



A UTC Fire & Security Company

# MATERIAL SAFETY DATA SHEET

## Commercial ABC Dry Chemical (Fire Extinguishing Agent)

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATIONS AND OF THE COMPANY UNDERTAKING

**Product Name** Commercial ABC Dry Chemical (Fire Extinguishing Agent)  
**Other Trade Names** Multi-Purpose, Ammonium Phosphate, Monoammonium Phosphate  
**Product Description** Fire Extinguishing Agent  
**Manufacturer/Supplier** Badger Fire Protection  
**Address** 944 Glenwood Station Lane, Suite 303  
Charlottesville, VA 22901  
USA  
**Phone Number** (434)-964-3200  
**Chemtrec Number** (800) 424-9300  
**(for emergencies only)** (703) 527-3887 (International)  
**Revision Date:** February 9, 2012  
**MSDS Date:** February 9, 2009

*Safety Data Sheet according to EC directive 2001/59/EC and OSHA's Hazcom Standard (29 CFR 1910.1200)*

### 2. HAZARDS IDENTIFICATION

**EU Main Hazards**  
Non Hazardous Powder

#### Routes of Entry

Eye contact - Inhalation - Skin contact

#### Carcinogenic Status

See Section 11 - Toxicity

#### Target Organs

Respiratory System - Skin - Eye

#### Health Effects - Eyes

Contact for short periods of time may cause irritation.

#### Health Effects - Skin

Contact may cause mild irritation.

#### Health Effects - Ingestion

Ingestion is not an expected route of exposure.

#### Health Effects - Inhalation

May irritate the respiratory tract. May cause transient cough and shortness of breath.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Monoammonium Phosphate	7722-76-1 EC#2317645	55 - 65%	None	None
Ammonium Sulfate	7783-20-2 EC#2319841	30 - 40%	None	None
Mica	12001-26-2	1 - 4%	None	None



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### Commercial ABC Dry Chemical (Fire Extinguishing Agent)

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#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

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Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Clay	8031-18-3	<2%	None	None
Amorphous Silica	7631-86-9 EC#2315454	<2%	None	None
Dye	NA	<0.1%	None	None

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#### 4. FIRST AID MEASURES

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##### 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 affected area 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.

##### Advice to Physicians

Treat symptomatically.

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#### 5. FIRE - FIGHTING MEASURES

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##### Extinguishing Media

This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a blaze. Use extinguishing agent appropriate to other materials involved. Keep pressurized extinguishers and surroundings cool with water spray as they may rupture or burst in the heat of a fire.

##### Unusual Fire and Explosion Hazards

Pressurized containers may explode in heat of fire.

##### Protective Equipment for Fire-Fighting

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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Sweep up or vacuum. Prevent skin and eye contact. Wear appropriate protective equipment.

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#### 7. HANDLING AND STORAGE

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Pressurized extinguishers should be properly stored and secured to prevent falling or being knocked over. Do not drag, slide or roll extinguishers. Do not drop extinguishers or permit them to strike against each other. Never apply flame or localized heat directly to any part of the extinguisher or plastic container. Store pressurized extinguishers 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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## MATERIAL SAFETY DATA SHEET

### Commercial ABC Dry Chemical (Fire Extinguishing Agent)

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#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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##### Occupational Exposure Standards

Occupational 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

##### 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

##### Engineering Control Measures

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.

##### Respiratory Protection

Not normally required. Use dust mask where dustiness is prevalent, or TLV is exceeded.

##### Hand Protection

Not normally needed when used as a portable fire extinguisher. Use gloves if irritation occurs.

##### Eye 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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<b>Physical State</b>	Powder
<b>Color</b>	Pale Yellow
<b>Odor</b>	Odorless
<b>Specific Gravity</b>	Not available
<b>Boiling Range/Point (°C/F)</b>	Not applicable
<b>Flash Point (PMCC) (°C/F)</b>	Not Flammable
<b>Solubility in Water</b>	Not applicable
<b>Vapor Density (Air = 1)</b>	Heavier than air.
<b>Vapor Pressure</b>	Not applicable
<b>Evaporation Rate</b>	Not applicable

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#### 10. STABILITY AND REACTIVITY

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##### Stability

Stable under normal conditions.

##### Conditions to Avoid

Heat - High temperatures - Exposure to direct sunlight

##### Materials to Avoid

Strong oxidizing agents - strong acids - sodium hypochlorite

##### Hazardous Polymerization

Will not occur.



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## MATERIAL SAFETY DATA SHEET

### Commercial ABC Dry Chemical (Fire Extinguishing Agent)

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#### 10. STABILITY AND REACTIVITY

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##### Hazardous Decomposition Products

Oxides of carbon - ammonia - oxides of phosphorus - nitrogen oxides

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#### 11. TOXICOLOGICAL INFORMATION

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##### Acute Toxicity

Low order of acute toxicity.

##### Chronic Toxicity/Carcinogenicity

This product is not expected to cause long term adverse health effects.

Mica and clay 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.

##### Genotoxicity

This product is not expected to cause any mutagenic effects.

##### Reproductive/Developmental Toxicity

This product is not expected to cause adverse reproductive effects.

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#### 12. ECOLOGICAL INFORMATION

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##### Mobility

No relevant studies identified.

##### Persistence/Degradability

No relevant studies identified.

##### Bio-accumulation

No relevant studies identified.

##### Ecotoxicity

No relevant studies identified.

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#### 13. DISPOSAL CONSIDERATIONS

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Dispose of container in accordance with all applicable local and national regulations. Do not cut, puncture or weld on or near to the container. No harm to the environment is expected from this preparation.

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#### 14. TRANSPORT INFORMATION

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**DOT CFR 172.101 Data** Not regulated

**UN Proper Shipping Name** Not regulated

**UN Class** None

**UN Number** None

**UN Packaging Group** None

**NOTE:** For additional HAZMAT shipping information related to shipping pressurized fire extinguishers, refer to Badger Technical Bulletin #123-1201 available for download at [www.badgerfire.com](http://www.badgerfire.com).



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## MATERIAL SAFETY DATA SHEET

### Commercial ABC Dry Chemical (Fire Extinguishing Agent)

#### 15. REGULATORY INFORMATION

##### EU Label Information

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments (2001/60/EC and 2006/8/EC)

##### EU Hazard Symbol and Indication of Danger.

This preparation is not classified as dangerous.

##### R phrases

None

##### S phrases

None.

##### US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS

##### TSCA Listing

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

##### EINECS Listing

All ingredients in this product have not been verified for listing on the European Inventory of Existing Commercial Chemical Substances (EINECS) or the European List of New Chemical Substances (ELINCS).

##### DSL/NDSL (Canadian) Listing

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.

##### WHMIS Classification

D2B

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

##### MA Right To Know Law

All components have been checked for inclusion on the Massachusetts Substance List (MSL). Those components present at or above the de minimis concentration include: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) <2% - Ammonium Sulfate (7783-20-2) 30 - 40%

##### PA Right To Know Law

This product contains the following chemicals found on the Pennsylvania Hazardous Substance List: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) <2% - Ammonium Sulfate (7783-20-2) 30 - 40%

##### NJ Right To Know Law

This product contains the following chemicals found on the NJ Right To Know Hazardous Substance List: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) <2%

##### 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.

##### SARA Title III Sect. 302 (EHS)

This product does not contain any chemicals subject to SARA Title III Section 302.

##### SARA Title III Sect. 304

This product does not contain any chemicals subject to SARA Title III Section 304.



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## MATERIAL SAFETY DATA SHEET

### Commercial ABC Dry Chemical (Fire Extinguishing Agent)

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#### 15. REGULATORY INFORMATION

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##### **SARA Title III Sect. 311/312 Categorization**

- Immediate (Acute) Health 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.

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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 Reactivity - 0

HMIS Code for Personal Protection - See Section 8

##### **Abbreviations**

N/A: Denotes no applicable information found or available

CAS#: Chemical Abstracts Service Number

ACGIH: American Conference of Governmental Industrial Hygienists

OSHA: Occupational Safety and Health Administration

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit

NTP: National Toxicology Program

IARC: International Agency for Research on Cancer

R: Risk

S: Safety

**Prepared By:** EnviroNet LLC.

The information contained herein is based on data believed to be accurate. However, no representation, warranty, or guarantee is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for its own particular use. Badger Fire Protection assumes no responsibility for personal injury or property damage resulting from use, handling or from contact with this product.



A UTC Fire & Security Company

# MATERIAL SAFETY DATA SHEET

## Regular Dry Chemical (Fire Extinguishing Agent)

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATIONS AND OF THE COMPANY UNDERTAKING

**Product Name** Regular Dry Chemical (Fire Extinguishing Agent)  
**Other Trade Names** BC, SDC, Sodium Bicarbonate  
**Product Description** Fire Extinguishing Agent  
**Manufacturer/Supplier** Badger Fire Protection  
**Address** 944 Glenwood Station Lane, Suite 303  
Charlottesville, VA 22901  
USA  
**Phone Number** (434)-964-3200  
**Chemtrec Number** (800) 424-9300  
**(for emergencies only)** (703) 527-3887 (International)  
**Revision Date:** February 9, 2012  
**MSDS Date:** January 15, 2007

*Safety Data Sheet according to EC directive 2001/59/EC and OSHA's Hazcom Standard (29 CFR 1910.1200)*

### 2. HAZARDS IDENTIFICATION

#### EU Main Hazards

Non Hazardous Powder

#### Routes of Entry

Eye contact - Inhalation - Skin contact

#### Carcinogenic Status

See Section 11 - Toxicity

#### Target Organs

Respiratory System - Skin - Eye

#### Health Effects - Eyes

Contact for short periods of time may cause irritation.

#### Health Effects - Skin

Contact may cause mild irritation.

#### Health Effects - Ingestion

Ingestion is not an expected route of exposure.

#### Health Effects - Inhalation

May irritate the respiratory tract. May cause transient cough and shortness of breath.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Sodium Bicarbonate	144-55-8 EC#2056338	75 - 90%	None	None
Calcium Carbonate	471-34-1 EC#2074399	10 - 20%	None	None
Mica	12001-26-2	1- 4%	None	None
Clay	8031-18-3	<2%	None	None
Amorphous Silica	7631-86-9 EC#2315454	<2%	None	None



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## MATERIAL SAFETY DATA SHEET

### Regular Dry Chemical (Fire Extinguishing Agent)

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#### 4. FIRST AID MEASURES

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##### **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 affected area 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.

##### **Advice to Physicians**

Treat symptomatically.

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#### 5. FIRE - FIGHTING MEASURES

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##### **Extinguishing Media**

This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a blaze. Use extinguishing agent appropriate to other materials involved. Keep pressurized extinguishers and surroundings cool with water spray as they may rupture or burst in the heat of a fire.

##### **Unusual Fire and Explosion Hazards**

Pressurized containers may explode in heat of fire.

##### **Protective Equipment for Fire-Fighting**

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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Sweep up or vacuum. Prevent skin and eye contact. Wear appropriate protective equipment.

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#### 7. HANDLING AND STORAGE

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Pressurized extinguishers should be properly stored and secured to prevent falling or being knocked over. Do not drag, slide or roll extinguishers. Do not drop extinguishers or permit them to strike against each other. Never apply flame or localized heat directly to any part of the extinguisher or plastic container. Store pressurized extinguishers 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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##### **Occupational Exposure Standards**

Occupational 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





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## MATERIAL SAFETY DATA SHEET

**Regular Dry Chemical  
(Fire Extinguishing Agent)**

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### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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**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

**Engineering Control Measures**

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.

**Respiratory Protection**

Not normally required. Use dust mask where dustiness is prevalent, or TLV is exceeded.

**Hand Protection**

Not normally needed when used as a portable fire extinguisher. Use gloves if irritation occurs.

**Eye 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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<b>Physical State</b>	Powder
<b>Color</b>	White
<b>Odor</b>	Odorless
<b>Specific Gravity</b>	Ca. 2.2
<b>Boiling Range/Point (°C/F)</b>	Not applicable
<b>Flash Point (PMCC) (°C/F)</b>	Not Flammable
<b>Solubility in Water</b>	16.4g/100g
<b>Vapor Density (Air = 1)</b>	Heavier than air.
<b>Vapor Pressure</b>	Not applicable
<b>Evaporation Rate</b>	Not applicable

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### 10. STABILITY AND REACTIVITY

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**Stability**

Stable under normal conditions.

**Conditions to Avoid**

- Heat - High temperatures - Exposure to direct sunlight

**Materials to Avoid**

- Strong oxidizing agents - strong acids

**Hazardous Polymerization**

Will not occur.

**Hazardous Decomposition Products**

- oxides of carbon



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## MATERIAL SAFETY DATA SHEET

Regular Dry Chemical  
(Fire Extinguishing Agent)

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### 11. TOXICOLOGICAL INFORMATION

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**Acute Toxicity**

Low order of acute toxicity.

**Chronic Toxicity/Carcinogenicity**

This product is not expected to cause long term adverse health effects.

Calcium carbonate, mica, and clay 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.

**Genotoxicity**

This product is not expected to cause any mutagenic effects.

**Reproductive/Developmental Toxicity**

This product is not expected to cause adverse reproductive effects.

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### 12. ECOLOGICAL INFORMATION

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**Mobility**

No relevant studies identified.

**Persistence/Degradability**

No relevant studies identified.

**Bio-accumulation**

No relevant studies identified.

**Ecotoxicity**

No relevant studies identified.

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### 13. DISPOSAL CONSIDERATIONS

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Dispose of container in accordance with all applicable local and national regulations. Do not cut, puncture or weld on or near to the container. No harm to the environment is expected from this preparation.

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### 14. TRANSPORT INFORMATION

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**DOT CFR 172.101 Data** Not regulated

**UN Proper Shipping Name** Not regulated

**UN Class** None

**UN Number** None

**UN Packaging Group** None

**NOTE:** For additional HAZMAT shipping information related to shipping pressurized fire extinguishers, refer to Badger Technical Bulletin #123-1201 available for download at [www.badgerfire.com](http://www.badgerfire.com).



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

Regular Dry Chemical  
(Fire Extinguishing Agent)

### 15. REGULATORY INFORMATION

#### EU Label Information

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments(2001/60/EC and 2006/8/EC)

#### EU Hazard Symbol and Indication of Danger.

This preparation is not classified as dangerous.

#### R phrases

None

#### S phrases

None.

#### US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS

##### TSCA Listing

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

##### EINECS Listing

All ingredients in this product have not been verified for listing on the European Inventory of Existing Commercial Chemical Substances (EINECS) or the European List of New Chemical Substances (ELINCS).

##### DSL/NDSL (Canadian) Listing

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.

##### WHMIS Classification

D2B

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

##### MA Right To Know Law

All components have been checked for inclusion on the Massachusetts Substance List (MSL). Those components present at or above the de minimus concentration include: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) <2% - Calcium Carbonate (471-34-1) 10-20%

##### PA Right To Know Law

This product contains the following chemicals found on the Pennsylvania Hazardous Substance List: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) <2% - Calcium Carbonate (471-34-1) 10-20%

##### NJ Right To Know Law

This product contains the following chemicals found on the NJ Right To Know Hazardous Substance List: Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) <2%

##### 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.

##### SARA Title III Sect. 302 (EHS)

This product does not contain any chemicals subject to SARA Title III Section 302.

##### SARA Title III Sect. 304

This product does not contain any chemicals subject to SARA Title III Section 304.

##### SARA Title III Sect. 311/312 Categorization

Immediate (Acute) Health Hazard



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

**Regular Dry Chemical  
(Fire Extinguishing Agent)**

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### 15. REGULATORY INFORMATION

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**SARA Title III Sect. 313**

This product does not contain a chemical which is 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 Reactivity - 0

HMIS Code for Personal Protection - See Section 8

**Abbreviations**

N/A: Denotes no applicable information found or available

CAS#: Chemical Abstracts Service Number

ACGIH: American Conference of Governmental Industrial Hygienists

OSHA: Occupational Safety and Health Administration

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit

NTP: National Toxicology Program

IARC: International Agency for Research on Cancer

R: Risk

S: Safety

**Prepared By:** EnviroNet LLC.

The information contained herein is based on data believed to be accurate. However, no representation, warranty, or guarantee is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for its own particular use. Badger Fire Protection assumes no responsibility for personal injury or property damage resulting from use, handling or from contact with this product.



A UTC Fire & Security Company

# MATERIAL SAFETY DATA SHEET

## Purple K Dry Chemical (Fire Extinguishing Agent)

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATIONS AND OF THE COMPANY UNDERTAKING

**Product Name** Purple K Dry Chemical (Fire Extinguishing Agent)  
**Other Trade Names** Potassium Bicarbonate, PK,PKP  
**Product Description** Fire Extinguishing Agent  
**Manufacturer/Supplier** Badger Fire Protection  
**Address** 944 Glenwood Station Lane, Suite 303  
Charlottesville, VA 22901  
USA  
**Phone Number** (434)-964-3200  
**Chemtrec Number** (800) 424-9300  
**(for emergencies only)** (703) 527-3887 (International)  
**Revision Date:** February 9, 2012  
**MSDS Date:** January 15, 2007

*Safety Data Sheet according to EC directive 2001/59/EC and OSHA's Hazcom Standard (29 CFR 1910.1200)*

### 2. HAZARDS IDENTIFICATION

**EU Main Hazards**

Non Hazardous Powder

**Routes of Entry**

Eye contact - Inhalation - Skin contact

**Carcinogenic Status**

See Section 11 - Toxicity

**Target Organs**

Respiratory System - Skin - Eye

**Health Effects - Eyes**

Contact for short periods of time may cause irritation.

**Health Effects - Skin**

Contact may cause mild irritation.

**Health Effects - Ingestion**

Ingestion is not an expected route of exposure.

**Health Effects - Inhalation**

May irritate the respiratory tract. May cause transient cough and shortness of breath.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Potassium Bicarbonate	298-14-6 EC#2060590	75 - 90%	None	None
Calcium Carbonate	471-34-1 EC#2074399	5 - 15%	None	None
Mica	12001-26-2	2 - 6%	None	None
Clay	8031-18-3	1 - 5%	None	None



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Purple K Dry Chemical (Fire Extinguishing Agent)

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#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

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Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Amorphous Silica	7631-86-9 EC#2315454	<2%	None	None
Dye	NA	<1%	None	None

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#### 4. FIRST AID MEASURES

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##### 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 affected area 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.

##### Advice to Physicians

Treat symptomatically.

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#### 5. FIRE - FIGHTING MEASURES

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##### Extinguishing Media

This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a blaze. Use extinguishing agent appropriate to other materials involved. Keep pressurized extinguishers and surroundings cool with water spray as they may rupture or burst in the heat of a fire.

##### Unusual Fire and Explosion Hazards

Pressurized containers may explode in heat of fire.

##### Protective Equipment for Fire-Fighting

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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Sweep up or vacuum. Prevent skin and eye contact. Wear appropriate protective equipment.

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#### 7. HANDLING AND STORAGE

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Pressurized extinguishers should be properly stored and secured to prevent falling or being knocked over. Do not drag, slide or roll extinguishers. Do not drop extinguishers or permit them to strike against each other. Never apply flame or localized heat directly to any part of the extinguisher or plastic container. Store pressurized extinguishers 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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A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Purple K Dry Chemical (Fire Extinguishing Agent)

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#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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##### Occupational Exposure Standards

Occupational 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

##### 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

##### Engineering Control Measures

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.

##### Respiratory Protection

Not normally required. Use dust mask where dustiness is prevalent, or TLV is exceeded.

##### Hand Protection

Not normally needed when used as a portable fire extinguisher. Use gloves if irritation occurs.

##### Eye 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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<b>Physical State</b>	Powder
<b>Color</b>	Purple
<b>Odor</b>	Odorless
<b>Specific Gravity</b>	Not available
<b>Boiling Range/Point (°C/F)</b>	Not applicable
<b>Flash Point (PMCC) (°C/F)</b>	Not Flammable
<b>Solubility in Water</b>	Not applicable
<b>Vapor Density (Air = 1)</b>	Heavier than air.
<b>Vapor Pressure</b>	Not applicable
<b>Evaporation Rate</b>	Not applicable

---

#### 10. STABILITY AND REACTIVITY

---

##### Stability

Stable under normal conditions.

##### Conditions to Avoid

Heat - High temperatures - Exposure to direct sunlight

##### Materials to Avoid

Strong oxidizing agents - strong acids - NaK alloy - NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub>



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

Purple K Dry Chemical  
(Fire Extinguishing Agent)

---

### 10. STABILITY AND REACTIVITY

---

**Hazardous Polymerization**

Will not occur.

**Hazardous Decomposition Products**

Oxides of carbon

---

### 11. TOXICOLOGICAL INFORMATION

---

**Acute Toxicity**

Low order of acute toxicity.

**Chronic Toxicity/Carcinogenicity**

This product is not expected to cause long term adverse health effects.

Calcium carbonate, mica, and clay 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.

**Genotoxicity**

This product is not expected to cause any mutagenic effects.

**Reproductive/Developmental Toxicity**

This product is not expected to cause adverse reproductive effects.

---

### 12. ECOLOGICAL INFORMATION

---

**Mobility**

No relevant studies identified.

**Persistence/Degradability**

No relevant studies identified.

**Bio-accumulation**

No relevant studies identified.

**Ecotoxicity**

No relevant studies identified.

---

### 13. DISPOSAL CONSIDERATIONS

---

Dispose of container in accordance with all applicable local and national regulations. Do not cut, puncture or weld on or near to the container. No harm to the environment is expected from this preparation.

---

### 14. TRANSPORT INFORMATION

---

<b>DOT CFR 172.101 Data</b>	Not regulated
<b>UN Proper Shipping Name</b>	Not regulated
<b>UN Class</b>	None
<b>UN Number</b>	None
<b>UN Packaging Group</b>	None

---





A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Purple K Dry Chemical (Fire Extinguishing Agent)

#### 14. TRANSPORT INFORMATION

**NOTE:** For additional HAZMAT shipping information related to shipping pressurized fire extinguishers, refer to Badger Technical Bulletin #123-1201 available for download at [www.badgerfire.com](http://www.badgerfire.com).

#### 15. REGULATORY INFORMATION

##### EU Label Information

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments(2001/60/EC and 2006/8/EC)

##### EU Hazard Symbol and Indication of Danger.

This preparation is not classified as dangerous.

##### R phrases

None

##### S phrases

None.

##### US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS

##### TSCA Listing

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

##### EINECS Listing

All ingredients in this product have not been verified for listing on the European Inventory of Existing Commercial Chemical Substances (EINECS) or the European List of New Chemical Substances (ELINCS).

##### DSL/NDSL (Canadian) Listing

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.

##### WHMIS Classification

D2B

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

##### MA Right To Know Law

All components have been checked for inclusion on the Massachusetts Substance List (MSL). Those components present at or above the de minimus concentration include: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) 0.2 -1.0% - Calcium Carbonate (471-34-1) 5-15%

##### PA Right To Know Law

This product contains the following chemicals found on the Pennsylvania Hazardous Substance List: - Mica (12001-26-2)1-4%-Amorphous Silica (7631-86-9)0.2-1.0%-Calcium Carbonate (471-34-1)5-15%

##### NJ Right To Know Law

This product contains the following chemicals found on the NJ Right To Know Hazardous Substance List: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) 0.2 -1.0%

##### 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.



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

**Purple K Dry Chemical  
(Fire Extinguishing Agent)**

---

### 15. REGULATORY INFORMATION

---

**SARA Title III Sect. 302 (EHS)**

This product does not contain any chemicals subject to SARA Title III Section 302.

**SARA Title III Sect. 304**

This product does not contain any chemicals subject to SARA Title III Section 304.

**SARA Title III Sect. 311/312 Categorization**

Immediate (Acute) Health Hazard

**SARA Title III Sect. 313**

This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

---

### 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 Reactivity - 0

HMIS Code for Personal Protection - See Section 8

**Abbreviations**

N/A: Denotes no applicable information found or available

CAS#: Chemical Abstracts Service Number

ACGIH: American Conference of Governmental Industrial Hygienists

OSHA: Occupational Safety and Health Administration

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit

NTP: National Toxicology Program

IARC: International Agency for Research on Cancer

R: Risk

S: Safety

**Prepared By:** EnviroNet LLC.

The information contained herein is based on data believed to be accurate. However, no representation, warranty, or guarantee is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for its own particular use. Badger Fire Protection assumes no responsibility for personal injury or property damage resulting from use, handling or from contact with this product.



A UTC Fire & Security Company

# MATERIAL SAFETY DATA SHEET

## Carbon Dioxide (Fire Extinguishing Agent and Expellant)

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATIONS AND OF THE COMPANY UNDERTAKING

**Product Name** Carbon Dioxide (Fire Extinguishing Agent and Expellant)  
**Other Trade Names** CO2  
**Product Description** Fire Extinguishing Agent and Expellant  
**Manufacturer/Supplier** Badger Fire Protection  
**Address** 944 Glenwood Station Lane, Suite 303  
Charlottesville, VA 22901  
USA  
**Phone Number** (434)-964-3200  
**Chemtrec Number** (800) 424-9300  
**(for emergencies only)** (703) 527-3887 (International)  
**Revision Date:** February 9, 2012  
**MSDS Date:** January 15, 2007

*Safety Data Sheet according to EC directive 2001/59/EC and OSHA's Hazcom Standard (29 CFR 1910.1200)*

### 2. HAZARDS IDENTIFICATION

**EU Main Hazards**  
Non Flammable Gas

**Routes of Entry**

- Eye contact - Inhalation - Skin contact

**Carcinogenic Status**

Not considered carcinogenic by NTP, IARC, and OSHA.

**Target Organs**

- Respiratory System - Skin - Eye - Cardiovascular System

**Health Effects - Eyes**

Direct contact with the cold gas or liquid can cause freezing of exposed tissues, with pain, redness, burns and corneal damage. Moisture in the air can react to form carbonic acid which causes eye irritation.

**Health Effects - Skin**

Direct contact with the cold gas or liquid can cause freezing of exposed tissues.

**Health Effects - Ingestion**

Ingestion is not a possible route of exposure.

**Health Effects - Inhalation**

Exposure to vapor at high concentrations have the following effects: - light headedness - dizziness - difficulty with breathing - drowsiness - nausea - mental confusion - increased blood pressure - increased respiratory rate - loss of consciousness which may prove fatal due to suffocation as it displaces oxygen. Individuals with pre-existing disease will be at increased risk.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Carbon Dioxide	124-38-9 EC#204-696-9	>99.8	None	Non Flammable Gas



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Carbon Dioxide (Fire Extinguishing Agent and Expellant)

---

#### 4. FIRST AID MEASURES

---

##### **Eyes**

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

##### **Skin**

Gently warm affected areas. Obtain medical attention if blistering occurs or redness persists.

##### **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.

##### **Advice to Physicians**

In case of frostbite, place the frostbitten part in warm water. If warm water is not available or impractical to use, wrap the affected parts gently in blankets. DO NOT USE HOT WATER.

---

#### 5. FIRE - FIGHTING MEASURES

---

##### **Extinguishing Media**

Carbon Dioxide is used as an extinguishing agent and therefore is not a problem when trying to control a blaze. Use extinguishing agent appropriate to other materials involved. Keep containers and surroundings cool with water spray as containers may rupture or burst in the heat of a fire.

##### **Unusual Fire and Explosion Hazards**

Containers may explode in heat of fire.

##### **Protective Equipment for Fire-Fighting**

Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

---

#### 6. ACCIDENTAL RELEASE MEASURES

---

Wear full protective clothing and self-contained breathing apparatus. Remove leaking cylinder to a safe place. Ventilate the area. Vapors can accumulate in low areas. Leaks inside confined spaces may cause suffocation as oxygen is displaced and should not be entered without a self-contained breathing apparatus.

---

#### 7. HANDLING AND STORAGE

---

Cylinders should be properly stored and secured to prevent falling or being knocked over. Do not drag, slide or roll cylinders. Do not drop cylinders or permit them to strike against each other. Never apply flame or localized heat directly to any part of the cylinder. Store away from sources of heat or ignition. Storage area should be: - cool - dry - well ventilated - under cover - out of direct sunlight

---

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

---

##### **Occupational Exposure Standards**

Occupational exposure limits are listed below, if they exist.

##### **Carbon Dioxide**

**ACGIH TLV:** 5000 ppm (9000 mg/m<sup>3</sup>) STEL: 30,000 ppm (54,000 mg/m<sup>3</sup>)

**OSHA PEL:** 5000 ppm (9000 mg/m<sup>3</sup>)



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Carbon Dioxide (Fire Extinguishing Agent and Expellant)

---

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

---

##### Engineering Control Measures

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

##### Respiratory Protection

Not normally required under conditions of use as a portable fire extinguisher. For other applications creating oxygen deficient atmospheres, use a self contained breathing apparatus, as an air purifying respirator will not provide protection.

##### Hand Protection

Wear rubber gloves. Avoid contact with skin.

##### Eye Protection

Chemical goggles or safety glasses with side shields. Avoid contact with eyes.

##### Body Protection

Normal work wear.

---

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

---

<b>Physical State</b>	Liquefied gas under pressure
<b>Color</b>	Colorless
<b>Odor</b>	Odorless to Slightly Acidic
<b>Specific Gravity</b>	1.522
<b>Boiling Range/Point (°C/F)</b>	-109.3°F
<b>Flash Point (PMCC) (°C/F)</b>	Not Flammable
<b>Solubility in Water</b>	Soluble
<b>Vapor Density (Air = 1)</b>	Heavier than air.
<b>Vapor Pressure</b>	838 psig @70°F and 1 atmosphere
<b>Gas Density</b>	0.1144 lb/ft <sup>3</sup>
<b>Evaporation Rate</b>	Not applicable

---

#### 10. STABILITY AND REACTIVITY

---

##### Stability

Stable under normal conditions.

##### Conditions to Avoid

Heat - high temperatures - exposure to direct sunlight

##### Materials to Avoid

Alkali or alkaline earth metal (ex. aluminum, zinc, etc.) - strong oxidizing agents

##### Hazardous Polymerization

Will not occur.

##### Hazardous Decomposition Products

In contact with moisture will generate carbonic acid



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Carbon Dioxide (Fire Extinguishing Agent and Expellant)

---

#### 11. TOXICOLOGICAL INFORMATION

---

**Acute Toxicity**

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

**Chronic Toxicity/Carcinogenicity**

This product is not expected to cause long term adverse health effects.

**Genotoxicity**

This product is not expected to cause any mutagenic effects.

**Reproductive/Developmental Toxicity**

This product is not expected to cause adverse reproductive effects.

---

#### 12. ECOLOGICAL INFORMATION

---

**Mobility**

Carbon dioxide occurs naturally in the atmosphere.

**Persistence/Degradability**

Carbon dioxide occurs naturally in the atmosphere.

**Bio-accumulation**

Carbon dioxide occurs naturally in the atmosphere.

**Ecotoxicity**

Aquatic Toxicity: 100-200 mg/l/no time specified/various organisms/fresh water

Waterfowl toxicity: 5-8%, no effect

---

#### 13. DISPOSAL CONSIDERATIONS

---

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

---

#### 14. TRANSPORT INFORMATION

---

<b>DOT CFR 172.101 Data</b>	Carbon Dioxide, 2.2, UN1013
<b>UN Proper Shipping Name</b>	Carbon Dioxide
<b>UN Class</b>	(2.2) Non-Flammable Gas
<b>UN Number</b>	UN1013
<b>UN Packaging Group</b>	Not applicable

---

#### 15. REGULATORY INFORMATION

---

**EU Label Information**

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments(2001/60/EC and 2006/8/EC)

**EU Hazard Symbol and Indication of Danger.**

Non Flammable Gas

**R phrases**

None



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Carbon Dioxide (Fire Extinguishing Agent and Expellant)

---

#### 15. REGULATORY INFORMATION

---

##### S phrases

S9 Keep container in a well ventilated place.

<b>US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS</b>
---

##### TSCA Listing

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

##### EINECS Listing

All ingredients in this product are listed on the European Inventory of Existing Commercial Chemical Substances (EINECS) or the European List of New Chemical Substances (ELINCS) or are exempt from listing.

##### DSL/NDSL (Canadian) Listing

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.

##### WHMIS Classification

A

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

##### MA Right To Know Law

All components have been checked for inclusion on the Massachusetts Substance List (MSL). Those components present at or above the de minimis concentration include: - carbon dioxide

##### PA Right To Know Law

This product contains the following chemicals found on the Pennsylvania Hazardous Substance List: - carbon dioxide

##### NJ Right To Know Law

This product contains the following chemicals found on the NJ Right To Know Hazardous Substance List: - carbon dioxide

##### 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.

##### SARA Title III Sect. 302 (EHS)

This product does not contain any chemicals subject to SARA Title III Section 302.

##### SARA Title III Sect. 304

This product does not contain any chemicals subject to SARA Title III Section 304.

##### SARA Title III Sect. 311/312 Categorization

- Immediate (Acute) Health Hazard - Pressure Hazard

##### SARA Title III Sect. 313

This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Carbon Dioxide (Fire Extinguishing Agent and Expellant)

---

#### 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 Reactivity - 0  
HMIS Code for Personal Protection - See Section 8

##### **Abbreviations**

N/A: Denotes no applicable information found or available  
CAS#: Chemical Abstracts Service Number  
ACGIH: American Conference of Governmental Industrial Hygienists  
OSHA: Occupational Safety and Health Administration  
TLV: Threshold Limit Value  
PEL: Permissible Exposure Limit  
STEL: Short Term Exposure Limit  
NTP: National Toxicology Program  
IARC: International Agency for Research on Cancer  
R: Risk  
S: Safety  
LCLo: Lethal concentration low

**Prepared By:** EnviroNet LLC.

The information contained herein is based on data believed to be accurate. However, no representation, warranty, or guarantee is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for its own particular use. Badger Fire Protection assumes no responsibility for personal injury or property damage resulting from use, handling or from contact with this product.

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A UTC Fire & Security Company

# MATERIAL SAFETY DATA SHEET

## Wet Chemical Solution (Portable Fire Extinguisher Agent)

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATIONS AND OF THE COMPANY UNDERTAKING

**Product Name** Wet Chemical Solution (Portable Fire Extinguisher Agent)  
**Other Trade Names** AC-100, AC-250, Potassium Acetate, Class K  
**Product Description** Fire Extinguishing Agent  
**Manufacturer/Supplier** Badger Fire Protection  
**Address** 944 Glenwood Station Lane, Suite 303  
Charlottesville, VA 22901  
USA  
**Phone Number** (434)-964-3200  
**Chemtrec Number** (800) 424-9300  
**(for emergencies only)** (703) 527-3887 (International)  
**Revision Date:** February 9, 2012  
**MSDS Date:** January 15, 2007

*Safety Data Sheet according to EC directive 2001/59/EC and OSHA's Hazcom Standard (29 CFR 1910.1200)*

### 2. HAZARDS IDENTIFICATION

**EU Main Hazards**  
Non Hazardous Liquid

#### Routes of Entry

Eye contact - Inhalation - Skin contact

#### Carcinogenic Status

Not considered carcinogenic by NTP, IARC, and OSHA.

#### Target Organs

Respiratory System - Skin - Eye

#### Health Effects - Eyes

Contact for short periods of time may cause irritation.

#### Health Effects - Skin

Contact may cause mild irritation.

#### Health Effects - Ingestion

Ingestion is not an expected route of exposure.

#### Health Effects - Inhalation

May irritate the respiratory tract. May cause transient cough and shortness of breath.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Potassium Acetate	127-08-2 EC#2048222	35-45%	None	None
Water	7732-18-5 EC#2317912	55-65%	None	None



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Wet Chemical Solution (Portable Fire Extinguisher Agent)

---

#### 4. 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 affected area 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.

**Advice to Physicians**

Treat symptomatically.

---

#### 5. FIRE - FIGHTING MEASURES

---

**Extinguishing Media**

This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a blaze. Use extinguishing agent appropriate to other materials involved. Keep pressurized extinguishers and surroundings cool with water spray as they may rupture or burst in the heat of a fire.

**Unusual Fire and Explosion Hazards**

Pressurized containers may explode in heat of fire.

**Protective Equipment for Fire-Fighting**

Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

---

#### 6. ACCIDENTAL RELEASE MEASURES

---

Contain and absorb using appropriate inert material. Transfer into suitable containers for disposal. Prevent skin and eye contact. Wear appropriate protective equipment. Prevent large quantities of the material from entering drains or watercourses.

---

#### 7. HANDLING AND STORAGE

---

Pressurized extinguishers should be properly stored and secured to prevent falling or being knocked over. Do not drag, slide or roll extinguishers. Do not drop extinguishers or permit them to strike against each other. Never apply flame or localized heat directly to any part of the extinguisher or plastic container. Store pressurized extinguishers 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

---

**Occupational Exposure Standards**

Occupational exposure limits are listed below, if they exist.

**Potassium Acetate**

None



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Wet Chemical Solution (Portable Fire Extinguisher Agent)

---

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

---

##### Engineering Control Measures

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.

##### Respiratory Protection

Not normally required.

##### Hand Protection

Not normally needed when used as a portable fire extinguisher. Use gloves if irritation occurs.

##### Eye Protection

Chemical goggles or safety glasses with side shields.

##### Body Protection

Normal work wear.

---

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

---

Physical State	Liquid
Color	Clear or blue
Odor	Odorless
Specific Gravity	1.19 -1.24
Boiling Range/Point (°C/F)	100/212
Flash Point (PMCC) (°C/F)	Not Flammable
Solubility in Water	soluble
Vapor Density (Air = 1)	Not applicable
Vapor Pressure	Not applicable
Evaporation Rate	Not applicable

---

#### 10. STABILITY AND REACTIVITY

---

##### Stability

Stable under normal conditions.

##### Conditions to Avoid

- Heat - High temperatures - Exposure to direct sunlight

##### Materials to Avoid

- Strong oxidizing agents

##### Hazardous Polymerization

Will not occur.

##### Hazardous Decomposition Products

- oxides of carbon - potassium

---

#### 11. TOXICOLOGICAL INFORMATION

---

##### Acute Toxicity

Low order of acute toxicity.



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

Wet Chemical Solution  
(Portable Fire Extinguisher Agent)

---

### 11. TOXICOLOGICAL INFORMATION

---

**Chronic Toxicity/Carcinogenicity**

This product is not expected to cause long term adverse health effects.

**Genotoxicity**

This product is not expected to cause any mutagenic effects.

**Reproductive/Developmental Toxicity**

This product is not expected to cause adverse reproductive effects.

---

### 12. ECOLOGICAL INFORMATION

---

**Mobility**

No relevant studies identified.

**Persistence/Degradability**

No relevant studies identified.

**Bio-accumulation**

No relevant studies identified.

**Ecotoxicity**

No relevant studies identified.

---

### 13. DISPOSAL CONSIDERATIONS

---

Dispose of container in accordance with all applicable local and national regulations. Do not cut, puncture or weld on or near to the container. No harm to the environment is expected from this preparation.

---

### 14. TRANSPORT INFORMATION

---

<b>DOT CFR 172.101 Data</b>	Not regulated
<b>UN Proper Shipping Name</b>	Not regulated
<b>UN Class</b>	None
<b>UN Number</b>	None
<b>UN Packaging Group</b>	None

---

### 15. REGULATORY INFORMATION

---

**EU Label Information**

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments(2001/60/EC and 2006/8/EC)

**EU Hazard Symbol and Indication of Danger.**

This preparation is not classified as dangerous.

**R phrases**

None

**S phrases**

None.



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

Wet Chemical Solution  
(Portable Fire Extinguisher Agent)

---

### 15. REGULATORY INFORMATION

---

#### US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS

##### TSCA Listing

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

##### EINECS Listing

All ingredients in this product are listed on the European Inventory of Existing Commercial Chemical Substances (EINECS) or are exempt from listing.

##### DSL/NDSL (Canadian) Listing

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.

##### WHMIS Classification

D2B

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

##### MA Right To Know Law

All components have been checked for inclusion on the Massachusetts Substance List (MSL). Those components present at or above the de minimus concentration include: none

##### PA Right To Know Law

This product contains the following chemicals found on the Pennsylvania Hazardous Substance List: - none

##### NJ Right To Know Law

This product contains the following chemicals found on the NJ Right To Know Hazardous Substance List: - none

##### 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.

##### SARA Title III Sect. 302 (EHS)

This product does not contain any chemicals subject to SARA Title III Section 302.

##### SARA Title III Sect. 304

This product does not contain any chemicals subject to SARA Title III Section 304.

##### SARA Title III Sect. 311/312 Categorization

- Immediate (Acute) Health 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.

---

### 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



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Wet Chemical Solution (Portable Fire Extinguisher Agent)

---

#### 16. OTHER INFORMATION

---

##### HMIS Ratings

HMIS Code for Health - 1

HMIS Code for Flammability - 0

HMIS Code for Reactivity - 0

HMIS Code for Personal Protection - See Section 8

##### Abbreviations

N/A: Denotes no applicable information found or available

CAS#: Chemical Abstracts Service Number

ACGIH: American Conference of Governmental Industrial Hygienists

OSHA: Occupational Safety and Health Administration

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit

NTP: National Toxicology Program

IARC: International Agency for Research on Cancer

R: Risk

S: Safety

**Prepared By:** EnviroNet LLC.

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---

# MATERIAL SAFETY DATA SHEET

## Section 1. Chemical product and company identification

Product Name:	Super D Dry Powder Extinguishant
Synonym:	Class D Powder
Manufacturer:	AMEREX CORPORATION
Internet Address:	<a href="http://www.amerex-fire.com">www.amerex-fire.com</a>
Address:	7595 Gadsden Highway P.O. Box 81 Trussville, AL 35173-0081
Telephone:	(205) 655-3271
Emergency Contacts:	Chemtrec 1(800) 424-9300 or (703) 527-3887
Revised:	August, 2011

## Section 2. Hazard identification and emergency overview

Emergency overview: Off-white, fine solid powder, odorless.

Adverse health effects and symptoms: Moderate irritant to the respiratory system and eyes; mild irritant to the skin. Symptoms may include stinging of eyes and abraded skin, coughing, shortness of breath, and irritation of the lungs, eyes, and skin.

Exposure guidelines:

Ingredients	OSHA PEL	ACGIH TLV	DFG MAK *
Sodium chloride	PNOC** Total dust, 15 mg/m <sup>3</sup> Respirable fraction, 5 mg/m <sup>3</sup>	PNOC Total dust, 10 mg/m <sup>3</sup> Respirable fraction, 3 mg/m <sup>3</sup>	PNOC Total dust, 4 mg/m <sup>3</sup> Respirable fraction, 1.5 mg/m <sup>3</sup>
Mica	20 mppcf***	3 mg/m <sup>3</sup> respirable fraction	-----
Fullers Earth	PNOC Total dust, 15 mg/m <sup>3</sup> Respirable fraction, 5 mg/m <sup>3</sup>	PNOC Total dust, 10 mg/m <sup>3</sup> Respirable fraction, 3 mg/m <sup>3</sup>	PNOC Total dust, 4 mg/m <sup>3</sup> Respirable fraction, 1.5 mg/m <sup>3</sup>
Mineralite (Zeolite)	<u>80 mg/m<sup>3</sup></u> % SiO <sub>2</sub>	10 mg/m <sup>3</sup>	4 mg/m <sup>3</sup>
Magnesium stearate	PNOC Total dust, 15 mg/m <sup>3</sup> Respirable fraction, 5 mg/m <sup>3</sup>	PNOC Total dust, 10 mg/m <sup>3</sup> Respirable fraction, 3 mg/m <sup>3</sup>	PNOC Total dust, 4 mg/m <sup>3</sup> Respirable fraction, 1.5 mg/m <sup>3</sup>

Silica, amorphous (fumed)	PNOC Total dust, 15 mg/m <sup>3</sup> Respirable fraction, 5 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>
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\*German regulatory limits \*\*PNOC = Particulates not otherwise classified (ACGIH) also known as Particulates not otherwise regulated (OSHA) \*\*\* mppcf = million particles per cubic foot. All values are 8 hour time weighted average concentrations.

Hazard symbols: WHMIS (Canadian workplace hazardous materials identification system)

D2B may irritate eyes, mucous membranes, or skin

### Section 3. Composition/information on ingredients

Name/Compound	Weight %	CAS #
Sodium chloride evaporated flour grade	87	7647-14-5
Fullers earth magnesium aluminum silicate-	4.2	8031-18-3
Mica potassium aluminum silicate	4.2	12001-26-2
Zeolite, synthetic amorphous precipitated silica	2.1	112926-00-8
Silica, amorphous, fumed	< 2	69012-64-2
Magnesium stearate octadecanoic acid, Mg salt	< 1	557-04-0

### Section 4. First Aid Measures

Eye Exposure: Irrigate eyes with water and repeat until pain free. Seek medical attention if irritation develops or if vision changes occur.

Skin Exposure: In case of contact, wash with plenty of soap and water. Seek medical attention if irritation develops.



Inhalation: If respiratory irritation or distress occurs remove victim to fresh air. Seek medical attention if irritation develops or persists.

Ingestion: Not known to present an ingestion hazard.

Medical conditions possibly aggravated by exposure: Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema, or bronchitis. Skin contact may aggravate existing skin disease. Chronic overexposure may cause pneumoconiosis (“dusty lung” disease).

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### Section 5. Fire fighting measures

Extinguishing media: non combustible and non flammable – product is an extinguishing agent

Unusual fire/explosion hazards: none known

Insensitive to mechanical impact or static discharge.

HMIS Hazard Ranking:

health = 1, flammability = 0, reactivity = 0, personal protective equipment: use N-95 dust mask (see Section 8)

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### Section 6. Accidental release measures

Clean up released material using vacuum or wet sweep and shovel to minimize generation of dust. Wear appropriate respiratory protection. Bag and drum for disposal. If product is used and/or contaminated, use PPE and containment appropriate to the nature of the mixture.

---

### Section 7. Handling and storage

Avoid skin, eye, or respiratory exposure. Use appropriate PPE when handling or maintaining equipment, and wash thoroughly after handling (see Section 8). Keep product in original container or extinguisher. Contents may be under pressure – inspect for extinguisher rust periodically to insure container integrity. Do not mix with other extinguishing agents.

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## Section 8. Exposure controls/ personal protection

During the application of this product against fires, exhaust gases and the products of incomplete combustion (PICs) are the principal respiratory hazards. In the manufacture of extinguishers, automated systems and point source ventilation controls sufficiently minimize respiratory exposure. Employers and employees must use their collective judgment in determining occupational settings where the use of a dust mask or air purifying respirator is prudent. The need for respiratory protection is not likely for short-term use in well ventilated areas.

Respiratory protection: use N95 dust mask for limited exposure, use air-purifying respirator (APR) with high efficiency particulate air (HEPA) filters for prolonged exposure.

Eye protection: wear chemical goggles

Skin protection: use nitrile, latex, or similar gloves and coveralls. Good personal hygiene practices essential, such as avoiding food, tobacco products, or other hand-to-mouth contact when handling. Wash thoroughly after handling.

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## Section 9. Physical and chemical properties

Appearance: off-white powder, finely divided odorless solid.

Specific gravity: ~ 1.0

Solubility: product is not coated, soluble in water

Non –flammable

Flash point: none

Vapor pressure: < 1 mm Hg

pH: approximately 7 for a 10% solution

Boiling point: not applicable

No explosive or oxidizing properties

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## Section 10. Stability and reactivity

Stability: stable

Incompatibles: strong acids and strong oxidizers like bleach.

Decomposition products: heat of fire may release chlorine compounds and oxides of sodium.

Possibility of hazardous reactions: none

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### Section 11. Toxicological information

Acute toxicity: Sodium chloride LD<sub>50</sub> (rat): oral, 3000 mg/kg body weight, LD<sub>50</sub> (mouse): oral, 4000 mg/kg body weight, LDLo (lowest lethal dose) (rat): subcutaneous, 3500 mg/kg body weight, LDLo (dog): intraperitoneal, 364 mg/kg body weight.  
Target organs in man: None. While an essential nutrient, sodium chloride is a mild irritant to epithelial tissue, (eyes, mucous membranes, skin) and may aggravate dermatitis. No information was found indicating the product causes sensitization.

Chronic toxicity: This product's ingredients are not considered as "probable" or "suspected" carcinogens by OSHA, IARC, or ACGIH. Pneumoconiosis, or "dusty lung" disease, may result from chronic exposure to any dust.

Reproductive toxicity: This product's ingredients are not known to have reproductive or teratogenic effects.

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### Section 12. Ecological information

Ecotoxicity: negative effects unknown.

Persistence/  
Degradability: degrades slowly in humid/wet environment

Bioaccumulation: extent unknown

Mobility in soil: insoluble coating, poor mobility

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### Section 13. Disposal considerations

This product is not a RCRA characteristically hazardous or listed hazardous waste. Dispose of according to state or local laws, which may be more restrictive than federal laws or regulations. Used product may be altered or contaminated, creating different disposal considerations.

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### Section 14. Transportation information

This product is not defined as a hazardous material under U.S. Department of Transportation (DOT) 49 CFR 172, or by Transport Canada "Transportation of Dangerous Goods" regulations.

When shipped in a stored pressure type fire extinguisher, and pressurized with a non-flammable, non-toxic inert expellant gas, the fire extinguisher is considered a hazardous material by the US Department of Transportation and Transport Canada. The proper shipping name shall be FIRE EXTINGUISHER and the UN designation is UN 1044. The DOT hazard class/ division is 2.2 Non-Flammable Gas. Packing Group – N/A.

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### Section 15. Regulatory information

International Inventory Status:

All ingredients are on the following inventories

Country(ies)	Agency	Status
United States of America	TSCA	Yes
Canada	DSL	Yes
Europe	EINECS/ELINCS	Yes
Australia	AICS	Yes
Japan	MITI	Yes
South Korea	KECL	Yes

European Risk and Safety phrases:

EU Classification: Irritant  
R Phrases: 20 Harmful by inhalation.  
36/37 Irritating to eyes, respiratory system.

S Phrases:	22	Do not breathe dust.
	24/25	Avoid contact with skin and eyes
	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

U.S. federal regulatory information:

None of the chemicals in this product are under SARA reporting requirements or have SARA threshold planning quantities (TPQs) or CERCLA reportable quantities (RQs), or are regulated under TSCA 8(d).

State regulatory information:

Chemicals in this product are covered under specific State regulations, as denoted below:

**Alaska** - Designated Toxic and Hazardous Substances: None  
**California** – Permissible Exposure Limits for Chemical Contaminants: None  
**Florida** – Substance List: Mica Dust  
**Illinois** – Toxic Substance List: None  
**Kansas** – Section 302/303 List: None  
**Massachusetts** – Substance List: Mica Dust  
**Minnesota** – List of Hazardous Substances: None  
**Missouri** – Employer Information/Toxic Substance List: None  
**New Jersey** – Right to Know Hazardous Substance List: None  
**North Dakota** – List of Hazardous Chemicals, Reportable Quantities: None  
**Pennsylvania** – Hazardous Substance List: None  
**Rhode Island** – Hazardous Substance List: Mica Dust  
**Texas** – Hazardous Substance List: No  
**West Virginia** – Hazardous Substance List: None  
**Wisconsin** – Toxic and Hazardous Substances: None

California Proposition 65: No component is listed on the California Proposition 65 list.

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## Section 16. Shipping information

When shipped in a stored pressure type fire extinguisher, and pressurized with a non-flammable, non-toxic inert expellant gas, the fire extinguisher is considered a hazardous material by the US Department of Transportation and Transport Canada. The proper shipping name shall be FIRE EXTINGUISHER and the UN designation is UN 1044. The DOT hazard class/division is 2.2 Non-Flammable Gas. Packing Group – N/A
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## Section 17. Other information

This MSDS conforms to requirements under U.S., U.K., Canadian, Australian, and EU regulations or standards, and conforms to the proposed 2003 ANSI Z400.1 format.

The information herein is given in good faith but no warranty, expressed or implied, is made. Updated by Lindsay R. Hill, CIH



A UTC Fire & Security Company

# MATERIAL SAFETY DATA SHEET

## Halotron-1 (Fire Extinguishing Agent)

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATIONS AND OF THE COMPANY UNDERTAKING

**Product Name** Halotron-1 (Fire Extinguishing Agent)  
**Other Trade Names** HCFC Blend B, Halocarbon Agent  
**Product Description** Fire Extinguishing Agent  
**Manufacturer/Supplier** Badger Fire Protection  
**Address** 944 Glenwood Station Lane, Suite 303  
Charlottesville, VA 22901  
USA  
**Phone Number** (434)-964-3200  
**Chemtrec Number** (800) 424-9300  
**(for emergencies only)** (703) 527-3887 (International)  
**Revision Date:** February 9, 2012  
**MSDS Date:** January 15, 2007

*Safety Data Sheet according to EC directive 2001/59/EC and OSHA's Hazcom Standard (29 CFR 1910.1200)*

### 2. HAZARDS IDENTIFICATION

**EU Main Hazards**  
Non Flammable Gas

#### **Routes of Entry**

Eye contact - Inhalation - Skin contact

#### **Carcinogenic Status**

Not considered carcinogenic by NTP, IARC, and OSHA.

#### **Target Organs**

Respiratory System - Eye - Cardiovascular System - Central Nervous System - Liver

#### **Health Effects - Eyes**

Direct contact with the cold liquid or gas may cause irritation with discomfort, tearing or blurring of vision.

#### **Health Effects - Skin**

Direct contact with the cold gas or liquid can cause cooling of exposed tissues.

#### **Health Effects - Ingestion**

Ingestion is not likely to occur during normal handling and use.

#### **Health Effects - Inhalation**

Short term exposure to vapor at high concentrations have the following effects: light headedness - dizziness - difficulty with breathing - drowsiness - nausea - mental confusion - irregular pulse - palpitations - loss of consciousness and death. Chronic overexposure may adversely affect the liver. Individuals with pre-existing disease of the central nervous system, cardiovascular system and liver will be at increased risk.



A UTC Fire & Security Company

# MATERIAL SAFETY DATA SHEET

## Halotron-1 (Fire Extinguishing Agent)

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
2,2-dichloro-1,1,1-trifluoroethane	306-83-2 EC#206-190-3	>93%	None	Non Flammable Gas
Proprietary gas mixture	N.A.	<7%	None	None

### 4. FIRST AID MEASURES

#### Eyes

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

#### Skin

For general skin exposure, apply large amounts of water. If frostbite occurs, gently warm affected areas. Obtain medical attention if blistering occurs or redness persists.

#### Ingestion

Do not induce vomiting. Dilute by drinking large quantities of water and obtain medical attention.

#### Inhalation

Remove from exposure. If there is difficulty in breathing, give oxygen. Obtain medical attention immediately.

#### Advice to Physicians

Treat symptomatically.

### 5. FIRE - FIGHTING MEASURES

#### Extinguishing Media

Halotron-1 is used as an extinguishing agent and therefore is not a problem when trying to control a blaze. Use extinguishing agent appropriate to other materials involved. Keep containers and surroundings cool with water spray as containers may rupture or burst in the heat of a fire. The concentrated agent when applied to fire can produce toxic by-products specifically hydrogen halides which can cause damage. Avoid inhalation of these materials by evacuating and ventilating the area.

#### Unusual Fire and Explosion Hazards

Containers may explode in heat of fire.

#### Protective Equipment for Fire-Fighting

Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

### 6. ACCIDENTAL RELEASE MEASURES

Wear full protective clothing and self-contained breathing apparatus. Remove leaking cylinder to a safe place. Ventilate the area. Vapors can accumulate in low areas. Confined spaces should only be entered using a self-contained breathing apparatus.

### 7. HANDLING AND STORAGE

Cylinders should be properly stored and secured to prevent falling or being knocked over. Do not drag, slide or roll cylinders. Do not drop cylinders or permit them to strike against each other. Never apply flame or localized heat directly to any part of the cylinder.





A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Halotron-1 (Fire Extinguishing Agent)

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#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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##### Occupational Exposure Standards

##### Workplace Environmental Exposure Level (chronic handling)

WEEL(AIHA)(8 hrs): 50 ppm (v/v), based on the primary component

Manufacturer's Recommended 1 Hr. Emergency Exposure Limit: 1000ppm (v/v)

Manufacturer's Recommended 1 Min. Emergency Exposure Limit: 2500ppm (v/v)

##### Exposure Level When Using Halotron I in a Fire Extinguisher

Exposure when using this material as a fire extinguishing agent - the exposure should not exceed 20,000 ppm (v/v). Guidelines for the safe minimum volume when this agent is used in a confined space are provided on the label of the extinguisher.

##### Engineering Control Measures

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

##### Respiratory Protection

Not normally required under conditions of use as a portable fire extinguisher. In areas where the agent concentration is above acceptable levels, use a self contained breathing apparatus, as an air purifying respirator will not provide protection.

##### Hand Protection

Wear rubber gloves. Avoid contact with skin.

##### Eye Protection

Chemical goggles or safety glasses with side shields. Avoid contact with eyes.

##### Body Protection

Normal work wear.

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#### 9. PHYSICAL AND CHEMICAL PROPERTIES

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<b>Physical State</b>	Pressurized Liquid
<b>Color</b>	Colorless
<b>Odor</b>	Slight ether
<b>Boiling Range/Point (°C/F)</b>	27°C/80.6°F
<b>Flash Point (PMCC) (°C/F)</b>	Not Flammable
<b>Solubility in Water</b>	0.39% wt @25°C/ 77°F, 1 atm.
<b>Relative Density (Air = 1)</b>	5.14
<b>Vapor Pressure of Liquid</b>	~ 11.2 psig @ 68°F 77 kPa @ 20°C
<b>Liquid Density</b>	92.3 lb/ft <sup>3</sup> @ 77 °F 1.48 kg/l @ 25°C
<b>Gas Density</b>	~ 0.385 lb/ft <sup>3</sup> ~6.17 kg/m <sup>3</sup>
<b>Evaporation Rate</b>	Not measured - readily volatilizes



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Halotron-1 (Fire Extinguishing Agent)

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#### 10. STABILITY AND REACTIVITY

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**Stability**

Stable under normal conditions.

**Conditions to Avoid**

Avoid heating the storage cylinder above temperatures which will cause an overpressure to occur.

**Materials to Avoid**

Incompatible with alkali or alkaline earth metals, and powdered metals Al, Zn, Be, etc.

**Hazardous Polymerization**

Will not occur.

**Hazardous Decomposition Products**

Hydrogen fluoride - hydrogen chloride - possibly carbonyl halides

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#### 11. TOXICOLOGICAL INFORMATION

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**Acute Toxicity**

Low order of acute toxicity

For: 2,2-dichloro-1,1,1-trifluoroethane: Inhalation 4 hour, LC50(rat): 32,000 ppm

Oral ALD, rat: 9000 mg/kg

Dermal ALD, rabbit: >2000 mg/kg

**Chronic Toxicity/Carcinogenicity**

This product is not expected to cause long term adverse health effects.

**Genotoxicity**

This product is not expected to cause any mutagenic effects.

**Reproductive/Developmental Toxicity**

This product is not expected to cause adverse reproductive effects.

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#### 12. ECOLOGICAL INFORMATION

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**Mobility**

No data available.

**Persistence/Degradability**

No data available.

**Bio-accumulation**

No data available.

**Ecotoxicity**

**For: 2,2-dichloro-1,1,1-trifluoroethane:**

Aquatic Toxicity: slightly toxic

96 hour LC50- fathead minnows: >77mg/L

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#### 13. DISPOSAL CONSIDERATIONS

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



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Halotron-1 (Fire Extinguishing Agent)

#### 14. TRANSPORT INFORMATION

##### **Bulk Shipments:**

**DOT CFR 172.101 Data** Compressed Gases, n.o.s. (contains Tetrafluoromethane, Argon), 2.2, UN1956

**UN Proper Shipping Name** Compressed Gases, n.o.s. (contains Tetrafluoromethane, Argon)

**UN Class** (2.2) Non-Flammable Gas

**UN Number** UN1956

**UN Packaging Group** Not applicable

##### **Fire Extinguishers:**

**DOT CFR 172.101 Data** Fire extinguishers, 2.2, UN1044

**UN Proper Shipping Name** Fire extinguishers, 2.2, UN1044

**UN Class** (2.2) Non-Flammable Gas

**UN Number** UN1044

**UN Packaging Group** Not applicable

#### 15. REGULATORY INFORMATION

##### **EU Label Information**

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments(2001/60/EC and 2006/8/EC)

##### **EU Hazard Symbol and Indication of Danger.**

Non Flammable Gas

##### **R phrases**

None

##### **S phrases**

S9 Keep container in a well ventilated place.

##### **US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS**

##### **TSCA Listing**

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

##### **EINECS Listing**

All ingredients in this product are listed on the European Inventory of Existing Commercial Chemical Substances (EINECS) or the European List of New Chemical Substances (ELINCS) or are exempt from listing.

##### **DSL/NDSL (Canadian) Listing**

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.

##### **WHMIS Classification**

A

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Halotron-1 (Fire Extinguishing Agent)

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#### 15. REGULATORY INFORMATION

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##### **MA Right To Know Law**

All components have been checked for inclusion on the Massachusetts Substance List (MSL). Those components present at or above the de minimis concentration include: argon (7440-37-1)

##### **PA Right To Know Law**

This product contains the following chemicals found on the Pennsylvania Hazardous Substance List: - argon (7440-37-1) - tetrafluoromethane (75-73-0)

##### **NJ Right To Know Law**

This product contains the following chemicals found on the NJ Right To Know Hazardous Substance List: - argon (7440-37-1) - tetrafluoromethane (75-73-0)

##### **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.

##### **SARA Title III Sect. 302 (EHS)**

This product does not contain any chemicals subject to SARA Title III Section 302.

##### **SARA Title III Sect. 304**

This product does not contain any chemicals subject to SARA Title III Section 304.

##### **SARA Title III Sect. 311/312 Categorization**

- Immediate (Acute) Health Hazard - Pressure Hazard

##### **SARA Title III Sect. 313**

This product contains a chemical which is listed in Section 313 at or above de minimis concentrations: 2,2-dichloro-1,1,1-trifluoroethane (306-83-2)

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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 - 1

NFPA Code for Special Hazards - None

##### **HMIS Ratings**

HMIS Code for Health - 1

HMIS Code for Flammability - 0

HMIS Code for Reactivity - 1

HMIS Code for Personal Protection - See Section 8

##### **Abbreviations**

ALD: Approximate Lethal Dose

N/A: Denotes no applicable information found or available

CAS#: Chemical Abstracts Service Number

ACGIH: American Conference of Governmental Industrial Hygienists

OSHA: Occupational Safety and Health Administration

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit

NTP: National Toxicology Program



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Halotron-1 (Fire Extinguishing Agent)

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#### 16. OTHER INFORMATION

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IARC: International Agency for Research on Cancer  
R: Risk  
S: Safety

**Prepared By:** EnviroNet LLC.

The information contained herein is based on data believed to be accurate. However, no representation, warranty, or guarantee is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for its own particular use. Badger Fire Protection assumes no responsibility for personal injury or property damage resulting from use, handling or from contact with this product.

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A UTC Fire & Security Company

# MATERIAL SAFETY DATA SHEET

## Universal Ultra AR-AFFF Concentrate (Fire Extinguishing Agent)

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATIONS AND OF THE COMPANY UNDERTAKING

**Product Name** Universal Ultra AR-AFFF Concentrate (Fire Extinguishing Agent)  
**Other Trade Names** Alcohol Resistant Aqueous Film Forming Foam  
**Product Description** Fire Extinguishing Agent  
**Manufacturer/Supplier** Badger Fire Protection  
**Address** 944 Glenwood Station Lane, Suite 303  
Charlottesville, VA 22901  
USA  
**Phone Number** (434)-964-3200  
**Chemtrec Number** (800) 424-9300  
**(for emergencies only)** (703) 527-3887 (International)  
**Revision Date:** February 9, 2012  
**MSDS Date:** January 17, 2007

*Safety Data Sheet according to EC directive 2001/59/EC and OSHA's Hazcom Standard (29 CFR 1910.1200)*

### 2. HAZARDS IDENTIFICATION

**EU Main Hazards**  
Non Hazardous Liquid

#### Routes of Entry

Eye contact - Inhalation - Skin contact

#### Carcinogenic Status

Not considered carcinogenic by NTP, IARC, and OSHA.

#### Target Organs

Respiratory System - Skin - Eye

#### Health Effects - Eyes

Contact for short periods of time may cause irritation.

#### Health Effects - Skin

Contact may cause moderate irritation. Repeated or prolonged contact may produce defatting of the skin leading to irritation and dermatitis.

#### Health Effects - Ingestion

Ingestion is not an expected route of exposure.

#### Health Effects - Inhalation

Inhalation is not an expected route of exposure during normal industrial use. Excessive inhalation exposure may cause irritation of respiratory tract, anesthetic or narcotic effects.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Water	7732-18-5 EC#2317912	89.5 - 98.3%	None	None



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Universal Ultra AR-AFFF Concentrate (Fire Extinguishing Agent)

#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
(2-Methoxymethylethoxy)Propanol	34590-94-8 EC#2521042	0.5 - 2.5%	Xi	R36,R38
Synthetic Detergents	Proprietary	1.0 - 5.0%	None	None
Polysaccharide	11138-66-2 EC#2343942	0.1 - 1.5%	None	None
Fluoroalkyl Surfactant	Proprietary	0.1 - 1.5%	None	None

#### 4. 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 affected area 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.

##### Advice to Physicians

Treat symptomatically.

#### 5. FIRE - FIGHTING MEASURES

##### Extinguishing Media

This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a blaze. Use extinguishing agent appropriate to other materials involved. Keep pressurized extinguishers and surroundings cool with water spray as they may rupture or burst in the heat of a fire.

##### Unusual Fire and Explosion Hazards

Pressurized containers may explode in heat of fire.

##### Protective Equipment for Fire-Fighting

Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

#### 6. ACCIDENTAL RELEASE MEASURES

Contain and absorb using appropriate inert material. Transfer into suitable containers for disposal. Prevent skin and eye contact. Wear appropriate protective equipment. Prevent the material from entering drains or watercourses.



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Universal Ultra AR-AFFF Concentrate (Fire Extinguishing Agent)

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#### 7. HANDLING AND STORAGE

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Pressurized extinguishers should be properly stored and secured to prevent falling or being knocked over. Do not drag, slide or roll extinguishers. Do not drop extinguishers or permit them to strike against each other. Never apply flame or localized heat directly to any part of the extinguisher or plastic container. Store pressurized extinguishers 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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##### Occupational Exposure Standards

Occupational exposure limits are listed below, if they exist.

##### (2-Methoxymethylethoxy)Propanol

ACGIH: TLV 100 ppm (606 mg/m<sup>3</sup>) 8h TWA. 150 ppm (909 mg/m<sup>3</sup>) STEL.

OSHA: PEL 100 ppm (600 mg/m<sup>3</sup>)

Can be absorbed through skin.

##### Engineering Control Measures

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.

##### Respiratory Protection

Not normally required.

##### Hand Protection

Not normally needed when used as a portable fire extinguisher. Use gloves if irritation occurs.

##### Eye Protection

Chemical goggles or safety glasses with side shields.

##### Body Protection

Normal work wear.

---

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

---

<b>Physical State</b>	Viscous Liquid
<b>Color</b>	Yellow
<b>Odor</b>	Mild, pleasant
<b>pH</b>	8.5
<b>Specific Gravity</b>	1.015 @ 25°C
<b>Boiling Range/Point (°C/F)</b>	Not applicable
<b>Flash Point (PMCC) (°C/F)</b>	Not Flammable
<b>Solubility in Water</b>	soluble
<b>Vapor Density (Air = 1)</b>	Not applicable
<b>Vapor Pressure</b>	Not applicable
<b>Evaporation Rate (Butyl Acetate = 1)</b>	<1





A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Universal Ultra AR-AFFF Concentrate (Fire Extinguishing Agent)

---

#### 10. STABILITY AND REACTIVITY

---

**Stability**

Stable under normal conditions.

**Conditions to Avoid**

Heat - High temperatures - Exposure to direct sunlight

**Materials to Avoid**

Water reactive materials – burning metals – electronically energized equipment

**Hazardous Polymerization**

Will not occur.

**Hazardous Decomposition Products**

Oxides of carbon

---

#### 11. TOXICOLOGICAL INFORMATION

---

**Acute Toxicity**

Low order of acute toxicity.

**Chronic Toxicity/Carcinogenicity**

This product is not expected to cause long term adverse health effects.

**Genotoxicity**

This product is not expected to cause any mutagenic effects.

**Reproductive/Developmental Toxicity**

This product is not expected to cause adverse reproductive effects.

---

#### 12. ECOLOGICAL INFORMATION

---

**Mobility**

No relevant studies identified.

**Persistence/Degradability**

No relevant studies identified.

**Bio-accumulation**

No relevant studies identified.

**Ecotoxicity**

No relevant studies identified.

---

#### 13. DISPOSAL CONSIDERATIONS

---

Dispose of container in accordance with all applicable local and national regulations. Do not cut, puncture or weld on or near to the container.

---

#### 14. TRANSPORT INFORMATION

---

<b>DOT CFR 172.101 Data</b>	Not regulated
<b>UN Proper Shipping Name</b>	Not regulated
<b>UN Class</b>	None



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Universal Ultra AR-AFFF Concentrate (Fire Extinguishing Agent)

#### 14. TRANSPORT INFORMATION

UN Number	None
UN Packaging Group	None

#### 15. REGULATORY INFORMATION

##### EU Label Information

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments(2001/60/EC and 2006/8/EC)

##### EU Hazard Symbol and Indication of Danger.

This preparation is not classified as dangerous.

##### R phrases

None

##### S phrases

None.

##### US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS

##### TSCA Listing

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

##### EINECS Listing

All ingredients in this product are listed on the European Inventory of Existing Commercial Chemical Substances (EINECS) or are exempt from listing.

##### DSL/NDSL (Canadian) Listing

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.

##### WHMIS Classification

D2B

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

##### MA Right To Know Law

All components have been checked for inclusion on the Massachusetts Substance List (MSL). Those components present at or above the de minimus concentration include: magnesium nitrate(10377-60-3) <0.5% , (2-Methoxymethylethoxy)Propanol (34590-94-8) <3%

##### PA Right To Know Law

This product contains the following chemicals found on the Pennsylvania Hazardous Substance List: - (2-Methoxymethylethoxy)Propanol (34590-94-8) <3%

##### NJ Right To Know Law

This product contains the following chemicals found on the NJ Right To Know Hazardous Substance List: - (2-Methoxymethylethoxy)Propanol (34590-94-8) <3%, magnesium nitrate <0.5%

##### 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.



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Universal Ultra AR-AFFF Concentrate (Fire Extinguishing Agent)

---

#### 15. REGULATORY INFORMATION

---

**SARA Title III Sect. 302 (EHS)**

This product does not contain any chemicals subject to SARA Title III Section 302.

**SARA Title III Sect. 304**

This product does not contain any chemicals subject to SARA Title III Section 304.

**SARA Title III Sect. 311/312 Categorization**

- Immediate (Acute) Health 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.

---

#### 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 Reactivity - 0

HMIS Code for Personal Protection - See Section 8

**Abbreviations**

N/A: Denotes no applicable information found or available

CAS#: Chemical Abstracts Service Number

ACGIH: American Conference of Governmental Industrial Hygienists

OSHA: Occupational Safety and Health Administration

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit

NTP: National Toxicology Program

IARC: International Agency for Research on Cancer

R: Risk

R36: Irritating to eyes.

R38: Irritating to skin.

S: Safety

**Prepared By:** EnviroNet LLC.

The information contained herein is based on data believed to be accurate. However, no representation, warranty, or guarantee is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for its own particular use. Badger Fire Protection assumes no responsibility for personal injury or property damage resulting from use, handling or from contact with this product.



A UTC Fire & Security Company

# MATERIAL SAFETY DATA SHEET

## Karbaloy (Fire Extinguishing Agent)

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATIONS AND OF THE COMPANY UNDERTAKING

**Product Name** Karbaloy (Fire Extinguishing Agent)  
**Other Trade Names** Potassium Carbonate, Range Guard System Wet Chemical  
**Product Description** Fire Extinguishing Agent  
**Manufacturer/Supplier** Badger Fire Protection  
**Address** 944 Glenwood Station Lane, Suite 303  
Charlottesville, VA 22901  
USA  
**Phone Number** (434)-964-3200  
**Chemtrec Number** (800) 424-9300  
**(for emergencies only)** (703) 527-3887 (International)  
**Revision Date:** February 9, 2012  
**MSDS Date:** January 15, 2007

*Safety Data Sheet according to EC directive 2001/59/EC and OSHA's Hazcom Standard (29 CFR 1910.1200)*

### 2. HAZARDS IDENTIFICATION

#### EU Main Hazards

Irritating to eyes, respiratory system and skin.

#### Routes of Entry

Eye contact - Inhalation - Skin contact

#### Carcinogenic Status

Not considered carcinogenic by NTP, IARC, and OSHA.

#### Target Organs

Respiratory System - Skin - Eye

#### Health Effects - Eyes

Contact for short periods of time may cause irritation. Prolonged contact can cause severe irritation and eye damage.

#### Health Effects - Skin

Contact may cause mild irritation. Prolonged contact can cause chemical burns.

#### Health Effects - Ingestion

Ingestion may cause severe irritation, vomiting and chemical burns.

#### Health Effects - Inhalation

May cause irritation of the respiratory tract and coughing.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Potassium Carbonate	584-08-7 EC#2095293	>40%	R36/37/38	Xn
Water	7732-18-5 EC#2317912	<60%	None	None



A UTC Fire & Security Company

# MATERIAL SAFETY DATA SHEET

## Karbaloy (Fire Extinguishing Agent)

---

### 4. 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 affected area 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.

#### **Advice to Physicians**

Treat symptomatically.

---

### 5. FIRE - FIGHTING MEASURES

---

#### **Extinguishing Media**

This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a blaze. Use extinguishing agent appropriate to other materials involved. Keep all pressurized containers and jugs and surroundings cool with water spray as they may rupture or burst in the heat of a fire.

#### **Unusual Fire and Explosion Hazards**

Pressurized containers may explode in heat of fire.

#### **Protective Equipment for Fire-Fighting**

Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

---

### 6. ACCIDENTAL RELEASE MEASURES

---

Contain and absorb using appropriate inert material. Transfer into suitable containers for disposal. Prevent skin and eye contact. Wear appropriate protective equipment. Prevent large quantities of the material from entering drains or watercourses.

---

### 7. HANDLING AND STORAGE

---

Pressurized containers and jugs should be properly stored and secured to prevent falling or being knocked over. Do not drag, slide or roll containers. Do not drop containers or permit them to strike against each other. Never apply flame or localized heat directly to any part of the container. Store 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

---

#### **Occupational Exposure Standards**

Occupational exposure limits are listed below, if they exist.

#### **Potassium Carbonate**

None established



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Karbaloy (Fire Extinguishing Agent)

---

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

---

##### Engineering Control Measures

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.

##### Respiratory Protection

Not normally required.

##### Hand Protection

Use rubber gloves when handling the preparation.

##### Eye Protection

Chemical goggles or safety glasses with side shields.

##### Body Protection

Normal work wear.

---

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

---

Physical State	Liquid
Color	Clear
Odor	Odorless
pH	>11
Specific Gravity	~1.4
Boiling Range/Point (°C/F)	108.9°C/228°F
Flash Point (PMCC) (°C/F)	Not Flammable
Solubility in Water	Soluble
Vapor Density (Air = 1)	Not applicable
Vapor Pressure	Not applicable
Evaporation Rate	Not applicable

---

#### 10. STABILITY AND REACTIVITY

---

##### Stability

Stable under normal conditions.

##### Conditions to Avoid

Heat - High temperatures - Exposure to direct sunlight

##### Materials to Avoid

Acids – ammonium compounds - metals

##### Hazardous Polymerization

Will not occur.

##### Hazardous Decomposition Products

Oxides of carbon



A UTC Fire & Security Company

# MATERIAL SAFETY DATA SHEET

## Karbaloy (Fire Extinguishing Agent)

---

### 11. TOXICOLOGICAL INFORMATION

---

**Acute Toxicity**

Low order of acute toxicity.

Potassium Carbonate: Oral LD50 (rat): 1870 mg/kg

**Chronic Toxicity/Carcinogenicity**

This product is not expected to cause long term adverse health effects.

**Genotoxicity**

This product is not expected to cause any mutagenic effects.

**Reproductive/Developmental Toxicity**

This product is not expected to cause adverse reproductive effects.

---

### 12. ECOLOGICAL INFORMATION

---

**Mobility**

No relevant studies identified.

**Persistence/Degradability**

No relevant studies identified.

**Bio-accumulation**

No relevant studies identified.

**Ecotoxicity**

No relevant studies identified.

---

### 13. DISPOSAL CONSIDERATIONS

---

Dispose of container in accordance with all applicable local and national regulations. Do not cut, puncture or weld on or near to the container. No harm to the environment is expected from this preparation.

---

### 14. TRANSPORT INFORMATION

---

<b>DOT CFR 172.101 Data</b>	Not regulated
<b>UN Proper Shipping Name</b>	Not regulated
<b>UN Class</b>	None
<b>UN Number</b>	None
<b>UN Packaging Group</b>	None

---

### 15. REGULATORY INFORMATION

---

**EU Label Information**

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments(2001/60/EC and 2006/8/EC)

**EU Hazard Symbol and Indication of Danger.**

Xi - Irritant

**R phrases**

R36/37/38 -Irritating to eyes, respiratory system and skin.



A UTC Fire & Security Company

# MATERIAL SAFETY DATA SHEET

## Karbaloy (Fire Extinguishing Agent)

---

### 15. REGULATORY INFORMATION

---

#### S phrases

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36 Wear suitable protective clothing.

#### US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS

##### TSCA Listing

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

##### EINECS Listing

All ingredients in this product are listed on the European Inventory of Existing Commercial Chemical Substances (EINECS) or are exempt from listing.

##### DSL/NDSL (Canadian) Listing

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.

##### WHMIS Classification

D2B

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

##### MA Right To Know Law

All components have been checked for inclusion on the Massachusetts Substance List (MSL). Those components present at or above the de minimus concentration include: none

##### PA Right To Know Law

This product contains the following chemicals found on the Pennsylvania Hazardous Substance List: - none

##### NJ Right To Know Law

This product contains the following chemicals found on the NJ Right To Know Hazardous Substance List: - none

##### 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.

##### SARA Title III Sect. 302 (EHS)

This product does not contain any chemicals subject to SARA Title III Section 302.

##### SARA Title III Sect. 304

This product does not contain any chemicals subject to SARA Title III Section 304.

##### SARA Title III Sect. 311/312 Categorization

- Immediate (Acute) Health 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.





A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Karbaloy (Fire Extinguishing Agent)

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#### 16. OTHER INFORMATION

---

##### **NFPA Ratings**

NFPA Code for Health - 2

NFPA Code for Flammability - 0

NFPA Code for Reactivity - 0

NFPA Code for Special Hazards - None

##### **HMIS Ratings**

HMIS Code for Health - 2

HMIS Code for Flammability - 0

HMIS Code for Reactivity - 0

HMIS Code for Personal Protection - See Section 8

##### **Abbreviations**

N/A: Denotes no applicable information found or available

CAS#: Chemical Abstracts Service Number

ACGIH: American Conference of Governmental Industrial Hygienists

OSHA: Occupational Safety and Health Administration

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit

NTP: National Toxicology Program

IARC: International Agency for Research on Cancer

R: Risk

S: Safety

**Prepared By:** EnviroNet LLC.

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---



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Kidde 90 Multi-Purpose ABC Dry Chemical (Fire Extinguishing Agent)

#### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATIONS AND OF THE COMPANY UNDERTAKING

**Product Name** Kidde 90 Multi-Purpose ABC Dry Chemical (Fire Extinguishing Agent)  
**Other Trade Names** ABC, Ammonium Phosphate, Monoammonium Phosphate, Tri-Class  
**Product Description** Fire Extinguishing Agent  
**Manufacturer/Supplier** Badger Fire Protection  
**Address** 944 Glenwood Station Lane, Suite 303  
Charlottesville, VA 22901  
USA  
**Phone Number** (434)-964-3200  
**Chemtrec Number** (800) 424-9300  
**(for emergencies only)** (703) 527-3887 (International)  
**Revision Date:** February 9, 2012  
**MSDS Date:** January 15, 2007

*Safety Data Sheet according to EC directive 2001/59/EC and OSHA's Hazcom Standard (29 CFR 1910.1200)*

#### 2. HAZARDS IDENTIFICATION

**EU Main Hazards**

Non Hazardous Powder

**Routes of Entry**

Eye contact - Inhalation - Skin contact

**Carcinogenic Status**

See Section 11 - Toxicity

**Target Organs**

Respiratory System - Skin - Eye

**Health Effects - Eyes**

Contact for short periods of time may cause irritation.

**Health Effects - Skin**

Contact may cause mild irritation.

**Health Effects - Ingestion**

Ingestion is not an expected route of exposure.

**Health Effects - Inhalation**

May irritate the respiratory tract. May cause transient cough and shortness of breath.

#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Monoammonium Phosphate	7722-76-1 EC#2317645	85 - 97%	None	None
Ammonium Sulfate	7783-20-2 EC#2319841	1-6%	None	None
Mica	12001-26-2	1 - 4%	None	None
Clay	8031-18-3	<2%	None	None



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Kidde 90 Multi-Purpose ABC Dry Chemical (Fire Extinguishing Agent)

#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Amorphous Silica	7631-86-9 EC#2315454	<2%	None	None
Dye	NA	<0.1%	None	None

#### 4. FIRST AID MEASURES

##### Eyes

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

##### Skin

Wash affected area 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.

##### Advice to Physicians

Treat symptomatically.

#### 5. FIRE - FIGHTING MEASURES

##### Extinguishing Media

This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a blaze. Use extinguishing agent appropriate to other materials involved. Keep pressurized extinguishers and surroundings cool with water spray as they may rupture or burst in the heat of a fire.

##### Unusual Fire and Explosion Hazards

Pressurized containers may explode in heat of fire.

##### Protective Equipment for Fire-Fighting

Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

#### 6. ACCIDENTAL RELEASE MEASURES

Sweep up or vacuum. Prevent skin and eye contact. Wear appropriate protective equipment.

#### 7. HANDLING AND STORAGE

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



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Kidde 90 Multi-Purpose ABC Dry Chemical (Fire Extinguishing Agent)

---

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

---

##### Occupational Exposure Standards

Occupational 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

##### 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

##### Engineering Control Measures

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.

##### Respiratory Protection

Not normally required. Use dust mask where dustiness is prevalent, or TLV is exceeded.

##### Hand Protection

Not normally needed when used as a portable fire extinguisher. Use gloves if irritation occurs.

##### Eye Protection

Chemical goggles or safety glasses with side shields.

##### Body Protection

Normal work wear.

---

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

---

Physical State	Powder
Color	Pale Yellow
Odor	Odorless
Specific Gravity	Not available
Boiling Range/Point (°C/F)	Not applicable
Flash Point (PMCC) (°C/F)	Not Flammable
Solubility in Water	Not applicable
Vapor Density (Air = 1)	Heavier than air.
Vapor Pressure	Not applicable
Evaporation Rate	Not applicable

---

#### 10. STABILITY AND REACTIVITY

---

##### Stability

Stable under normal conditions.

##### Conditions to Avoid

- Heat - High temperatures - Exposure to direct sunlight

##### Materials to Avoid

- Strong oxidizing agents - strong acids - sodium hypochlorite

##### Hazardous Polymerization

Will not occur.



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Kidde 90 Multi-Purpose ABC Dry Chemical (Fire Extinguishing Agent)

---

#### 10. STABILITY AND REACTIVITY

---

##### **Hazardous Decomposition Products**

- oxides of carbon - ammonia – oxides of phosphorus – nitrogen oxides

---

#### 11. TOXICOLOGICAL INFORMATION

---

##### **Acute Toxicity**

Low order of acute toxicity.

##### **Chronic Toxicity/Carcinogenicity**

This product is not expected to cause long term adverse health effects.

Mica and clay 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.

##### **Genotoxicity**

This product is not expected to cause any mutagenic effects.

##### **Reproductive/Developmental Toxicity**

This product is not expected to cause adverse reproductive effects.

---

#### 12. ECOLOGICAL INFORMATION

---

##### **Mobility**

No relevant studies identified.

##### **Persistence/Degradability**

No relevant studies identified.

##### **Bio-accumulation**

No relevant studies identified.

##### **Ecotoxicity**

No relevant studies identified.

---

#### 13. DISPOSAL CONSIDERATIONS

---

Dispose of container in accordance with all applicable local and national regulations. Do not cut, puncture or weld on or near to the container. No harm to the environment is expected from this preparation.

---

#### 14. TRANSPORT INFORMATION

---

**DOT CFR 172.101 Data** Not regulated

**UN Proper Shipping Name** Not regulated

**UN Class** None

**UN Number** None

**UN Packaging Group** None

**NOTE:** For additional HAZMAT shipping information related to shipping pressurized fire extinguishers, refer to Badger Technical Bulletin #123-1201 available for download at [www.badgerfire.com](http://www.badgerfire.com).



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Kidde 90 Multi-Purpose ABC Dry Chemical (Fire Extinguishing Agent)

#### 15. REGULATORY INFORMATION

##### EU Label Information

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments (2001/60/EC and 2006/8/EC)

##### EU Hazard Symbol and Indication of Danger.

This preparation is not classified as dangerous.

##### R phrases

None

##### S phrases

None.

##### US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS

##### TSCA Listing

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

##### EINECS Listing

All ingredients in this product have not been verified for listing on the European Inventory of Existing Commercial Chemical Substances (EINECS) or the European List of New Chemical Substances (ELINCS).

##### DSL/NDSL (Canadian) Listing

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.

##### WHMIS Classification

D2B

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

##### MA Right To Know Law

All components have been checked for inclusion on the Massachusetts Substance List (MSL). Those components present at or above the de minimus concentration include: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) <2% - Ammonium Sulfate (7783-20-2) 1-6%

##### PA Right To Know Law

This product contains the following chemicals found on the Pennsylvania Hazardous Substance List: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) <2% - Ammonium Sulfate (7783-20-2) 1-6%

##### NJ Right To Know Law

This product contains the following chemicals found on the NJ Right To Know Hazardous Substance List: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) <2%

##### 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.

##### SARA Title III Sect. 302 (EHS)

This product does not contain any chemicals subject to SARA Title III Section 302.

##### SARA Title III Sect. 304

This product does not contain any chemicals subject to SARA Title III Section 304.



A UTC Fire & Security Company

## MATERIAL SAFETY DATA SHEET

### Kidde 90 Multi-Purpose ABC Dry Chemical (Fire Extinguishing Agent)

---

#### 15. REGULATORY INFORMATION

---

##### **SARA Title III Sect. 311/312 Categorization**

Immediate (Acute) Health 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.

---

#### 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 Reactivity - 0

HMIS Code for Personal Protection - See Section 8

##### **Abbreviations**

N/A: Denotes no applicable information found or available

CAS#: Chemical Abstracts Service Number

ACGIH: American Conference of Governmental Industrial Hygienists

OSHA: Occupational Safety and Health Administration

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit

NTP: National Toxicology Program

IARC: International Agency for Research on Cancer

R: Risk

S: Safety

**Prepared By:** EnviroNet LLC.

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