



MATERIAL SAFETY DATA SHEET

XENON Xe 133 GAS

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Xenon Xe 133 Gas

Synonyms: Xenon-133

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

Revision Date: January 1, 2003

Information Telephone Number: (888) 744-1414

Emergency Telephone Number: (314) 654-7860

CHEMTREC: 1-800-424-9300

CANUTEC: 613-996-6666

SECTION 2. COMPOSITION, INFORMATION ON INGREDIENTS

Chemical Formula: Xe-133

Chemical Ingredients:

<u>Component</u>	<u>CAS #</u>	<u>Wt %</u>
Xenon Xe 133 Gas	14932-42-4	<0.5%

SECTION 3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION! RADIOACTIVE MATERIAL. Read Package Insert prior to use. Promptly remove any contamination from the skin, eyes, or clothing. 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.

POTENTIAL 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

XENON Xe 133 GAS

SECTION 4. FIRST AID MEASURES

Inhalation:

Notify radiation safety personnel immediately. The amount of material inhaled should be assessed and documented.

Ingestion:

Not applicable.

Skin Exposure:

Not expected to require first aid measures.

Eye Exposure:

Not expected to require first aid measures.

SECTION 5. FIRE FIGHTING MEASURES

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 Instructions: 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.

SECTION 6. ACCIDENTAL RELEASE MEASURES

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) 654-7860. All cleanup operations should be performed according to the Standard Operating Procedures (SOPs) established for your facility and by the NRC or other applicable local, state or federal regulations.

SECTION 7. HANDLING AND STORAGE

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.

SECTION 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Airborne Exposure Limits:

–NRC Occupational concentration limit is
 1×10^{-4} $\mu\text{Ci/mL}$ of air.

Engineering Controls:

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.

Respiratory Protection:

Not expected to require personal respirator usage.

Skin Protection:

Not expected to require skin protection.

Eye/Face 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.

XENON Xe 133 GAS

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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

Odor: Odorless.

Boiling Point: -108°C @ 1 mm.

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

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

Specific Activity: $>1\text{mCi}/\mu\text{g}$ of Xenon gas on the calibration date and time.

Half-Life: ca. 5.245 days.

SECTION 10. STABILITY AND REACTIVITY

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 11. TOXICOLOGICAL INFORMATION

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. For detailed toxicological information on specific components, write to the address listed in Section 1 - Attn: Regulatory Compliance Department.

SECTION 12. ECOLOGICAL INFORMATION

Under ordinary conditions of use and storage, this product is expected to have no adverse environmental impact.

SECTION 13. DISPOSAL CONSIDERATIONS

Xenon Xe 133 Gas is Radioactive Waste until the activity has decayed to nondetectable levels. Radioactive waste must be handled in accordance with procedures established by your Radiation Safety Officer, NRC and other applicable regulations.

SECTION 14. TRANSPORT INFORMATION

DOT (Department of Transportation):

Proper Shipping Name: Radioactive Material, n.o.s.

Hazard Class: 7

Identification Number: UN2982

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantities:

Xe 133 = 1000 Ci (3.7 E 13 Bq)

Releases to air, land or water of these hazardous substances which exceed the Reportable Quantity (RQ) must be reported to the National Response Center at 800-424-8802.

SARA Title III

302 Extremely Hazardous Substances: None

311/312 Hazard Categories: Chronic

313 Toxic substances subject to annual release reporting requirements: None.

RCRA Hazardous Waste Status

Non-hazardous (See Section 13 for additional details.)

California Proposition 65 Warning

This product contains a substance known to the State of California to cause cancer.

Australian Hazchem Code: None allocated.

Australian Poison Schedule: None allocated.

WHMIS: This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

SECTION 16. OTHER INFORMATION

MSDS Status: Revised in accordance with ANSI Guideline Z400.1-1998

NFPA Ratings: Health: 1 Flammability: 0 Reactivity: 0

Product Use: Diagnostic imaging agent

Revision Information: Section 8 updated.

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