
1. IDENTIFICATION

Product Name Powerex (Pressurized with Nitrogen)

Recommended use of the chemical and restrictions on use

Identified uses

Fire Extinguishing Agent

Restrictions on Use

Avoid use on burning metals

Company Identification

UTC Aerospace Systems

4200 Airport Drive, NW

Wilson, NC 27896

Customer Information Number

(252) 237-7004

Emergency Telephone Number

3E Company

1-800-451-8346 Site Code: 33067

Issue Date

May 17, 2017

Supersedes Date

Feb. 16, 2016, Rev. B

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 identified.

Specific Concentration Limits

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

Acute oral toxicity	50 – 60%
Acute dermal toxicity	50 – 60%
Acute inhalation toxicity	50 – 60%
Acute aquatic toxicity	50 – 60%

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CAS Number	Concentration
Water	7732-18-5	45 – 55%
Potassium lactate	85895-78-9	45 – 55%

Note: This product uses nitrogen as the expellant and also contains a small amount of helium.

4. FIRST- AID MEASURES

Description of necessary first-aid measures

Eyes

Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

Skin

Wash skin thoroughly with soap and water. Obtain medical attention if irritation persists.

Ingestion

Dilute by drinking large quantities of water and obtain medical attention.

Inhalation

Move victim to fresh air. Obtain medical attention immediately for any breathing difficulty.

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

This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a fire. 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

Wear appropriate protective clothing. Prevent skin and eye contact. Remove leaking container 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

Prevent large quantities of the material from entering drains or watercourses.

Methods and materials for containment and cleaning up

Contain and absorb using appropriate inert material and transfer into suitable containers for recovery or disposal.

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.

Potassium Lactate

None assigned.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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.

Individual protection measures

Respiratory Protection

Respiratory protection not normally required.

Skin Protection

Gloves

Eye/Face Protection

Chemical goggles or safety glasses with side shields.

Body Protection

Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Agent – Powerex

Appearance

Physical State	Liquid
Color	Colorless
Odor	Slight
Odor Threshold	No data available
pH	8.0
Specific Gravity	1.28 @ 25°C
Boiling Range/Point (°C/F)	No data available
Melting Point (°C/F)	No data available
Flash Point (°C/F)	Not flammable
Vapor Pressure	No data available
Evaporation Rate (BuAc=1)	<1
Solubility in Water	Soluble
Vapor Density (Air = 1)	Not applicable
VOC (g/l)	None
VOC (%)	None
Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Auto-ignition Temperature	No data available
Decomposition Temperature	No data available
Upper explosive limit	No data available
Lower explosive limit	No data available
Flammability (solid, gas)	Not applicable

Expellant

Appearance

Physical State	Compressed gas
Color	Colorless
Odor	None
Odor Threshold	No data available
pH	Not applicable

9. PHYSICAL AND CHEMICAL PROPERTIES

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.

Possibility of hazardous reactions

Hazardous polymerization will not occur.

Conditions to Avoid

Temperatures above 395°F(200°C) – contact with incompatible materials

Incompatible Materials

Water reactive materials – burning metals – electronically energized equipment

Hazardous Decomposition Products

Oxides of carbon

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Nitrogen

Simple asphyxiant

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Helium

Simple asphyxiant

Specific Target Organ Toxicity (STOT) – single exposure

Potassium lactate: Available data indicates this component is not expected to cause target organ effects after a single exposure.

Nitrogen and Helium: 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

Potassium lactate: Available data indicates this component not expected to cause target organ effects after repeated exposure.

Serious Eye damage/Irritation

Potassium lactate: Available data indicates this component is not expected to cause eye irritation.

Skin Corrosion/Irritation

Potassium lactate: Available data indicates this component is not expected to cause skin irritation.

Respiratory or Skin Sensitization

Potassium lactate: Available data indicates this component is not expected to cause skin or respiratory sensitization.

Carcinogenicity

Not considered carcinogenic by NTP, IARC, and OSHA.

Germ Cell Mutagenicity

Potassium lactate: Available data indicates this component is is not expected to be mutagenic.

Reproductive Toxicity

Potassium lactate: Available data indicates this component is not expected to cause reproductive toxicity or birth defects.

Aspiration Hazard

Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity

No data available.

Mobility in soil

No relevant studies identified.

Persistence/Degradability

Readily biodegradable per EPA guidelines.

Bioaccumulative Potential

No relevant studies identified.

12. ECOLOGICAL INFORMATION

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	Fire extinguishers, (2.2) UN1044
UN Proper Shipping Name	Fire extinguishers
UN Class	(2.2)
UN Number	1044
UN Packaging Group	None
Classification for AIR Transportation (IATA)	Consult current IATA Regulations prior to shipping by air.

Required Label(s): NONFLAMMABLE GAS
Containers must be shipped with the appropriate safety caps.

15. REGULATORY INFORMATION

United States TSCA Inventory

This product contains ingredients that are listed on or exempt from listing on the EPA Toxic Substance Control Act Chemical Substance Inventory.

Canada DSL Inventory

All ingredients in this product have not been verified for listing on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL).

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.

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: May 17, 2017
Replaces: Rev. B, Feb. 16, 2016
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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