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**Americium-241** Used in many smoke detectors for homes and businesses, to measure levels of toxic lead in dried paint samples, to ensure uniform thickness in rolling processes like steel and paper production, and to help determine where oil wells should be drilled.

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**Californium-252** Used to inspect airline luggage for hidden explosives, to gauge the moisture content of soil in the road construction and building industries, and to measure the moisture of materials stored in silos.

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**Nickel-63** Used to detect explosives...and as voltage regulators and current surge protectors in electronic devices.

**Phosphorus-32** Used in molecular biology and genetics research.

**Plutonium-238** Has safely powered at least 20 NASA spacecraft since 1972.
**Polonium-210** Reduces the static charge in production of photographic film and phonograph records.

**Promethium-147** Used in electric blanket thermostats...and to gauge the thickness of thin plastics, thin sheet metal, rubber, textiles and paper.

**Radium-226** Makes lightning rods more effective.

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**Thallium-204** Measures the dust and pollutant levels on filter paper...and gauges the thickness of plastics, sheet metal, rubber, textiles and paper.

**Thorium-229** Helps fluorescent lights to last longer.

**Thorium-230** Provides colouring and fluorescence in coloured glazes and glassware.

**Tritium** Used for life science anti drug metabolism studies to ensure the safety of potential new drugs for self luminous aircraft and commercial exit signs...for luminous dials, gauges and wrist watches...and to produce luminous paint.

**Uranium-234** Used in dental fixtures like crowns and dentures to provide a natural colour and brightness.

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Uranium-235 Fuel for nuclear power plants and naval nuclear propulsion systems...also used to produce fluorescent glassware, a variety of coloured glazes and wall tiles.

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Polonium-210 Reduces the static charge in production of photographic film and phonograph records.

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Thorium-229 Helps fluorescent lights to last longer.

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**Thorium-229** Helps fluorescent lights to last longer.

**Thorium-230** Provides colouring and fluorescence in coloured glazes and glassware.

**Tritium** Used for life science anti drug metabolism studies to ensure the safety of potential new drugs for self luminous aircraft and commercial exit signs...for luminous dials, gauges and wrist watches...and to produce luminous paint.

**Uranium-234** Used in dental fixtures like crowns and dentures to provide a natural colour and brightness.

**Uranium-235** Fuel for nuclear power plants and naval nuclear propulsion systems...also used to produce fluorescent glassware, a variety of coloured glazes and wall tiles.

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Isotopes – choose one isotope and one use for that isotope

**Americium-241** Used in many smoke detectors for homes and businesses, to measure levels of toxic lead in dried paint samples, to ensure uniform thickness in rolling processes like steel and paper production, and to help determine where oil wells should be drilled.

**Calcium-47** Important aid to biomedical researchers studying the cell function and bone formation of mammals.

**Californium-252** Used to inspect airline luggage for hidden explosives, to gauge the moisture content of soil in the road construction and building industries, and to measure the moisture of materials stored in silos.

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**Cobalt-60** Used to sterilise surgical instruments, to improve the safety and reliability of industrial fuel oil burners, and to preserve poultry, fruits and spices.

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**Curium-244** Used in mining to analyse material excavated from pits and slurries from drilling operations.

**Iodine-123** Widely used to diagnose thyroid disorders.

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**Iridium-192** Used to test the integrity of pipeline welds, boilers and aircraft parts.

**Iron-55** Used to analyse electroplating solutions.

**Krypton-85** Used in indicator lights in appliances like clothes washers and dryers, stereos and coffeemakers to gauge the thickness of thin plastics and sheet metal, rubber, textiles and paper...and to measure dust and pollutant levels.

**Nickel-63** Used to detect explosives...and as voltage regulators and current surge protectors in electronic devices.

**Phosphorus-32** Used in molecular biology and genetics research.

**Plutonium-238** Has safely powered at least 20 NASA spacecraft since 1972.
**Polonium-210** Reduces the static charge in production of photographic film and phonograph records.

**Promethium-147** Used in electric blanket thermostats...and to gauge the thickness of thin plastics, thin sheet metal, rubber, textiles and paper.

**Radium-226** Makes lightning rods more effective.

**Selenium-75** used in protein studies in life science research.

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**Strontium-90** Used in survey meters by schools, the military and emergency management authorities.

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