1. PRODUCT AND COMPANY IDENTIFICATION

   **Product Name**          HELIUM-3
   **Product Code(s)**       02-01-03
   **UN-Number**             UN1046
   **Recommended Use**       Compressed gas
   **Synonyms**              Helium; Isotopic Helium; "He
   **Supplier Address***
                              ISOFLEX USA
                              P.O. Box 29475
                              San Francisco, CA 94129
                              United States
                              415-440-4433
                              www.isoflex.com
   * May include subsidiaries or affiliate companies/divisions.

2. HAZARDS IDENTIFICATION

   **WARNING!**

   **Emergency Overview**
   Simple asphyxiant
   Contents under pressure
   Intentional misuse of this product can cause serious lung damage or death.
   Keep at temperatures below 52°C / 125°F


   **OSHA Regulatory Status**
   This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

   **Potential Health Effects**

   **Principle Routes of Exposure** Inhalation.

   **Acute Toxicity**

   **Inhalation**
   Simple asphyxiant. May cause suffocation by displacing the oxygen in the air. Exposure to oxygen-deficient atmosphere (<19.5%) may cause dizziness, drowsiness, nausea, vomiting, excess salivation, diminished mental alertness, loss of consciousness and death. Exposure to atmospheres containing 8-10% or less oxygen will bring about unconsciousness without warning and so quickly that the individuals cannot help or protect themselves. Lack of sufficient oxygen may cause serious injury or death.

   **Eyes**
   None known.

   **Skin**
   None known.
3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name: He-3 Helium
CAS No. 14762-55-1
Volume % >99
Chemical Formula He3

4. FIRST AID MEASURES

Eye Contact None under normal use. Get medical attention if symptoms occur.
Skin Contact None under normal use. Get medical attention if symptoms occur.

Inhalation PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF INHALATION OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Conscious inhalation victims should be assisted to an uncontaminated area and inhale fresh air. If breathing is difficult, administer oxygen. Unconscious persons should be moved to an uncontaminated area and, as necessary, given artificial resuscitation and supplemental oxygen. Treatment should be symptomatic and supportive.

Ingestion None under normal use. Get medical attention if symptoms occur.

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flammable Properties Not flammable.
Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Explosion Data

Sensitivity to Mechanical Impact None
Sensitivity to Static Discharge None
Specific Hazards Arising from the Chemical Cylinders may rupture under extreme heat. Continue to cool fire-exposed cylinders until flames are extinguished. Damaged cylinders should be handled only by specialists.

Protective Equipment and Precautions for Firefighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Ensure adequate ventilation. Evacuate personnel to safe areas. Use personal protective equipment. Monitor oxygen level.

Environmental Precautions
Prevent spreading of vapors through sewers, ventilation systems and confined areas.

Methods for Containment
Stop the flow of gas or remove cylinder to outdoor location if this can be done without risk. If leak is in container or container valve, contact the appropriate emergency telephone number in Section 1 or call ISOFLEX USA: 1-415-440-4433.

Methods for Cleaning Up
Return cylinder to ISOFLEX USA.

7. HANDLING AND STORAGE

Handling
Use only in ventilated areas. Never attempt to lift a cylinder by its valve protection cap. Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distance, use a cart designed to transport cylinders. Use equipment rated for cylinder pressure. Use backflow preventive device in piping. Never insert an object (e.g. wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing leak to occur.

Use an adjustable strap wrench to remove over-tight or rusted caps. Close valve after each use and when empty. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier.

Never put cylinders into trunks of cars or unventilated areas of passenger vehicles. Never attempt to refill a compressed gas cylinder without the owner’s written consent. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit. Keep out of the reach of children.

Handle in accordance with good industrial hygiene and safety practice.

Storage
Protect from physical damage. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling. Store in cool, dry, well-ventilated area of non-combustible construction, away from heavily trafficked areas and emergency exits. Keep at temperatures below 52°C / 125°F. Full and empty cylinders should be segregated. Always store and handle compressed gas cylinders in accordance with Compressed Gas Association, pamphlet CGA-P1, Safe Handling of Compressed Gases in Containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines
This product does not contain any hazardous materials with occupational exposure limits established by the region-specific regulatory bodies.

Engineering Measures
Local exhaust ventilation to prevent accumulation of high concentrations and maintain air-oxygen levels at or above 19.5%.

Ventilation
Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/Face Protection
Wear protective eyewear (safety glasses).
Skin and Body Protection

Work gloves and safety shoes are recommended when handling cylinders.

Respiratory Protection

General Use

No special protective equipment required.

Emergency Use

Use positive pressure airline respirator with escape cylinder or self-contained breathing apparatus for oxygen-deficient atmospheres (<19.5%).

Hygiene Measures

Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Colorless.

Odor Threshold

No information available.

Flash Point

No information available.

Decomposition Temperature

No information available.

Freezing Point

No information available.

Water Solubility

8.61 m³/1 kg water @ 20°C and 1 atm

Vapor Pressure

No information available.

Gas Density

@ 21.1°C (70°F) ("NTP"): 0.0078 lb/ft³ (0.125 kg/m³) (0.125 g/ltr) @ 0°C ("STP"): 0.0084 lb/ft³ (0.135 kg/m³) (0.135 g/ltr)

Flammability Limits in Air

Upper

Not applicable.

Lower

Not applicable.

10. STABILITY AND REACTIVITY

Stability

Stable.

Incompatible Products

None known.

Conditions to Avoid

None known.

Hazardous Decomposition Products

None known, based on information supplied.

Hazardous Polymerization

Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

LD50 Oral

No information available.

LD50 Dermal

No information available.

ISOFLEX USA

SDS – Helium-3

3/2014
LC50 Inhalation
No information available.

Repeated Dose Toxicity
No information available.

Chronic Toxicity

Chronic Toxicity
None known.

Carcinogenicity
Contains no ingredient listed as a carcinogen.

Irritation
No information available.

Sensitization
No information available.

Reproductive Toxicity
No information available.

Developmental Toxicity
Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

Synergistic Materials
None known.

Target Organ Effects
None known.

12. ECOLOGICAL INFORMATION

Ecotoxicity
The environmental impact of this product has not been fully investigated.

Ozone depletion potential; ODP; (R-11 = 1): Does not contain ozone depleting chemical (40 CFR, Part 82).

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods
Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED, WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED, AND VALVE PROTECTION CAP IN PLACE to ISOFLEX USA for proper disposal.

14. TRANSPORT INFORMATION

DOT
Proper shipping name Helium, compressed
Hazard Class 2.2
Subsidiary Class None
UN-Number UN1046
Description UN1046, Helium, compressed, 2.2
Emergency Response Guide Number 121
15. REGULATORY INFORMATION

International Inventories

TSCA Complies
DSL Complies
EINECS / ELINCS Complies
Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

U.S. Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

| Acute Health Hazard | No |
| Chronic Health Hazard | No |
| Fire Hazard | No |
| Sudden Release of | Yes |
| Pressure Hazard | |
| Reactive Hazard | No |

Clean Water Act
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Risk and Process Safety Management Programs
This material, as supplied, does not contain any regulated substances with specified thresholds under 40 CFR Part 68. This product does not contain any substances regulated as Highly Hazardous Chemicals pursuant to the 29 CFR Part 1910.110.

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
This product does not contain any substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990.

CERCLA/SARA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

| Massachusetts | X |
| New Jersey | X |
| Pennsylvania | X |
| Illinois | - |
| Rhode Island | X |
International Regulations

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class: A compressed gas

16. OTHER INFORMATION

Prepared by
ISOFLEX USA
P.O. Box 29475
San Francisco, CA 94129

Issuing Date
28-Aug-2011

Revision Date
N/A

Revision Number
0

Revision Note
Initial Release

NFPA
Health Hazard 0
Flammability 0
Stability 0
Physical and Chemical Hazards Simple Asphyxiant

HMIS
Health Hazard 0
Flammability 0
Physical Hazard 3
Personal Protection -

Note: Ratings were assigned in accordance with Compressed Gas Association (CGA) guidelines as published in CGA Pamphlet P-19-2009, CGA Recommended Hazard Ratings for Compressed Gases, 3rd Edition.

General Disclaimer
For terms and conditions, including limitation of liability, please refer to the purchase agreement in effect between ISOFLEX USA (or any of their affiliates and subsidiaries) and the purchaser.

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