I-125 Seed

A look at the "seed"

One view and type of "seed" construction and shipment options.
Chemistry

- The radioactive I-125 is adsorbed on a 99.99% pure silver rod measuring 3.0 mm.
Loading

- The “active element” is loaded into a titanium shell
Laser Welding

- Each shell is laser welded
• Each seed is then visually inspected
Leak Test

- Each seed must be leak tested
Survey

- Each seed is surveyed and the activity determined.
Storage

- Seeds are stored by activity.
Filling an Order

- Each seed is again inspected and a 10% assay of the batch is performed.
How Many Times is the Seed Inspected?

1. 1\textsuperscript{st} weld after making the shell
2. 2\textsuperscript{nd} weld after making the seed
3. Leak Tested to find micro-fractures
4. During assay of each seed
5. During counting for each order
How Does the Seed Look?

- The solid silver rod shows superior visibility on a x-ray.
- The solid silver rod design also provides the largest cross-section of any seed marker.
What about Dosimetry

- The solid silver rod provides a uniform distribution of the iodine-125.
- Spheres are subject to size variations creating dosimetry variations.
More about Dosimetry

- The **Solid Silver Rod** provides consistent dosimetry.
- Spheres can separate, causing variations in dosimetry from one seed to another.
How are the seeds shipped?

- Loose
- Mick™ Cartridges
- Pre-Loaded in Needles
- Stranded and Loaded in Needles
Loose Seeds

• Loose Seeds
  - The activity you want on the day you want.
Mick™ Cartridges

• Seeds can be loaded into Mick™ cartridges.
  - Disposable
  - Shielded-Disposable
What is a Mick™

- Small cartridge with up to 15 seeds
- Uses a special “gun” to implant the seeds
- Allows for versatility in seed placement
- Hard to match treatment plan
Shipping Seeds / Micks™

1/4" LEAD TOP

1/8" LEAD WALL

1/4" LEAD BOTTOM

SAFETY-SEAL

PLASTIC COVER
Pre-Loaded into Needles

- Pre-Loaded per requested treatment plan.
Stranded Seeds

• Seeds placed in strands according to requested treatment plan