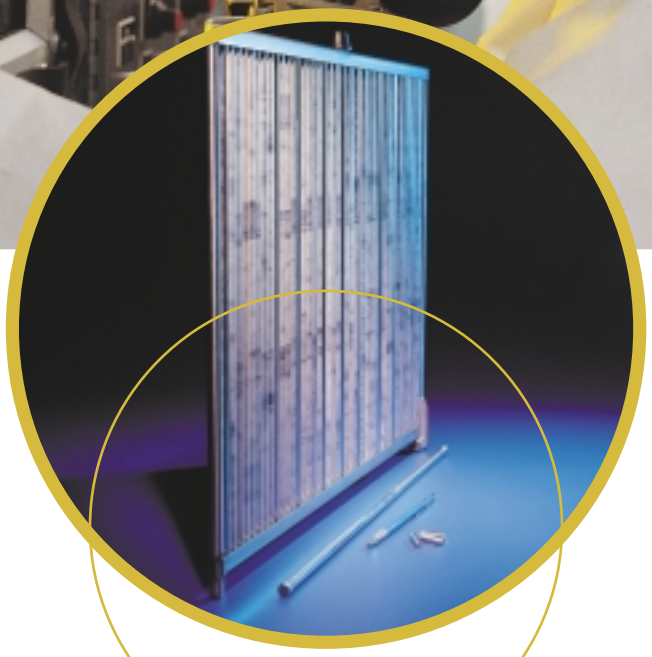
The Source. The Standard.

C-188 COBALT-60



MDS Nordion

Science Advancing Health

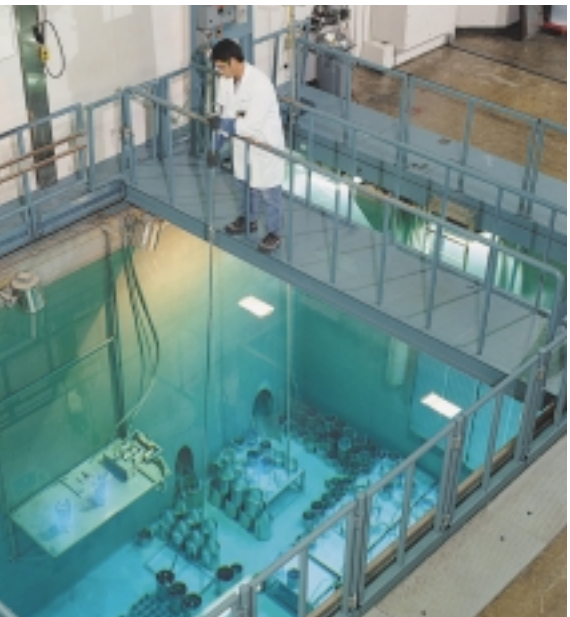
The Gamma Source the World Trusts C-188

Leading the Way

For nearly 40 years, MDS Nordion's C-188 double-encapsulated cobalt-60 source has set the industry standard for power, performance and reliability in gamma processing. That's why today the majority of the world's installed cobalt-60 sources take the form of the MDS Nordion C-188.

Safe, predictable and highly efficient, C-188 sources emit high-energy gamma rays that can be used to eliminate harmful microorganisms from a variety of products – everything from single-use surgical and medical supplies to cosmetics raw materials, spices, poultry and red meat.

Continually building on its history of innovation, service and safety, MDS Nordion is the world's leading supplier of cobalt-60 sources, irradiators, and associated products and services.



Delivering the Goods

MDS Nordion produces its cobalt-60 source material at several world-class Canadian CANDU and international power reactor sites. Determined to meet the 21st century's global demand for cobalt-60, we are continuing to expand our manufacturing and supply capabilities.

MDS Nordion draws on its extensive expertise to provide customers with ongoing support in engineering, source-installation and management services, including:

- source loading-pattern optimization for dose uniformity and irradiator efficiency;
- ongoing technical support, C-188 surveillance, and metallurgical investigations;
- source removal and disposal;
- cobalt source management program with tracking capability;
- irradiator upgrades, refurbishments and safety retrofits; and
- dosimeter calibration services accredited under NIST's NVLAP (National Voluntary Laboratory Accreditation Program).

Through ongoing communication and collaboration, we keep in close touch with our customers, ensuring our ability to advise them of source-replenishment schedules, reconfigurations and removals – every crucial step involved in maintaining peak irradiator performance.

Excellence Without Par

MDS Nordion C-188 cobalt-60 sources meet or exceed all industry standards and regulatory requirements for sealed radioactive sources, such as:

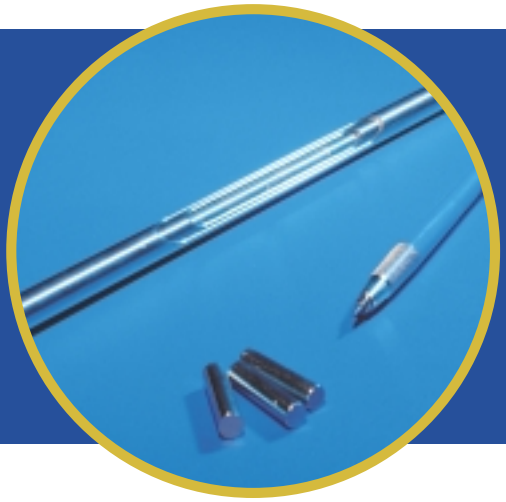
- US Nuclear Regulatory Commission 10 CFR Part 36
- ISO 2919-1999(E) and the equivalent American National Standard ANSI/HPS N43.6-1997, under performance classification E65646
- American National Standard N43.10-1984 Class 5 bend-test requirements
- Special Form Radioactive Material as outlined in the International Atomic Energy Agency Regulation for the Safe Transport of Radioactive Materials under Certificate Number CDN/0010/S-85 of the Canadian Nuclear Safety Commission (CNSC)

Each inner and outer capsule also exceeds the quality program requirements of the Canadian Standards Association (CSA) standard CAN-Z299.2-85. A certificate detailing the results of quality-assurance tests and activity measurements accompanies every shipment of C-188 sources.

FRONT COVER IMAGE: MDS Nordion employee operates remote manipulators at one of many hot cells at MDS Nordion's expanded cobalt operations facility in Ottawa, Canada.

C-188 delivers the power of gamma processing for microbial reduction in:

- single-use surgical and medical supplies
- labware
- packaging materials
- pharmaceutical products
- cosmetics raw materials
- dog chews
- spices
- fruit
- seafood
- poultry
- red meat
- and more



Safety is our Priority

MDS Nordion exceeds safety standards in all its operations.

Extensive fleet of shipping packages

The lead and steel packages used to transport MDS Nordion C-188 sources meet the rigorous safety standards of the International Atomic Energy Agency. The MDS Nordion F-168 Transport Package can carry up to 200 kCi of cobalt-60. Our F-294 can carry 360 kCi of cobalt-60, and is licensed for US intrastate shipping.

Stringent safety testing

Every C-188 capsule component is dimensionally tested to very tight standards. Sample C-188 capsules in every production lot undergo destructive weld testing, and once production is complete, every source weld undergoes a helium leak test followed by an ultrasonic contamination test. Constructed from ASTM 316L stainless steel, these capsules are corrosion resistant and very durable.

MDS Nordion has the capability to accommodate special requests for manufacturing lower activity sources and other source designs.

How we do it

To create its C-188 sources, MDS Nordion welds nickel-plated inactive cobalt-59 slugs into Zircaloy capsules. These capsules are assembled into reactor targets and installed in CANDU reactors. Typically, within 18 to 24 months, the targets achieve the desired cobalt-60 specific activity. They are then removed, disassembled and shipped to MDS Nordion's Ottawa, Ontario manufacturing facility where trained staff double-encapsulate the cobalt-60 into C-188 sources. Following release by Quality Assurance, these sources are shipped to customers around the world.

All MDS Nordion C-188 sources have a one-year warranty* against defect or failure. An additional, optional 20-year warranty* is also available.

*Subject to terms and conditions.

C-188 Specs at a Glance

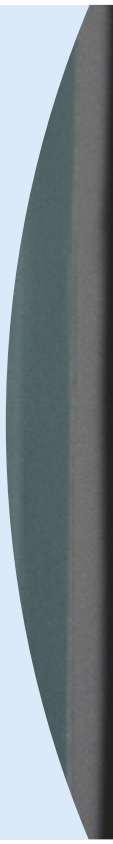
Standard Source Activity Range	Up to 14,250 Ci (527 TBq)
Dimensions	451.6 mm (17.78 inches) in length 11.1 mm (0.437 inches) in diameter
Weight	0.24 kg (0.53 pounds)
Source Rack Arrangement	Customized to individual requirements for optimum dose uniformity

It's About Trust

MDS Nordion has designed and installed more than 120 industrial irradiators around the world, and shipped cobalt to more than 170 irradiator sites. Maintaining close working relationships with national and international regulatory agencies, we help set world standards for the gamma processing industry.

Our safety record is exemplary. Over some 40 years, we have safely and reliably shipped more than 500 million curies of C-188 cobalt-60 sources to customers around the world.

MDS Nordion. Leading performance from a source you trust.



Contact us to find out more about MDS Nordion C-188 sources and Industrial Irradiation systems.

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