

Isotope Use in Industrial Applications



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ASSOCIATION (IIA)**

**CIRMS PRESENTATION
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Cobalt-60 Sources: Vital to World Healthcare



- Over 45% of all medical devices are sterilized with gamma, other applications include food irradiation, pharmaceuticals, biologicals...
- Over 200 large industrial irradiators, numerous smaller units
- Cumulative over 800 million curies (roughly 80,000 sources or 400,000 container loads) have been safely shipped worldwide
- In over 50 years of shipping experience, there has never been an incident



Status of Cobalt-60 Usage – Healthcare Products



- > 50 large commercial gamma irradiators in the USA and are estimated to sterilize approximately 200 million cubic feet healthcare products, with 17 large-scale irradiators are owned and operated by 8 multi-national medical device companies
- In the USA approximately 45% of single use medical devices are sterilized with gamma radiation
- Factors in selection of the sterilization method: temperature sensitivity, complexity of design, material compatibility, packaging requirements, process control and reproducibility, economics and time to market

Status of Cobalt-60 Usage – Food Irradiation



- Several US facilities including Sterigenics, Steris Isomedix and Food Tech Services Inc (FTSI) use cobalt-60 to irradiate food products; such as spices, food ingredients, meat products, animal feed, and pet treats.
- Spices have been commercially irradiated since 1986 and approximately one-third of the commercial spices consumed in the United States, some 79,379 metric tons (175 million lbs.), are irradiated annually.
- Volume of irradiated produce has tripled to in last 2-3 years. Imported produce has grown to 30M lbs
- Current estimates are that approximately 18 million pounds of irradiated ground beef and poultry are marketed in the United States annually

Communications – Important Mandate

- Website – monthly average is 6,000 visitors and 38,000 page views



- Newsletter - distribution to 2000 email addresses



iiA Current Activities and Initiatives



- Addressing problems associated with cobalt transport around the world, along with ISSPA (the International Source Suppliers and Producers Association).
- Revisiting the sterility assurance level issue. For some products, could a SAL greater than 10^{-6} provide the desired safety level? This topic is being addressed in collaboration with AAMI.
- Promoting the use of irradiation for safer food
 - Pursuing food irradiation approvals in North America in conjunction with FIPA, the Food Irradiation Processors Alliance, a north American grouping of radiation processors.
 - Assisting in the Internationalisation of food irradiation standards including the new ISO 14470 standard and by anticipating to the development of guidelines for the application of irradiation processing as a phytosanitary treatment in conjunction with the IAEA. The draft guideline has been submitted to the APPPC (Asia Pacific Plant Protection Commission).
 - Involved in promoting a sensible revision to the European food irradiation regulations.
- Discussing challenges of sterilising ‘advanced products’ such as drug-device combination products.
- Discussing challenges being faced by developing technologies such as X-ray processing.
- Representing the industry at the IAEA (International Atomic Energy Agency) through NGO status.



Strands:

Healthcare

Food Irradiation

Evolving Applications

Materials

Technology

- Cobalt-60
- E-beam
- X-ray

Workshops

Tour Canadian
Irradiation Centre

Where science and business connect



The 16th global forum for discussion, debate and discovery using industrial electron beam, x-ray and gamma ray technologies.

First Circular - Call for papers and registration opens 1 July 2010

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iiA Organizing the 16th global forum International Meeting of Radiation Processing (IMRP)