

SECTION FOUR – FIRE AND EXPLOSION DATA

FLASHPOINT (METHOD):	N/A
CONDITIONS OF FLAMMABILITY:	None
EXTINGUISHING MEDIA:	Required to extinguish surrounding fire. Water to cool radiation device holder.
SPECIAL FIRE FIGHTING PROCEDURES:	Intense heat may melt source containment housing causing release of radiation. Attempt to maintain a 30 meter safety zone from the fire impinged vehicle or source container. ** No excessive harmful results have been known to result from this type of packaging by the manufacturer or Trican Well Service.
LOWER EXPLOSION LIMIT (% BY VOL):	N/A
UPPER EXPLOSION LIMIT (% BY VOL.):	N/A
AUTO-IGNITION TEMPERATURE:	N/A
HAZARDOUS COMBUSTION PRODUCTS:	May release gamma radiation under very extreme conditions.
SENSITIVITY TO STATIC DISCHARGE:	NO
SENSITIVITY TO MECHANICAL IMPACT:	NO

SECTION FIVE – REACTIVITY DATA

CHEMICAL STABILITY:	Stable, Half life of 30.2 years, principle mode of decay is beta particle emission. Maximum beta energy of 1.74 million electron volts. Gamma photon energies: 0.662 million electron volts; abundance 93.5%
INCOMPATIBLE MATERIAL:	N/A
CONDITIONS OF REACTIVITY:	N/A
HAZARDOUS DECOMPOSITION PRODUCTS:	Beta particle emissions.
HAZARDOUS POLYMERIZATION:	N/A

SECTION SIX – TOXICOLOGICAL PROPERTIES

ROUTES OF ENTRY:	Inhalation, eyes, skin, ingestion
ACCUTE OVER EXPOSURE EFFECTS:	INHALATION – N/A EYE CONTACT – N/A SKIN CONTACT – Radioactive exposure of bare skin can result from prolonged contact exposure. Latent burns. INGESTION – Radioactive exposure of internal organs can result from ingestion of metal.
CHRONIC OVEREXPOSURE EFFECTS:	May cause irritation/dermatitis. Cancer of the skin.
SENSITIZATION:	N/A
CARCINOGENICITY:	Prolonged exposure can be carcinogenic.
MUTAGENICITY:	N/A
TERETOGENICITY:	It is recommended that pregnant women not work with this material after the first trimester.

REPRODUCTIVE TOXICITY: N/A

SYNERGISTIC PRODUCTS: N/A

SECTION SEVEN – PREVENTATIVE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: Normal PPE for daily work. The ALARA principle of exposure to the product is to be maintained (keep exposure As Low As Reasonable Achievable .

SPECIFIC ENGINEERING CONTROLS: The source holder has been manufactured to withstand extreme conditions. Leak tests of source holders must be conducted yearly and analyzed. Radiation protection dictates that we minimize the time a person remains in the area of radiation as the amount of exposure occurs as a function of duration of exposure, less time means less exposure. Maximize the distance from the radiation source as the intensity of the radiation falls off sharply the further you are from the source. Use shielding wherever it is necessary to reduce or eliminate exposure.

LEAK AND SPILL PROCEDURES: **Follow recommendation outlined in the emergency response section of the Nuclear Gauge Transportation Manual (chapter 10)** Keep people away from the spill/accident site. Attempt to prevent further injury or loss. Report immediately to the appropriate supervisor. Record all pertinent information. Do NOT allow anyone to approach closer than 30meters of the source until a radioactive survey has been completed.

WASTE DISPOSAL: The Radiation Safety Officer or his designate will arrange for the removal and /or disposal of the damaged gauge.

HANDLING/STORAGE REQUIRMENTS: Handling and storage requirements of the Canadian Nuclear Safety Commission are to be adhered to. Only TRAINED PERSONEL are allowed to work with nuclear gauges.

SPECIAL SHIPING INFORMATION: Transportation of Nuclear Gauges is regulated under the Canadian Nuclear Safety Commission, Packaging and Transport of Nuclear Substances Regulations. Certain government licenses, documents, placards, labels and signs must be in place. Only workers trained in the transport of radioactive gauges will have care and control of nuclear a gauge.

SECTION EIGHT – FIRST AID MEASURES

INHALATION: N/A

INGESTION: N/A

EYES: N/A

SKIN: N/A. Maximum permissible whole body dose equivalent for persons not classified as Atomic Radiation Workers is 0.005 sievert of radiation a year. If symptoms of radiation sickness (skin burns, excessive and rapid loss of hair) develops, see a physician immediately.

SECTION NINE – CLASSIFICATION

SHIPPING NAMES: RADIOACTIVE MATERIAL, TYPE A PACKAGE, SPECIAL FORM.
TDGR Class (es): Class 7, UN 3332, PG. II, ERAP – Not Required
WHMIS Class (es): D2B
DSL:

SECTION TEN – PREPARATION INFORMATION

Prepared by: Trican Well Service Ltd. Phone Number: (403) 266-0202
Prepared on: January 14, 2002
Supersedes: July 23, 2005
Reviewed by: Safety Publications Group

References: 1) Suppliers' Literature. 2) Trican Well Service research and Development. 3) NIOSH Pocket Guide to Chemical Hazards June, 1997. 4) The University of Vermont SIRC MSDS Archives. 5) TDGR Clear Language, October 2001.

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END OF MATERIAL SAFETY DATA