



Badger Fire Protection

## SAFETY DATA SHEET

Purple K Dry Chemical  
(Fire Extinguishing Agent - Pressurized  
and Non-pressurized)

### 1. IDENTIFICATION

Product Name	Purple K Dry Chemical (Fire Extinguishing Agent – Pressurized and Non-pressurized)
Other Names	Potassium Bicarbonate, PK,PKP
Recommended use of the chemical and restrictions on use	
Identified uses	Fire Extinguishing Agent
Restrictions on use	Consult applicable fire protection codes
Company Identification	Badger Fire Protection 944 Glenwood Station Lane, Suite 303 Charlottesville, VA 22901 USA
Customer Information Number	(434)-964-3200
Emergency Telephone Number	
CHEMTREC Number	(800) 424-9300 (703) 527-3887 (International)
Issue Date	April 10, 2015
Supersedes Date	February 9, 2015

*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

This SDS covers the product listed above as sold in pressurized and non-pressurized containers. GHS classifications for both forms are listed below.

#### GHS Classification – Pressurized

#### Hazard Classification

Gas under pressure – Compressed gas

#### Label Elements

Hazard Symbols



Signal Word: Warning

#### Hazard Statements

Contents under pressure; may explode if heated.



Badger Fire Protection

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Purple K Dry Chemical  
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and Non-pressurized)

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### 2. HAZARD IDENTIFICATION

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#### Precautionary Statements

##### Prevention

None

##### Response

None

##### Storage

Protect from sunlight.  
Store in well-ventilated place.

##### Disposal

None

#### GHS Classification: Non - pressurized

#### Hazard Classification

This product is classified as not hazardous in accordance with the Globally Harmonized System of Classification and Labelling (GHS).

#### Label Elements

##### Hazard Symbols

None

Signal Word: None

#### Hazard Statements

None

#### Precautionary Statements

##### Prevention

None

##### Response

None

##### Storage

None

##### Disposal

None

#### 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%



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### 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%
Clay	1332-58-7	< 5%
Amorphous Silica	7631-86-9	< 5%
Dye	NA	<1%

**Note:** Pressurized product uses nitrogen, carbon dioxide or compressed air as the expellant.

### 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.



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### 6. ACCIDENTAL RELEASE MEASURES

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#### 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.

#### 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.

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### 7. HANDLING AND STORAGE

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#### 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

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### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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#### Control parameters

Exposure limits are listed below, if they exist.

#### Mica

ACGIH TLV: 3 mg/m<sup>3</sup> TWA, measured as respirable fraction of the aerosol.

OSHA PEL: 20 mppcf, <1% crystalline silica

#### Calcium Carbonate

OSHA PEL: 15 mg/m<sup>3</sup> TWA, total dust

5 mg/m<sup>3</sup> TWA, respirable fraction

#### Clay as Kaolin, Respirable Fraction

ACGIH TLV: 2 mg/m<sup>3</sup> TWA

OSHA PEL: 15 mg/m<sup>3</sup> TWA, total dust

5 mg/m<sup>3</sup> TWA, respirable fraction

#### Nuisance Dust Limit

OSHA PEL: 50 mppcf or 15 mg/m<sup>3</sup> TWA, total dust

15 mppcf or 5 mg/m<sup>3</sup> 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.



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### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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#### 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.

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

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#### Non- Pressurized

##### Appearance

Physical State	Solid (powder)
Color	Purple/Pink
Odor	Odorless
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
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



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### 9. PHYSICAL AND CHEMICAL PROPERTIES

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Specific Gravity	0.075 lb/ft <sup>3</sup> @70°F as vapor (Nitrogen) 0.1144 lb/ft <sup>3</sup> (Carbon dioxide gas density)
Boiling Range/Point (°C/F)	-196°C/-321 °F(Nitrogen) -78.5 °C /-109.3°F(Carbon Dioxide)
Melting Point (°C/F)	No data available
Flash Point (PMCC) (°C/F)	Not flammable
Vapor Pressure	838 psig @70°F and 1 atmosphere(Carbon Dioxide)
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

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### 10. STABILITY AND REACTIVITY

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#### 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<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> - alkali or alkaline earth metals

#### Hazardous Decomposition Products

Oxides of carbon



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### 11. TOXICOLOGICAL INFORMATION

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#### 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

##### Dye:

Oral LD50 (Rat) >2000 mg/kg (no deaths)

##### Clay:

Oral LD50 (Rat) >5000 mg/kg

Dermal LD50 (Rabbit) >5000mg/kg

##### Nitrogen

Simple asphyxiant

##### Carbon Dioxide

Simple asphyxiant

LCLo (inhalation in humans): 90,000ppm/ 5 minutes.

#### 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.

Nitrogen and Carbon Dioxide : Exposure to nitrogen and carbon dioxide 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)

#### Skin Corrosion/Irritation

Potassium Bicarbonate: Not irritating (rabbit)

Calcium Carbonate: Not irritating (rabbit)

Mica: Not irritating (rabbit)



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### 11. TOXICOLOGICAL INFORMATION

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#### 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.

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### 12. ECOLOGICAL INFORMATION

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#### Ecotoxicity

Potassium Bicarbonate:

LC50 rainbow trout 1300 mg/l 96h

LC50 Ceriodaphnia dubia 630 mg/l 96h

#### 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.

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### 13. DISPOSAL CONSIDERATIONS

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#### 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.





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### 14. TRANSPORT INFORMATION

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Safety Data Sheet information is intended to address a specific material and not various forms or states of containment. Specific volumes, pressures or hardware configurations containing such materials can dictate various different hazard classifications for transportation and labelling requirements. Under Federal Regulations only trained and qualified individuals are permitted to label and ship products following the applicable Department of Transportation (DOT), Federal Aviation Administration (FAA), Transport Canada (TC), International Maritime Dangerous Goods (IMDG) or International Air Transport Association (IATA) requirements.

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### 15. REGULATORY INFORMATION

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#### 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: Pressurized

Pressure hazard

#### SARA Title III Sect. 311/312 Categorization: Non-pressurized

None

#### SARA Title III Sect. 313

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

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### 16. OTHER INFORMATION

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#### 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



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#### 16. OTHER INFORMATION

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##### 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: April 10, 2015

Replaces: February 9, 2015

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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