

## MATERIAL SAFETY DATA SHEET

EFFECTIVE DATE: January 1, 1994

**XENON Xe 133 GAS**

### SECTION 1. PRODUCT IDENTIFICATION

**Synonyms:** Xenon-133.

**Formula CAS No.:** 14932-42-4.

**Molecular Weight:** 133.

**Manufacturer:** Mallinckrodt Medical, Inc.  
2703 Wagner Place  
Maryland Heights, MO 63043

**Chemical Formula:** Xe-133 in unit dose glass vials.

**Hazardous Ingredients:**  
CAS#: 14932-42-4 Radioactive Xenon

**Information Telephone Number:** (314) 770-7800  
**Emergency Telephone Number:** (314) 770-7800

### SECTION 2. PRECAUTIONARY MEASURES

**Read Package Insert Prior to Use**

**CAUTION! RADIOACTIVE MATERIAL**

Radioactive drugs must be handled by qualified personnel in conformity with regulations appropriate to the government agency authorized to license the use of this radionuclide. The vial containing the drug should be kept within its container or within heavier shielding. Avoid contact with the radioactive contents which would cause unnecessary exposure to radiation.

### SECTION 3. EMERGENCY/FIRST AID

Remove promptly any contamination from the skin, eyes, or clothing.  
SEE SECTION 8.

**Proper DOT Shipping Name:** Radioactive Material, N.O.S., 7, UN2982

### SECTION 4. PHYSICAL DATA

**Appearance:** Colorless gas sealed in a 2 mL unit-dose glass vial.

**Odor:** Odorless.

**Solubility:** Not applicable.

**Boiling Point:** -108°C @ 1 mm.

**Melting Point:** No information found.

**Radioactivity:** 10 or 20 mCi/vial on the calibration date.

**Concentration:** 5 or 10 mCi/mL on the calibration date.

**Specific Activity:** >1 mCi/μg of Xenon gas on the calibration date.

**Half-Life:** ca. 5.245 days.

**Vapor Density (Air=1):** No information found.

**Vapor Pressure (mm Hg):** No information found.

**Evaporation Rate:** No information found.

### SECTION 5. FIRE AND EXPLOSION INFORMATION

**Fire:**

Not considered to be a fire hazard.

**Explosion:**

Not considered to be an explosion hazard.

**Fire Extinguishing Media:**

Use any means suitable for extinguishing surrounding fire.

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

**XENON Xe 133 GAS**

## XENON Xe 133 GAS

### SECTION 6. REACTIVITY DATA

**Stability:**

Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:**

Inert gas; does not decompose.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

No information found.

### SECTION 7. LEAK/SPILL DISPOSAL INFORMATION

If the product is received in a leaking condition or any loss or release of the radioactive contents occurs, notify your Radiation Safety Department and Mallinckrodt at (314) 770-7800. All cleanup operations should be performed according to the Standard Operating Procedures (SOPs) established for your facility. Radioactive waste should be disposed of according to SOPs established by your Radiation Safety Officer.

Ensure compliance with local, state and federal regulations.

### SECTION 8. HEALTH HAZARD INFORMATION

#### A. EXPOSURE/HEALTH EFFECTS

**Inhalation:**

Not expected to be a health hazard via inhalation.

**Ingestion:**

Not applicable.

**Skin Contact:**

Not expected to produce any acute adverse health effects.

**Eye Contact:**

No adverse effect expected.

**Chronic Exposure:**

The health risks associated with chronic radiation exposure (cancer, leukemia, genetic and teratogenic effects) are believed to involve levels of radiation exposure which are much higher than those permitted occupationally.

**Aggravation of Pre-existing Conditions:**

No information found.

## XENON Xe 133 GAS

### B. FIRST AID

**Inhalation:**

Not expected to require first aid measures.

**Ingestion:**

Not applicable.

**Skin Exposure:**

Not expected to require first aid measures.

**Eye Exposure:**

Not expected to require first aid measures.

### C. TOXICITY DATA

It is widely accepted by the scientific community that exposure to sufficient quantities of ionizing radiation can potentially cause harmful biological effects which include cancer, leukemia, and genetic and teratogenic effects.

## SECTION 9. OCCUPATIONAL CONTROL MEASURES

**Airborne Exposure Limits:**

—NRC Occupational concentration limit is  $1 \times 10^{-5}$   $\mu\text{Ci/mL}$  of air.

—NRC Nonoccupational concentration limit is  $3 \times 10^{-7}$   $\mu\text{Ci/mL}$  of air.

**Ventilation System:**

Ventilation systems should vent directly to the atmosphere and should move sufficient air to dilute the Xenon-133 to permissible concentrations within the facility and outside the facility.

**Personal Respirators: (NIOSH Approved)**

Not expected to require personal respirator usage.

**Skin Protection:**

Not expected to require skin protection.

**Eye Protection:**

Not expected to require eye protection.

**Precautions:** Rooms where Xenon-133 gas is used should be kept under negative pressure with respect to adjacent areas.

## SECTION 10. STORAGE AND SPECIAL INFORMATION

Store at 15°C to 30°C. Handling time should be kept to a minimum, and appropriate shielding should be used. Special handling devices, such as the Xenotron™ I Xenon Gas Dispenser, should be used. Storage and disposal of product should be controlled in a manner which is in compliance with the appropriate regulations of the federal and state government agency authorized to license the use of this radionuclide.

# XENON Xe 133 GAS

## ADDENDUM TO MATERIAL SAFETY DATA SHEET

### REGULATORY STATUS

#### Hazard Categories for SARA

#### Section 311/312 Reporting

Acute Chronic Fire Pressure Reactive

X

(Chem.Key: MHXNN)

<u>Product or Components of Product:</u>	<u>SARA EHS Sect. 302 RQ (lbs.)</u>	<u>SARA EHS Sect. 302 TPQ (lbs.)</u>	<u>SARA Section 313 Chemicals Name List</u>	<u>SARA Section 313 Chemicals Chemical Category</u>	<u>CERCLA Sec. 103 RQ</u>	<u>RCRA Sec. 261.33</u>
XENON Xe 133 GAS (14932-42-4)	No	No	No	No	1000 Ci (3.7 E 13 Bq)	No

**SARA Section 302 EHS RQ:** Reportable Quantity of Extremely Hazardous Substance, listed at 40 CFR 355.

**SARA Section 302 EHS TPQ:** Threshold Planning Quantity of Extremely Hazardous Substance.

**SARA Section 313 Chemicals:** Toxic Substances subject to annual release reporting requirements listed at 40 CFR 372.65.

**CERCLA Sec. 103:** Comprehensive Environmental Response, Compensation and Liability Act (Superfund). Releases to air, land or water of these hazardous substances which exceed the Reportable Quantity (RQ) must be reported to the National Response Center, (800-424-8802); Listed at 40 CFR 302.4.

**RCRA:** Resource Conservation and Recovery Act. Commercial chemical product wastes designated as acute hazards and toxic under 40 CFR 261.33.

### CALIFORNIA PROPOSITION 65 INFORMATION

The State of California requires that we provide customers and employees in California warnings about reproductive and carcinogenic hazards associated with substances sold in California. Radioactive materials are substances known to the State of California to cause reproductive toxicity. Under Proposition 65, the following warning applies:

**WARNING:** This Product contains a substance known to the State of California to cause reproductive toxicity.

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