

Attachment 3: EXEMPT SOURCE DESCRIPTIONS - EZA

<u>Product Code</u>	<u>Description</u>	<u>Chemical Form</u>	<u>Physical Form</u>	<u>Product Application (utilization by end-user)</u>
E-XXX-CAR	TEDA impregnated or Silver Zeolite Plastic or Metal Cartridges – cartridges are filled with charcoal or silver zeolite introduced with radioactivity.	Sodium Iodide for all Iodine cartridges. Dry Chlorides for all others	Solid	Used by environmental labs for calibration of HPGe detector systems and to establish counting efficiencies.
E-XXX-FIL	Glass fiber/air filters. Radioactive isotope is uniformly deposited and evaporated onto Mylar which is then adhered to the filter and sealed.	Dry Chlorides	Solid	These filters simulate a filter that is used to collect air samples or wipes/smears used for contamination checks. Used for calibrating HPGe detector systems, alpha/beta counting systems and health physics instrumentation.
E-XXX-GAS	33mL Glass Sphere – glass sphere is filled with an unpressurized radioactive gas.	Kr-85, Xe-131m or Xe-133 with nitrogen as carrier	Gas	This product is used to calibrate HPGe detector systems or used to transfer gas to other types of geometries for calibration of monitoring systems
E-XXX-GAS	Gas Cylinder – gas cylinders are filled with a pressurized radioactive gas.	Kr-85, Xe-131m or Xe-133 with nitrogen as carrier	Gas	Gas cylinders are used to calibrate monitoring systems in power plants and are also used by instrument manufactures to calibrate equipment.
E-XXX-LIQ	Glass Vials - glass ampoules are filled with calibrated radioactive solutions. The glass ampoule is then flame sealed.	Chlorides in 0.1M to 4M HCL, Nitrates in 0.1M to 4M HNO3	Liquid	Used by environmental labs, universities and HP departments for making calibrated dilutions for calibration of detectors/instruments.
E-XXX-LIQ	Reagent Bottles - glass reagent bottles are filled with calibrated radioactive solutions. The glass reagent bottle is then flame sealed.	Chlorides in 0.1M to 4M HCL, Nitrates in 0.1M to 4M HNO3	Liquid	Typically used by environmental labs or other facilities for making tracer solutions for environmental sample analysis.
E-XXX-PLN	Planchets – radioactive isotope is uniformly deposited and evaporated onto Mylar and sealed. The Mylar is then adhered to the bottom of the planchets with or without filter media.	Dry Chlorides	Solid	Widely used for gross alpha/beta measurements and alpha/beta measurements and can be used to simulate wipes. Typical customers are drinking water labs, universities, hospitals, environmental labs.
E-XXX-QUE	Glass or plastic LSV (liquid scintillation vial) – vials are filled with liquid scintillation cocktail and desired isotope and sealed.	Chlorides or Nitrates dissolved in Liquid Scintillation Cocktail	Liquid/Gel	Used by customers to determine counting efficiencies of specific isotopes in liquid scintillation counting systems.

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E-XXX-UNQ	LSV Source - same as above but provided as a set of sources in glass flame sealed liquid scintillation vials.	Organic Compound labeled with H-3 or C-14 dissolved in toluene or dodecane	Liquid	Used for daily checks of liquid scintillation counting systems.
E-XXX-ROD	Acrylic rods filled at one end with an isotope (backfilled with resin) in a point source configuration.	Dry Chlorides or Nitrates	Solid	Typically used in nuclear medicine applications.
E-XXX-SAN	Marinelli Beaker - specially formed container specifically designed to sit on an HPGe detector head. The Marinelli container is filled with homogenized sand that has an isotope uniformly introduced.	Dry Sulfides	Solid	Used by environmental labs for calibrating HPGe detector systems and establishing counting efficiencies.
E-XXX-SAN	Plastic Bottle - Plastic bottle is filled with homogenized sand that has an isotope uniformly introduced.	Dry Sulfides	Solid	Used by environmental labs for calibrating HPGe detector system and establishing efficiency.
E-XXX-SIM	Glass Sphere - 33mL glass spheres filled with radioactive styrofoam beads which simulate the density of gas.	Chlorides dissolved in organic solvents and dried on Styrofoam beads	Solid	Used by power plants for calibration of HPGe detector systems and to establish counting efficiencies.
E-XXX-SIM	Off Gas -15mL glass vials filled with radioactive styrofoam beads used to simulate gas.	Chlorides dissolved in organic solvents and dried on Styrofoam beads	Solid	Used for calibration of HPGe detector systems and to establish counting efficiencies.
E-XXX-SIM	Marinelli Beaker - specially formed container specifically designed to sit on an HPGe detector head. The Marinelli container is filled with radioactive styrofoam beads.	Chlorides dissolved in organic solvents and dried on Styrofoam beads	Solid	Used by environmental labs, state labs, instrument manufactures and Utilities for calibrating HPGe detector systems and establishing counting efficiencies.

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<u>Product Code</u>	<u>Description</u>		<u>Physical Form</u>	<u>Product Utilization</u>
E-XXX-SVE	Marinelli Beaker - specially formed container specifically designed to sit on an HPGe detector head. The Marinelli container is filled with homogenized vegetation that has an isotope uniformly introduced.	Dry Sulfides	Solid	Used by environmental labs, state labs, instrument manufactures and Utilities for calibrating HPGe detector systems and establishing counting efficiencies.
E-XXX-SVE	Plastic Bottle - plastic bottle is filled with uniformly homogenized vegetation spiked with a radioactive isotope.	Dry Sulfides	Solid	Used by environmental labs, state labs, instrument manufactures and Utilities for calibrating HPGe detector systems and establishing counting efficiencies.
E-XXX-SOL	LSV Source - glass or plastic vials are filled with a uniformly mixed radioactive polyester resin to simulate the density of a water sample.	Dry Sulfides incorporated in a polyester resin	Solid	Used by environmental labs, state labs, instrument manufactures and Utilities for calibrating HPGe detector systems and establishing counting efficiencies.
E-XXX-SOL	Marinelli Beaker Gamma Source -specially formed container specifically designed to sit on an HPGe detector head. The Marinelli container is filled with a uniformly mixed radioactive polyester resin to simulate the density of a water sample.	Dry Sulfides incorporated in a polyester resin	Solid	Used by environmental labs, state labs, instrument manufactures and Utilities for calibrating HPGe detector systems and establishing efficiencies.
E-XXX-SOL	Plastic Bottle - plastic bottle is filled with a uniformly mixed radioactive polyester resin to simulate the density of a water sample.	Dry Sulfides incorporated in a polyester resin	Solid	Used by environmental labs, state labs, instrument manufactures and Utilities for calibrating HPGe detector systems and establishing efficiencies.