

# SAFETY DATA SHEET

according to regulation (EG) Nr. 1907/2006



Date of issue: 28.01.2015

Revision date: 19.01.2017

Revision: 2.1

## SECTION 1. IDENTIFICATION OF THE SUBSTANCES/ MIXTURES AND OF THE COMPANY/ UNDERTAKING

### 1.1 Product identifier

Product name: Xenon (Xe-129 labeled)  
CAS No: 7440-63-3  
EC No.: 231-172-7  
Formula: Xe  
Other means of identification: Xenon

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture: Industrial use. Research purposes. Use as directed.

### 1.3 Details of the supplier of the safety data sheet

Supplier: NUKEM Isotopes Imaging GmbH  
Industriestrasse 13, 63755 Alzenau, Germany  
Telephone: +49 6023 91 1726  
Fax: +49 6023 91 1614  
E-mail: christian.schuch@nukemisotopes.de

### 1.4 Emergency telephone number

Emergency number +1-703-253-4254 (English; Contract No.: 01009)

## SECTION 2. HAZARDS INDICATION

### 2.1 Classification of the substance or mixture

Compressed gas H280  
Full text of H-phrases: see section 2.2

### 2.2 Label elements

Hazard pictograms (GHS-US):



GHS04

Signal word (GHS-US):

Warning

Hazard statements (GHS-US):

H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED  
OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.

Precautionary statements (GHS-US):

P202 - Do not handle until all safety precautions have been read and understood  
P271+P403 - Use and store only outdoors or in a well-ventilated place.  
CGA-PG05 - Use a back flow preventive device in the piping.  
CGA-PG10 - Use only with equipment rated for cylinder pressure.  
CGA-PG06 - Close valve after each use and when empty.  
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C

# SAFETY DATA SHEET

according to regulation (EG) Nr. 1907/2006



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## 2.3 Other hazards

Other hazards not contributing to the classification:

Asphyxiate in high concentrations. Contact with liquid may cause cold burns/frostbite.

## 2.4 Unknown acute toxicity (GHS-US)

No data available

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## SECTION 3. CHEMICAL CHARACTERIZATION

### 3.1 Substance

Name	Product identifier	Content [%]
Xenon (Main constituent)	(CAS No) 7440-63-3 (EC No) 231-172-7	100% Xenon

### 3.2 Mixture

Not applicable

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## SECTION 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

First-aid measures after inhalation:

Remove victim to uncontaminated area wearing self-contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

First-aid measures after skin contact:

Rinse skin with water/shower. If irritation persists, consult a doctor.

First-aid measures after eye contact:

Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Get immediate medical attention.

### 4.2 Most important symptoms and effects, both acute and delayed

No additional information available

### 4.3 Indication of any immediate medical attention and special treatment needed

None.

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## SECTION 5. FIREFIGHTING MEASURES

### 5.1 Extinguishing media

Suitable extinguishing media:

Use extinguishing media appropriate for surrounding fire.

### 5.2 Special hazards arising from the substance or mixture

Reactivity:

No reactivity hazard other than the effects described in sub-sections below.

### 5.3 Advice for firefighters

Firefighting instructions:

Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray.

# SAFETY DATA SHEET

according to regulation (EG) Nr. 1907/2006



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## Protection during firefighting:

Compressed gas: Asphyxiate. Suffocation hazard by lack of oxygen.

## Special protective equipment for fire fighters:

Use self-contained breathing apparatus. Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.

## Specific methods:

Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Stop flow of product if safe to do so.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

### **6.1 Personal precautions, protective equipment and emergency procedures**

#### General measures:

Try to stop release. Evacuate area. Ensure adequate air ventilation. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Stop leak if safe to do so.

### **6.2 Environmental precautions**

Try to stop release.

### **6.3 Methods and material for containment and cleaning up**

No additional information available

### **6.4 Reference to other sections**

See also sections 8 and 13.

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## **SECTION 7. HANDLING AND STORAGE**

### **7.1 Precautions for safe handling**

#### Precautions for safe handling:

Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; Never apply flame or localized heat directly to any part of the container.

### **7.2 Conditions for safe storage, including any incompatibilities**

#### Storage conditions:

Store in a cool, well-ventilated place. Store and use with adequate ventilation. Store only where temperature will not exceed 125°F (52°C). Firmly secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand. Store full and empty containers separately.

## **OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE:**

Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. Never place a container where it may become part of an electrical circuit.

### **7.3 Specific end use(s)**

None.

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## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **8.1 Control parameters**

Xenon (7440-63-3)

ACGIH	Not established
USA OSHA	Not established

### **8.2 Exposure controls**

Appropriate engineering controls:

Oxygen detectors should be used when asphyxiating gases may be released. Systems under pressure should be regularly checked for leakages.

Hand protection:

Wear working gloves when handling gas containers.

Eye protection:

Wear safety glasses with side shields or goggles when transfilling or breaking transfer connections.

Respiratory protection:

Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres.

### **8.3 Environmental exposure controls:**

None necessary.

## **SECTION 9. PHYSICAL/ CHEMICAL PROPERTIES**

### **9.1 Information on basic physical and chemical properties**

Physical state:	Gas
Molecular mass:	129 g/mol
Color:	Colorless.
Odor:	No data available
Odor threshold:	No data available
Melting point:	-112 °C
Freezing point:	No data available
Boiling point:	-108 °C
Flash point:	Not applicable.
Critical temperature:	16.6 °C
Auto-ignition temperature:	Not applicable.
Decomposition temperature:	No data available
Flammability (solid, gas):	No data available
Vapor pressure:	Not applicable.
Critical pressure:	5840 kPa
Relative vapor density at 20 °C:	No data available
Relative density:	1.5
Specific gravity / density:	5.472 kg/m <sup>3</sup> Vapor density at 70°C (21.1°C), 1 atm
Relative gas density:	4.5
Solubility:	Water: 644 mg/l
Log Pow:	Not applicable.

# SAFETY DATA SHEET

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---

Log Kow:	Not applicable.
Explosive properties:	Not applicable.
Oxidizing properties:	None.
Explosive limits:	Non flammable.

## 9.2 Other information

### Additional information:

Gas/vapor heavier than air. May accumulate in confined spaces.

## SECTION 10. STABILITY AND REACTIVITY

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### 10.1 Reactivity

No reactivity hazard other than the effects described in sub-sections below.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

None.

### 10.4 Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5 Incompatible materials

No additional information available

### 10.6 Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11. TOXICOLOGICAL INFORMATION

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### 11.1 Information on toxicological effects

No known toxicological effects from this product. Suffocation hazard by lack of oxygen.

## SECTION 12. ECOLOGICAL INFORMATION

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No ecological damage caused by this product.

## SECTION 13. DISPOSAL CONSIDERATIONS

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### 13.1 Waste treatment methods

#### Waste disposal recommendations:

Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

## SECTION 14. TRANSPORT INFORMATION

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### In accordance with DOT

Transport document description:	UN2036 Xenon, compressed, 2.2
UN-No. (DOT):	UN2036
Proper Shipping Name (DOT):	Xenon, compressed
Department of Transportation (DOT) Hazard Classes:	2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115

# SAFETY DATA SHEET

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Hazard labels (DOT):



2.2 - Non-flammable gas

## **Additional information**

Emergency Response Guide (ERG) Number: 120 (UN2591); 121 (UN2036)

Other information: No supplementary information available.

## **Special transport precautions:**

Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers: Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

## **Transport by sea**

UN-No. (IMDG): 2036  
Class (IMDG): 2 - Gases  
MFAG-No: 121  
Proper shipping name: Xenon

## **Air transport**

UN-No.(IATA): 2036  
Class (IATA): 2  
Civil Aeronautics Law: Gases under pressure/Gases nonflammable nontoxic under pressure  
Proper shipping name: Xenon

## **SECTION 15. REGULATORY INFORMATION**

### **15.1 US Federal regulations**

Xenon (7440-63-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

### **15.2 International regulations**

#### **CANADA**

Xenon (7440-63-3)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification: Class A - Compressed Gas

#### **EU-Regulations**

Xenon (7440-63-3)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

# SAFETY DATA SHEET

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Classification according to Regulation (EC) No. 1272/2008 [CLP]:

Compressed gas H280  
Full text of H-phrases: see section 2.2

## **Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]**

Not classified

## **SECTION 16. OTHER INFORMATION**

### Other information:

When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product.

NUKEM Isotopes Imaging GmbH asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

The opinions expressed herein are those of qualified experts within NUKEM Isotopes Imaging GmbH. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of NUKEM Isotopes Imaging GmbH, it is the user's obligation to determine the conditions of safe use of the product.

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NFPA health hazard:

0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard:

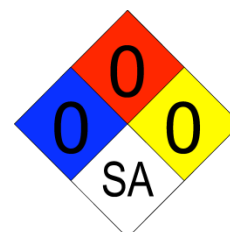
0 - Materials that will not burn.

NFPA reactivity:

0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

NFPA specific hazard:

SA - This denotes gases which are simple asphyxiants.



### Disclaimer

Product is supplied for research and laboratory use only. Not for drug, household or other uses.

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*