UTC Aerospace Systems
Fire Protection Systems

SAFETY DATA SHEET
Purple K Dry Chemical (Pressurized with Nitrogen)

1. IDENTIFICATION

Product Name	Purple K Dry Chemical (Pressurized with Nitrogen)
Recommended use of the chemical and restrictions on use	
Identified uses	Fire Extinguishing Agent
Restrictions on use	Consult applicable fire protection codes
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.
Disposal
None

2. HAZARD IDENTIFICATION

Other Hazards
Calcium carbonate and mica may contain small quantities of quartz (crystalline silica) as an impurity. Prolonged exposure to respirable crystalline silica dust at concentrations exceeding the occupational exposure limits may increase the risk of developing a disabling lung disease known as silicosis. IARC found limited evidence for pulmonary carcinogenicity of crystalline silica in humans.

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

Acute oral toxicity	< 10%
Acute dermal toxicity	< 10%
Acute inhalation toxicity	< 10%
Acute aquatic toxicity	< 10%

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CAS Number	Concentration
Potassium Bicarbonate	298-14-6	75 - 85%
Calcium Carbonate	471-34-1	5 - 15%
Mica	12001-26-2	< 5%
Fullers earth	8031-18-3	< 5%
Amorphous Silica	7631-86-9	< 5%
Potassium Carbonate	584-08-7	< 5%

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
Sweep up or vacuum 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.

Mica
ACGIH TLV: 3 mg/m^3 TWA, measured as respirable fraction of the aerosol.
OSHA PEL**:** 20 mppcf, <1% crystalline silica
Calcium Carbonate
OSHA PEL: 15 mg/m^3 TWA, total dust
5 mg/m^3 TWA, respirable fraction

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Silica: Amorphous, including diatomaceous earth
OSHA: PEL 20 mppcf 8h TWA
0.8 mg/m^3 8h TWA
The exposure limit is calculated from the equation, 80/(%SiO2), using a value of 100% SiO2. Lower values of % SiO2 will give higher exposure limits.
Nuisance Dust Limit
OSHA PEL: 50 mppcf or 15 mg/m^3 TWA, total dust
15 mppcf or 5 mg/m^3 TWA, respirable fraction

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
Not normally required. Use dust mask where dustiness is prevalent, or TLV is exceeded. In oxygen deficient atmospheres, use a self-contained breathing apparatus, as an air purifying respirator will not provide protection.
Skin Protection
Not normally needed when used as a portable fire extinguisher. Use gloves if irritation occurs.
Eye/Face Protection
Chemical goggles or safety glasses with side shields.
Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Agent

Appearance	
Physical State	Solid (powder)
Color	Purple/Pink
Odor	None
Odor Threshold	No data available
pH	Not applicable
Specific Gravity	No data available
Boiling Range/Point (°C/F)	Not applicable
Melting Point (°C/F)	No data available
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	No data available
Auto-ignition Temperature	No data available
Decomposition Temperature	No data available
Upper explosive limit	No data available

9. PHYSICAL AND CHEMICAL PROPERTIES

Lower explosive limit	No data available
Flammability (solid, gas)	No data available

Expellant

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.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

Conditions to Avoid
Exposure to direct sunlight - contact with incompatible materials

Incompatible Materials
Strong oxidizing agents - strong acids - NaK alloy - $NH_4H_2PO_4$ - alkali or alkaline earth metals

10. STABILITY AND REACTIVITY

Hazardous Decomposition Products
Oxides of carbon

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Potassium Bicarbonate:
Oral LD50 (Rat) >5000 mg/kg
Dermal LD50 (Rabbit) >2000mg/kg
Calcium Carbonate:
Oral LD50 (Rat) >2000 mg/kg
Dermal LD50 (Rabbit) >2000mg/kg
Inhalation LC50(rat) >3.0mg/l
Mica:
Oral LD50 (Rat) >2000 mg/kg
Amorphous Silica:
Oral LD50 (Rat) >5000 mg/kg
Dermal LD50 (Rabbit) >2000mg/kg
Potassium Carbonate
Oral LD50 (Rat) >2000 mg/kg
Dermal LD50 (Rabbit) >2000mg/kg
Inhalation LC50 (Rat) >4.96 mg/l
Nitrogen
Simple asphyxiant
Helium
Simple asphyxiant

Specific Target Organ Toxicity (STOT) – single exposure
Potassium Bicarbonate: Available data indicates this component is not expected to cause target organ effects after a single exposure.
Calcium Carbonate: Available data indicates this component is not expected to cause target organ effects after a single exposure.
Potassium Carbonate: Inhalation can cause respiratory irritation.
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 Bicarbonate: Available data indicates this component is not expected to cause target organ effects after repeat exposure.
Calcium Carbonate: Available data indicates this component is not expected to cause target organ effects after repeat exposure.

Serious Eye damage/Irritation
Potassium Bicarbonate: Not irritating (rabbit)
Calcium Carbonate: Not irritating (rabbit)
Mica: Not irritating (rabbit)
Potassium Carbonate: Irritating to eyes in animal studies.

11. TOXICOLOGICAL INFORMATION

Skin Corrosion/Irritation
Potassium Bicarbonate: Not irritating (rabbit)
Calcium Carbonate: Not irritating (rabbit)
Mica: Not irritating (rabbit)
Potassium Carbonate: Irritating to skin (rabbit)

Respiratory or Skin Sensitization
Potassium Bicarbonate: Not a dermal sensitizer in guinea pig test.
Calcium Carbonate: Non-sensitizing to skin in Mouse local lymph node assay.

Carcinogenicity
Calcium carbonate and mica may contain small quantities of quartz (crystalline silica) as an impurity. Prolonged exposure to respirable crystalline silica dust at concentrations exceeding the occupational exposure limits may increase the risk of developing a disabling lung disease known as silicosis. IARC has classified Silica Dust, Crystalline, in the form of quartz or cristobalite as 1 (carcinogenic to humans).

Germ Cell Mutagenicity
Potassium Bicarbonate: Negative in several studies for mutagenicity.
Calcium Carbonate: Negative results in the Mammalian Cell Gene Mutation Assay with and without metabolic activation, Ames test, and In vitro Mammalian Chromosome Aberration Test.

Reproductive Toxicity
Potassium Bicarbonate: Available data indicates this component is not expected to cause reproductive toxicity or birth defects.
Calcium Carbonate: 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
Potassium Bicarbonate:
LC50 rainbow trout 1300 mg/l 96h
LC50 Ceriodaphnia dubia 630 mg/l 96h
Potassium Carbonate
LC50 Bluegill sunfish 230mg/l 96h
EC50 Daphnia pulex 200mg/l 48h

Mobility in soil
Nitrogen and carbon dioxide occur naturally in the atmosphere

Persistence/Degradability
Nitrogen and carbon dioxide occur naturally in the atmosphere

Bioaccumulative Potential
Nitrogen and carbon dioxide occur 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, Potassium Bicarbonate), (2.2), UN1956
UN Proper Shipping Name	Compressed Gas, N.O.S., (Nitrogen, Potassium Bicarbonate)
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.

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.

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 are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

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 contains a material 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
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value
TSCA: Toxic Substance Control Act

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