UTC Aerospace Systems
Fire Protection Systems

SAFETY DATA SHEET
Helium and Nitrogen

1. IDENTIFICATION

Product Name	Helium and Nitrogen
Recommended use of the chemical and restrictions on use	
Identified uses	Gas for industrial use
Restrictions on Use	None
Company Identification	UTC Aerospace Systems 4200 Airport Drive, NW Wilson, NC 27896
Customer Information Number	(253) 237-7004
Emergency Telephone Number	
3E Company	1-800-451-8386 Site Code: 33067
Issue Date	August 20, 2015
Supersedes Date	Rev. A, September 29, 2014

Safety Data Sheet prepared in accordance with OSHA's Hazard Communication Standard (29 CFR 1910.1200) and the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

2. HAZARD IDENTIFICATION

Hazard Classification
Gas under pressure – Compressed gas
Simple asphyxiant

Label Elements
Hazard Symbols

Signal Word: Warning

Hazard Statements
Contents under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.

Precautionary Statements

Prevention
Do not enter confined space unless adequately ventilated.
In case of inadequate ventilation wear respiratory protection.
Response
None
Storage
Protect from sunlight and store in well-ventilated place.
Keep container tightly closed.

2. HAZARD IDENTIFICATION

Disposal
None

Other Hazards
None

Specific Concentration Limits
The values listed below represent the percentages of ingredients of unknown toxicity.

Acute oral toxicity	0%
Acute dermal toxicity	0%
Acute inhalation toxicity	0%
Acute aquatic toxicity	100%

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a substance.

Component	CAS Number	Concentration
Nitrogen	7727-37-9	>90%
Helium	7440-59-7	1 – 10%

4. FIRST- AID MEASURES

Description of necessary first-aid measures
Eyes
No specific measures.
Skin
No specific measures.
Ingestion
Ingestion is not considered a potential route of exposure.
Inhalation
Remove from exposure. If there is difficulty in breathing, give oxygen. Obtain medical attention immediately.

Most important symptoms/effects, acute and delayed
Aside from the information found under Description of necessary first aid measures (above) and Indication of immediate medical attention and special treatment needed, no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed
Notes to Physicians
Treat symptomatically.

5. FIRE - FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing agent appropriate to other materials involved. Keep pressurized containers and surroundings cool with water spray as they may rupture or burst in the heat of a fire.

Specific hazards arising from the chemical
Pressurized containers may explode in heat of fire.

Special Protective Actions for Fire-Fighters
Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Remove leaking cylinder to a safe place. Ventilate the area. Leaks inside confined spaces may cause suffocation as oxygen is displaced and should not be entered without a self-contained breathing apparatus.

Environmental Precautions
None

Methods and materials for containment and cleaning up
None

7. HANDLING AND STORAGE

Precautions for safe handling
Wear appropriate protective clothing. Prevent skin and eye contact.

Conditions for safe storage
Pressurized containers should be properly stored and secured to prevent falling or being knocked over. Do not drag, slide or roll pressurized containers. Do not drop pressurized containers or permit them to strike against each other. Never apply flame or localized heat directly to any part of the pressurized or plastic container. Store pressurized and plastic containers away from high heat sources. Storage area should be: cool - dry - well ventilated - under cover - out of direct sunlight.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure limits are listed below, if they exist.
Nitrogen
None established
Helium
None established

Appropriate engineering controls
Use with adequate ventilation. There should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Individual protection measures
Respiratory Protection
Not normally required. In oxygen deficient atmospheres, use a self-contained breathing apparatus, as an air purifying respirator will not provide protection.
Skin Protection
Gloves
Eye/Face Protection
Chemical goggles or safety glasses with side shields.
Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical State	Compressed gas
Color	Colorless
Odor	None
Odor Threshold	No data available
pH	Not applicable
Specific Gravity	1.251 g/l (Nitrogen) 0.1786 g/l (Helium)
Boiling Range/Point (°C/F)	-196 ˚C/-321 ˚F(Nitrogen) -268.9 ˚C /-109.3 ˚F(Helium)
Melting Point (°C/F)	-210 ˚C/-346 ˚F(Nitrogen) -272.2 ˚C /-452.0 ˚F(Helium)
Flash Point (PMCC) (°C/F)	Not flammable
Vapor Pressure	No data available
Evaporation Rate (BuAc=1)	No data available
Solubility in Water	No data available
Vapor Density (Air = 1)	Not applicable
VOC (g/l)	None
VOC (%)	None
Partition coefficient (n-octanol/water)	No data available
Viscosity	Not applicable
Auto-ignition Temperature	No data available
Decomposition Temperature	No data available
Upper explosive limit	Not explosive
Lower explosive limit	Not explosive
Flammability (solid, gas)	Not flammable

10. STABILITY AND REACTIVITY

Reactivity
Pressurized containers may rupture or explode if exposed to heat.

Chemical Stability
Stable under normal conditions.

10. STABILITY AND REACTIVITY

Possibility of hazardous reactions
Hazardous polymerization will not occur.

Conditions to Avoid
Extremely high temperatures

Incompatible Materials
None known

Hazardous Decomposition Products
None

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Nitrogen
Simple asphyxiant
Helium
Simple asphyxiant

Specific Target Organ Toxicity (STOT) – single exposure
Exposure to nitrogen and helium gas at high concentrations can cause suffocation by reducing oxygen available for breathing. Breathing very high concentrations can cause dizziness, shortness of breath, unconsciousness or asphyxiation.

Specific Target Organ Toxicity (STOT) – repeat exposure
No data available.

Serious Eye damage/Irritation
No data available.

Skin Corrosion/Irritation
No data available.

Respiratory or Skin Sensitization
No data available.

Carcinogenicity
Not considered carcinogenic by NTP, IARC, and OSHA.

Germ Cell Mutagenicity
No data available.

Reproductive Toxicity
No data available.

Aspiration Hazard
Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity
No data available.

Mobility in soil
Nitrogen occurs naturally in the atmosphere.

Persistence/Degradability
Nitrogen occurs naturally in the atmosphere.

Bioaccumulative Potential
Nitrogen occurs naturally in the atmosphere.

Other adverse effects
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Disposal Methods
Dispose of container in accordance with all applicable local and national regulations. Do not cut, puncture or weld on or near to the pressurized container. If spilled, expellant will vaporize to the atmosphere.

14. TRANSPORT INFORMATION

DOT CFR 172.101 Data	Compressed Gas, N.O.S., (Nitrogen, Helium), (2.2), UN1956
UN Proper Shipping Name	Compressed Gas, N.O.S., (Nitrogen, Helium)
UN Class	(2.2)
UN Number	UN1956
UN Packaging Group	None
Classification for AIR Transportation (IATA)	Consult current IATA Regulations prior to shipping by air.

Containers must be shipped with the appropriate safety caps.

15. REGULATORY INFORMATION

United States TSCA Inventory
All components of this product are in compliance with the inventory listing requirements of the US Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

Canada DSL Inventory
All ingredients in this product have been verified for inclusion on the Domestic Substance List (DSL).

SARA Title III Sect. 311/312 Categorization
Pressure Hazard

SARA Title III Sect. 313
This product does not contain any chemicals that are listed in Section 313 at or above de minimis concentrations.

15. REGULATORY INFORMATION

California Proposition 65
This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 1
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards - None
HMIS Ratings
HMIS Code for Health - 1
HMIS Code for Flammability - 0
HMIS Code for Physical Hazard - 0
HMIS Code for Personal Protection - See Section 8
*Chronic

Legend
ACGIH: American Conference of Governmental Industrial Hygienists
CAS#: Chemical Abstracts Service Number
EC50: Effect Concentration 50%
IARC: International Agency for Research on Cancer
LC50: Lethal Concentration 50%
LD50: Lethal Dose 50%
N/A: Denotes no applicable information found or available
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
RQ: Reportable Quantity
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value
TSCA: Toxic Substance Control Act

Revision Date: August 20, 2015
Replaces: Rev. A, September 29, 2014
Changes made: Updated to GHS Classification.

Information Source and References
This SDS is prepared by Hazard Communication Specialists based on information provided by internal company references.

Prepared By: EnviroNet LLC.

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