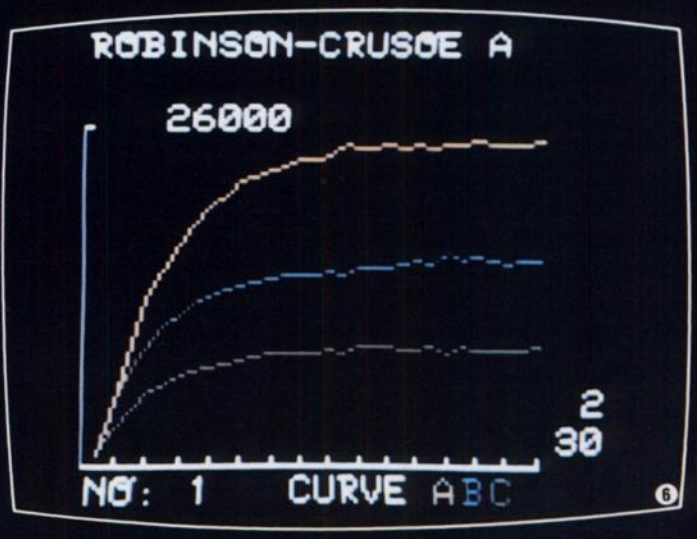


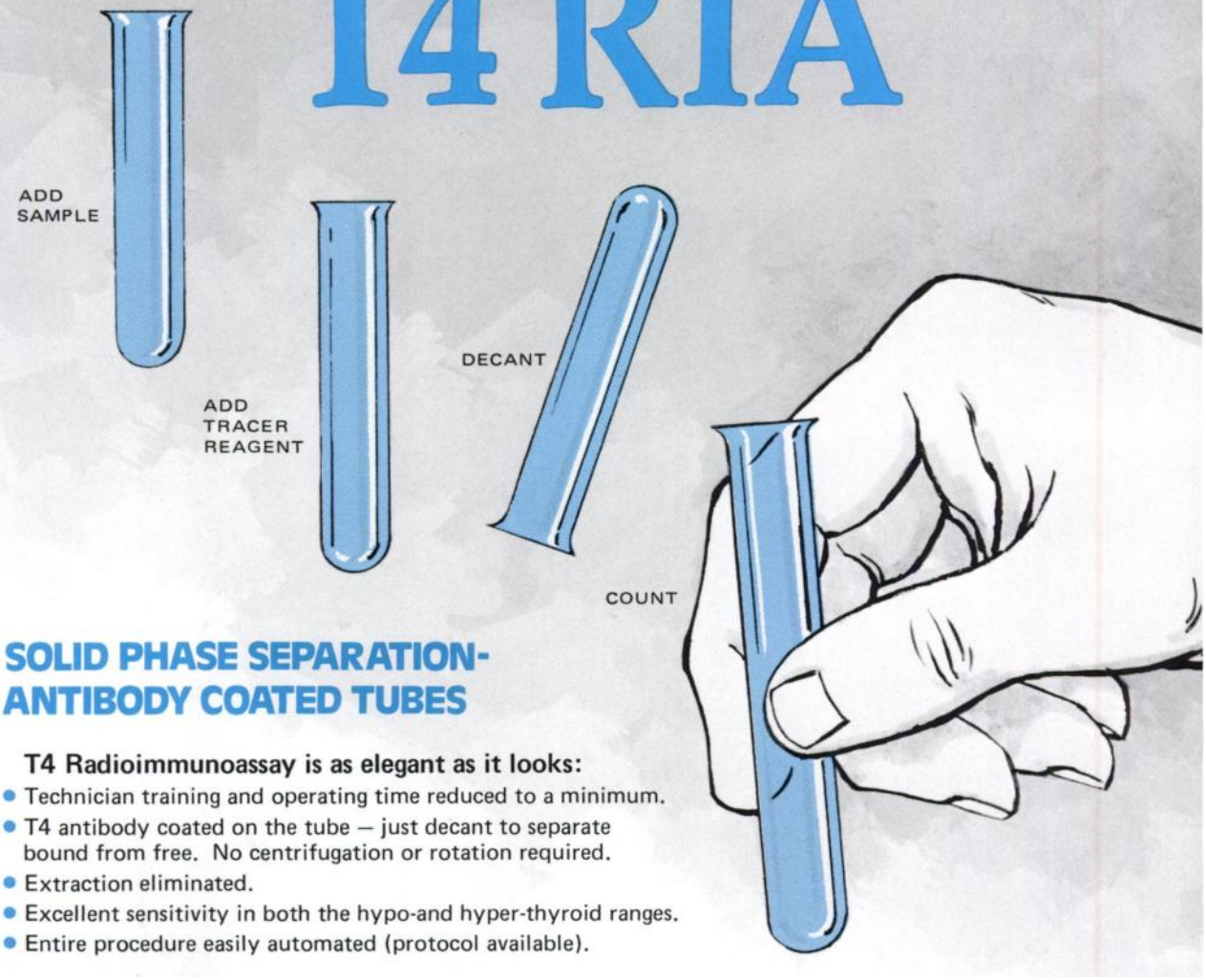



# Clinical Assays GammaCoat™ T4 RIA




## SOLID PHASE SEPARATION- ANTIBODY COATED TUBES

**T4 Radioimmunoassay is as elegant as it looks:**

- Technician training and operating time reduced to a minimum.
- T4 antibody coated on the tube – just decant to separate bound from free. No centrifugation or rotation required.
- Extraction eliminated.
- Excellent sensitivity in both the hypo-and hyper-thyroid ranges.
- Entire procedure easily automated (protocol available).

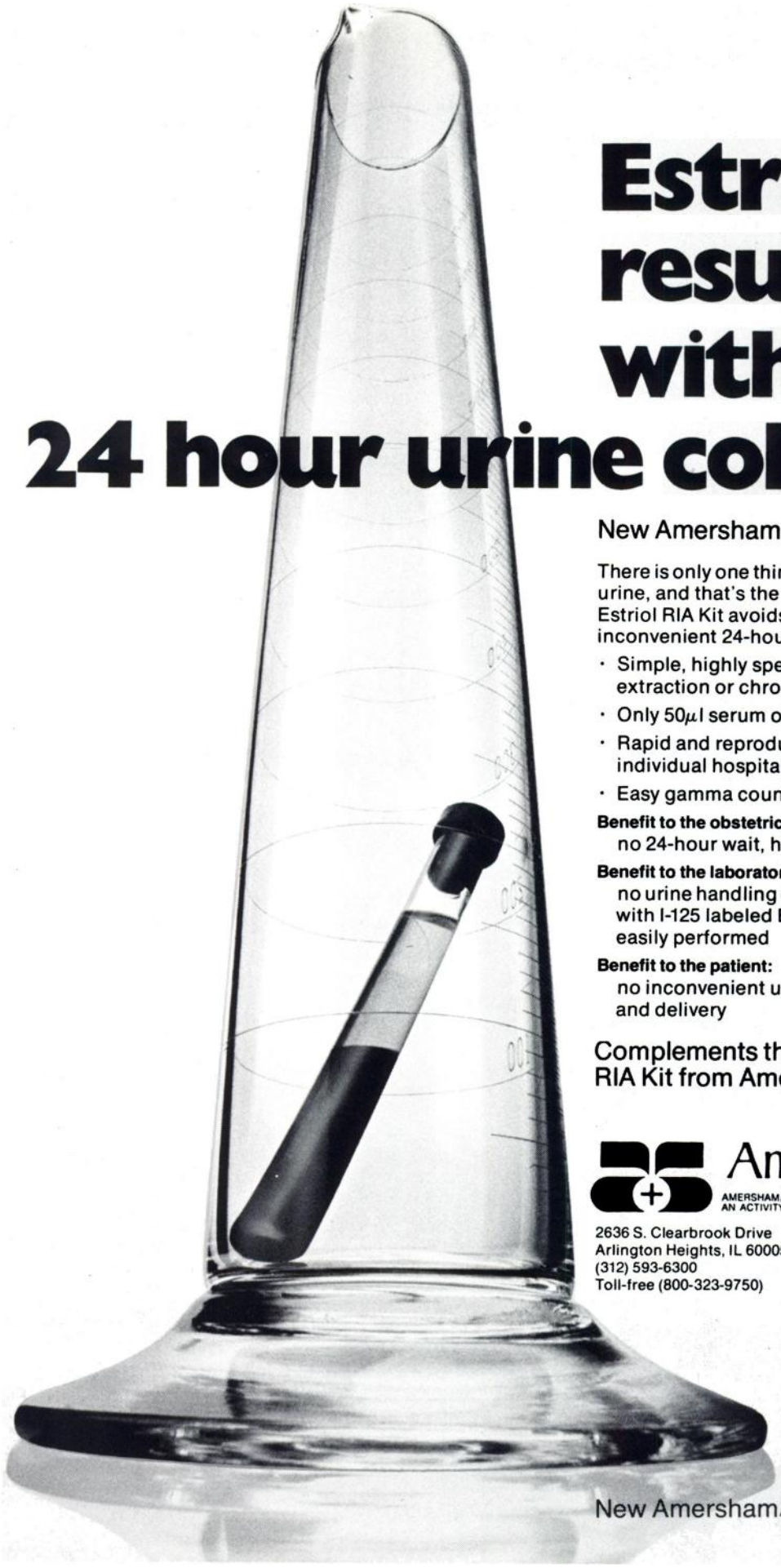
**Protocol:**

- **Add sample directly into GammaCoat tube.**
- **Add Tracer-Buffer Reagent.**
- **Incubate – for 45 minutes at room temperature.**
- **Decant or Aspirate.**
- **Count – the tube is counted for as little as 30 seconds.**

For further information call toll free at 1-800-225-1241 (in Massachusetts call collect 617-492-2526) or TWX (710-320-6460) or write:

Clinical Assays, Inc.

237 BINNEY STREET
CAMBRIDGE, MASS. 02142
(617) 492-2526



# Estriol results without 24 hour urine collection

## New Amersham/Searle Estriol RIA Kit

There is only one thing wrong with measuring estriol in urine, and that's the urine. Amersham/Searle's new Estriol RIA Kit avoids the time consuming and inconvenient 24-hour urine collection.

- Simple, highly specific RIA method—no solvent extraction or chromatography.
- Only 50$\mu$l serum or plasma sample.
- Rapid and reproducible results. 5-8% C.V. in an individual hospital.
- Easy gamma counting with I-125 labeled Estriol.

**Benefit to the obstetrician:**
no 24-hour wait, high reliability

**Benefit to the laboratory:**
no urine handling or purifying, easy gamma counting with I-125 labeled Estriol, single or serial estimations easily performed

**Benefit to the patient:**
no inconvenient urine collection, storage, handling and delivery

## Complements the clinically-proven HPL RIA Kit from Amersham/Searle

Amersham/Searle

AMERSHAM/SEARLE CORPORATION
AN ACTIVITY OF G. D. SEARLE & CO. AND THE RADIOCHEMICAL CENTRE

2636 S. Clearbrook Drive
Arlington Heights, IL 60005
(312) 593-6300
Toll-free (800-323-9750)

In Canada
400 Iroquois Shore Road
Oakville, ONT
(416) 844-8122
Toll-free (1-800-261-5061)

New Amersham/Searle **Estriol RIA Kit**

# DIAGNOSTIC ISOTOPES

## Our "Customer Service Division" is our entire company

At Diagnostic Isotopes, we never ask you to contact our "Customer Service Division" or some other branch of our company. Our *entire* company exists only to provide you with radiopharmaceuticals that help you get definitive images.

We are not a subsidiary or sub-division of some giant corporation that also sells drug store items or machinery. Our only reason-for-being is to produce quality diagnostic kits and prepared radiopharmaceuticals.

To be effective, we focus *all* of our energy and resources on serving those engaged in nuclear medicine. We must assure you of a quality product, dependable delivery and competitive pricing. At Diagnostic Isotopes we have to be this good; we have no other businesses to fall back on.

---

**diagnostic isotopes incorporated**

123 Pleasant Avenue, Upper Saddle River, New Jersey 07458
Telex 134408 • Phone: (201) 825-2310
**(Call Toll Free — 800-631-7020)**

**"OUR QUALITY HELPS YOUR IMAGE"**