1. IDENTIFICATION

Product Name
Universal Ultra AR-AFFF Solution
(Fire Extinguishing Agent, Pressurized and Non-pressurized)

Other Names
Alcohol Resistant Aqueous Film Forming Foam

Recommended use of the chemical and restrictions on use
Identified uses
Fire Extinguishing Agent

Restrictions on use
Do not use on electrically energized equipment. Consult applicable fire protection codes.

Company Identification
Badger Fire Protection
944 Glenwood Station Lane, Suite 303
Charlottesville, VA 22901
USA

Customer Information Number
(434)-964-3200

Emergency Telephone Number
(800) 424-9300
(703) 527-3887 (International)

Issue Date
October 1, 2015

Supersedes Date
April 10, 2015

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

2. HAZARD IDENTIFICATION

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

GHS Classification – Pressurized

Hazard Classification
Gas under pressure – Compressed gas

Label Elements
Hazard Symbols

Signal Word: Warning

Hazard Statements
Contents under pressure; may explode if heated.
2. HAZARD IDENTIFICATION

Precautionary Statements
Prevention
None
Response
None
Storage
Protect from sunlight.
Store in well-ventilated place.
Disposal
None

GHS Classification: Non-pressurized

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

Label Elements
Hazard Symbols
None

Signal Word: None

Hazard Statements
None

Precautionary Statements
Prevention
None
Response
None
Storage
None
Disposal
None

Other Hazards
Possible electrocution hazard if used on electrically energized equipment.

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

Acute oral toxicity <5%
Acute dermal toxicity <5%
Acute inhalation toxicity <5%
Acute aquatic toxicity <5%
3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>&gt;95%</td>
</tr>
<tr>
<td>Synthetic detergent</td>
<td>NA</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

Note: Pressurized product uses nitrogen or compressed air as the expellant.

4. FIRST-AID MEASURES

Description of necessary first-aid measures

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

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

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

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

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

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

5. FIRE-FIGHTING MEASURES

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

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

Special Protective Actions for Fire-Fighters
Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.
SAFETY DATA SHEET
Universal Ultra AR-AFFF Solution
(Fire Extinguishing Agent, Pressurized and Non-pressurized)

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Wear appropriate protective clothing. Prevent skin and eye contact. Remove leaking container to a safe place. Ventilate the area.

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

Methods and materials for containment and cleaning up
Contain and absorb using appropriate inert material. Transfer into suitable containers for recovery or disposal.

7. HANDLING AND STORAGE

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

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure limits are listed below, if they exist.

Synthetic Detergent
None

Appropriate engineering controls
Use with adequate ventilation. If this product is used in a pressurized system, there should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

Individual protection measures
Respiratory Protection
Not normally required. In oxygen deficient atmospheres, use a self contained breathing apparatus, as an air purifying respirator will not provide protection.

Skin Protection
Gloves

Eye/Face Protection
Chemical goggles or safety glasses with side shields.

Body Protection
Normal work wear.
### SAFETY DATA SHEET
Universal Ultra AR-AFFF Solution
(Fire Extinguishing Agent, Pressurized and Non-pressurized)

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

##### Non-Pressurized

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State (Liquid)</td>
<td>Pale yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>7 - 8</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>~1.0</td>
</tr>
<tr>
<td>Boiling Range/Point (°C/F)</td>
<td>~100/212</td>
</tr>
<tr>
<td>Melting Point (°C/F)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash Point (PMCC) (°C/F)</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation Rate (BuAc=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Soluble</td>
</tr>
<tr>
<td>VOC (g/l)</td>
<td>No data available</td>
</tr>
<tr>
<td>VOC (%)</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower explosive limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

##### Expellant - Nitrogen

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State (Compressed gas)</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.075 lb/ft³ @70°F as vapor</td>
</tr>
<tr>
<td>Boiling Range/Point (°C/F)</td>
<td>-196°C/-321 °F</td>
</tr>
<tr>
<td>Melting Point (°C/F)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash Point (PMCC) (°C/F)</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation Rate (BuAc=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>No data available</td>
</tr>
<tr>
<td>VOC (g/l)</td>
<td>None</td>
</tr>
<tr>
<td>VOC (%)</td>
<td>None</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET
Universal Ultra AR-AFFF Solution
(Fire Extinguishing Agent, Pressurized and Non-pressurized)

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower explosive limit</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not flammable</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

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

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

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

Incompatible Materials
Water reactive materials

Hazardous Decomposition Products
Oxides of carbon

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Available data indicates this product is not expected to be acutely toxic.

   Synthetic detergent:
   LD50 Oral rat >5000 mg/kg
   Nitrogen
   Simple asphyxiant

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

Specific Target Organ Toxicity (STOT) – repeat exposure
Available data indicates this product is not expected to cause target organ effects after repeated exposure.

Serious Eye damage/Irritation
Synthetic detergent: A 50% solution was found to be severely irritating to eyes in a rabbit study.

Skin Corrosion/Irritation
Synthetic detergent: A 50% solution was found to be non-irritating to skin a rabbit study.

Respiratory or Skin Sensitization
No data available.
SAFETY DATA SHEET
Universal Ultra AR-AFFF Solution
(Fire Extinguishing Agent, Pressurized and Non-pressurized)

11. TOXICOLOGICAL INFORMATION

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

Germ Cell Mutagenicity
Available data indicates this product is not expected to be mutagenic.

Reproductive Toxicity
Available data indicates this product is not expected to cause reproductive toxicity or birth defects.

Aspiration Hazard
Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Synthetic detergent
LC50 Fish > 1 – 10 mg/l (based on similar substance)
EC0 Microorganisms >100 mg/l (based on similar substance)

Mobility in soil
No relevant studies identified.

Persistence/Degradability
No relevant studies identified.

Bioaccumulative Potential
No relevant studies identified.

Other adverse effects
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Disposal Methods
Dispose of container in accordance with all applicable local and national regulations.

14. TRANSPORT INFORMATION

Safety Data Sheet information is intended to address a specific material and not various forms or states of containment.

Special Precautions for Shipping:
Individuals must be certified as Hazardous Material Shipper for all transportation modes.
Pressurized Fire Extinguishers are considered a hazardous material by the US Department of Transportation and Transport Canada.

DOT CFR 172.101 Data
Fire extinguishers, 2.2, UN1044
UN Proper Shipping Name
Fire extinguishers
UN Class
(2.2)
UN Number
UN1044
UN Packaging Group
Not applicable
14. TRANSPORT INFORMATION

Classification for AIR (IATA) Transportation
Consult current IATA Regulations prior to shipping by air.

Classification for Water Transport IMDG
Consult current IMDG Regulations prior to shipping by water.

When shipping via ground, portable fire extinguishers pressurized to less than 241 psi and of less than 1100 cubic inches in size meet the requirements of “Limited Quantity” as referenced in 49 CFR 173.309 (2010). There is no limited quantity designation for fire extinguishers when shipped by air or water.

This section is believed to be accurate at the time of preparation. It is not intended to be a complete statement or summary of the applicable laws, rules, or hazardous material regulations, and is subject to change. Users have the responsibility to confirm compliance with all laws, rules, and hazardous material regulations in effect at the time of shipping.

15. REGULATORY INFORMATION

United States TSCA Inventory
This product contains an ingredient that has not been verified for listing on the EPA Toxic Substance Control Act Chemical Substance Inventory.

Canada DSL Inventory
This product contains ingredients that are not listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL).

SARA Title III Sect. 311/312 Categorization: Pressurized Pressure hazard
SARA Title III Sect. 311/312 Categorization: Non-pressurized None

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

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 1
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards - None

HMIS Ratings
HMIS Code for Health - 1
HMIS Code for Flammability - 0
HMIS Code for Physical Hazard - 0
HMIS Code for Personal Protection - See Section 8
*Chronic
16. OTHER INFORMATION

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

Revision Date: October 1, 2015
Replaces: April 10, 2015
Changes made: Update to Section 14

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

Prepared By: EnviroNet LLC.

The information and recommendations presented in this SDS are based on sources believed to be accurate. Badger Fire Protection assumes no liability for the accuracy or completeness of this information. It is the user's responsibility to determine the suitability of the material for their particular purposes. In particular, we make NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, with respect to such information, and we assume no liability resulting from its use. Users should ensure that any use or disposal of the material is in accordance with applicable Federal, State, and local laws and regulations.
1. IDENTIFICATION

Product Name
Universal Ultra AR-AFFF Concentrate
(Fire Extinguishing Agent)

Other Names
Alcohol Resistant Aqueous Film Forming Foam

Recommended use of the chemical and restrictions on use

Identified uses
Fire Extinguishing Agent

Restrictions on use
Do not use on electrically energized equipment. Consult applicable fire protection codes.

Company Identification
Badger Fire Protection
944 Glenwood Station Lane, Suite 303
Charlottesville, VA 22901
USA

Customer Information Number
(434)-964-3200

Emergency Telephone Number
(800) 424-9300
(703) 527-3887 (International)

Issue Date
October 1, 2015

Supersedes Date
April 10, 2015

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

2. HAZARD IDENTIFICATION

Hazard Classification
Serious eye damage/eye irritation: Category 2A

Label Elements

Hazard Symbols

Signal Word: Warning

Hazard Statements
Causes serious eye irritation.

Precautionary Statements

Prevention
Wash hands thoroughly after handling. Wear eye protection/face protection.
2. HAZARD IDENTIFICATION

Response
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to
do. Continue rinsing.
If eye irritation persists, get medical advice/attention.
Storage
None
Disposal
None

Other Hazards
Possible electrocution hazard if used on electrically energized equipment.

Specific Concentration Limits
The values listed below represent the percentages of ingredients of unknown toxicity.
Acute oral toxicity < 10%
Acute dermal toxicity < 10%
Acute inhalation toxicity < 10%
Acute aquatic toxicity < 10%

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>90 - 99%</td>
</tr>
<tr>
<td>Synthetic detergent</td>
<td>NA</td>
<td>1 - 5%</td>
</tr>
<tr>
<td>(2-Methoxymethylethoxy)Propanol</td>
<td>34590-94-8</td>
<td>1 - 5%</td>
</tr>
</tbody>
</table>

4. FIRST-AID MEASURES

Description of necessary first-aid measures

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

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

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

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

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

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

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a fire. Use extinguishing agent appropriate to other materials involved.

Specific hazards arising from the chemical
None known.

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Wear appropriate protective clothing. Prevent skin and eye contact.

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

Methods and materials for containment and cleaning up
Contain and absorb using appropriate inert material and transfer into suitable containers for recovery or disposal.

7. HANDLING AND STORAGE

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

Conditions for safe storage
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

Control parameters
Exposure limits are listed below, if they exist.
8. EXPOSURE CONTROLS/PERSOAL PROTECTION

(2-Methoxymethylethoxy)Propanol
ACGIH: TLV 100 ppm 8h TWA. 150 ppm STEL.
Skin Designation: air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required
OSHA: PEL 100 ppm (600 mg/m³) Limit applies to skin.

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

Individual protection measures
Respiratory Protection
Respiratory protection not normally required.
Skin Protection
Gloves
Eye/Face Protection
Chemical goggles or safety glasses with side shields.
Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Viscous liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>8.5</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.015 @ 25°C</td>
</tr>
<tr>
<td>Boiling Range/Point (°C/F)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting Point (°C/F)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash Point (PMCC) (°C/F)</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation Rate (BuAc=1)</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Soluble</td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>VOC (g/l)</td>
<td>None</td>
</tr>
<tr>
<td>VOC (%)</td>
<td>None</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower explosive limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

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

Incompatible Materials
Water reactive materials

Hazardous Decomposition Products
Oxides of carbon

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Available data indicates this product is not expected to be acutely toxic.
Synthetic detergent:
LD50 Oral rat >5000 mg/kg

Specific Target Organ Toxicity (STOT) – single exposure
Available data indicates this product is not expected to cause target organ effects after a single exposure.

Specific Target Organ Toxicity (STOT) – repeat exposure
Available data indicates this product is not expected to cause target organ effects after repeated exposure.

Serious Eye damage/Irritation
Synthetic detergent: A 50% solution was found to be severely irritating to eyes in a rabbit study.

Skin Corrosion/Irritation
Synthetic detergent: A 50% solution was found to be non-irritating to skin a rabbit study.

Respiratory or Skin Sensitization
No data available.

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

Germ Cell Mutagenicity
Available data indicates this product is not expected to be mutagenic.
SAFETY DATA SHEET
Universal Ultra AR-AFFF Concentrate
(Fire Extinguishing Agent)

11. **TOXICOLOGICAL INFORMATION**

   Reproductive Toxicity
   Available data indicates this product is not expected to cause reproductive toxicity or birth defects.

   Aspiration Hazard
   Not an aspiration hazard.

12. **ECOLOGICAL INFORMATION**

   Ecotoxicity
   Synthetic detergent
   LC50 Fish > 1 – 10 mg/l (based on similar substance)
   EC0 Microorganisms >100 mg/l (based on similar substance)

   Mobility in soil
   No relevant studies identified.

   Persistence/Degradability
   No relevant studies identified.

   Bioaccumulative Potential
   No relevant studies identified.

   Other adverse effects
   No relevant studies identified.

13. **DISPOSAL CONSIDERATIONS**

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

14. **TRANSPORT INFORMATION**

   Safety Data Sheet information is intended to address a specific material and not various forms or states of containment.

   Special Precautions for Shipping:
   Individuals must be certified as Hazardous Material Shipper for all transportation modes.


   DOT CFR 172.101 Data
   UN Proper Shipping Name  Not Regulated
   UN Class  None.
   UN Number  None.
   UN Packaging Group  None.
14. TRANSPORT INFORMATION

Classification for AIR
Classification for Water
Transport IMDG
Consult current IATA Regulations prior to shipping by air.
Consult current IMDG Regulations prior to shipping by water.
This section is believed to be accurate at the time of preparation. It is not intended to be a complete statement or summary of the applicable laws, rules, or hazardous material regulations, and is subject to change. Users have the responsibility to confirm compliance with all laws, rules, and hazardous material regulations in effect at the time of shipping.

15. REGULATORY INFORMATION

United States TSCA Inventory
This product contains an ingredient that has not been verified for listing on the EPA Toxic Substance Control Act Chemical Substance Inventory.

Canada DSL Inventory
This product contains ingredients that are not listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL).

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 Physical Hazard - 0
HMIS Code for Personal Protection - See Section 8
*Chronic
16. OTHER INFORMATION

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

Revision Date: October 1, 2015
Replaces: April 10, 2015
Changes made: Update to Section 14.

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

Prepared By: EnviroNet LLC.

The information and recommendations presented in this SDS are based on sources believed to be accurate. Badger Fire Protection assumes no liability for the accuracy or completeness of this information. It is the user’s responsibility to determine the suitability of the material for their particular purposes. In particular, we make NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, with respect to such information, and we assume no liability resulting from its use. Users should ensure that any use or disposal of the material is in accordance with applicable Federal, State, and local laws and regulations.
1. Identification

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Badger Multi-Purpose ABC Dry Chemical (Fire Extinguishing Agent, Pressurized and Non-pressurized)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Names</td>
<td>90% MAP, Ammonium Phosphate, Monoammonium Phosphate, Premium ABC</td>
</tr>
<tr>
<td>Recommended use of the chemical and restrictions on use</td>
<td>Fire Extinguishing Agent</td>
</tr>
<tr>
<td>Identified uses</td>
<td>Consult applicable fire protection codes</td>
</tr>
<tr>
<td>Restrictions on use</td>
<td>Badger Fire Protection</td>
</tr>
<tr>
<td>Company Identification</td>
<td>944 Glenwood Station Lane, Suite 303</td>
</tr>
<tr>
<td></td>
<td>Charlottesville, VA 22901 USA</td>
</tr>
<tr>
<td>Customer Information Number</td>
<td>(434)-964-3200</td>
</tr>
<tr>
<td>Emergency Telephone Number</td>
<td>(800) 424-9300</td>
</tr>
<tr>
<td>CHEMTREC Number</td>
<td>(703) 527-3887 (International)</td>
</tr>
<tr>
<td>Issue Date</td>
<td>October 1, 2015</td>
</tr>
<tr>
<td>Supersedes Date</td>
<td>April 10, 2015</td>
</tr>
</tbody>
</table>

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

2. Hazard Identification

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

GHS Classification – Pressurized

Hazard Classification
Gas under pressure – Compressed gas

Label Elements
Hazard Symbols

Signal Word: Warning

Hazard Statements
Contents under pressure; may explode if heated.
2. HAZARD IDENTIFICATION

Precautionary Statements
Prevention
None
Response
None
Storage
Protect from sunlight.
Store in well-ventilated place.
Disposal
None

GHS Classification: Non - pressurized

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

Label Elements
Hazard Symbols
None

Signal Word: None

Hazard Statements
None

Precautionary Statements
Prevention
None
Response
None
Storage
None
Disposal
None

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

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

Acute oral toxicity < 10%
Acute dermal toxicity < 10%
Acute inhalation toxicity < 10%
Acute aquatic toxicity < 10%
SAFETY DATA SHEET
Badger Multi-Purpose ABC Dry Chemical
(Fire Extinguishing Agent, Pressurized and Non-pressurized)

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monoammonium Phosphate</td>
<td>7722-76-1</td>
<td>85 - 95%</td>
</tr>
<tr>
<td>Mica</td>
<td>12001-26-2</td>
<td>&lt; 5%</td>
</tr>
<tr>
<td>Clay</td>
<td>1332-58-7</td>
<td>&lt; 5%</td>
</tr>
<tr>
<td>Amorphous Silica</td>
<td>7631-86-9</td>
<td>&lt; 5%</td>
</tr>
<tr>
<td>Dye</td>
<td>NA</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

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

4. FIRST- AID MEASURES

**Description of necessary first-aid measures**

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

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

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

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

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

**Indication of immediate medical attention and special treatment needed**

**Notes to Physicians**
Treat symptomatically.

5. FIRE - FIGHTING MEASURES

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

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

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

Personal precautions, protective equipment and emergency procedures
Wear appropriate protective clothing. Prevent skin and eye contact. Remove leaking container to a safe place. Ventilate the area.

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

Methods and materials for containment and cleaning up
Sweep up or vacuum and transfer into suitable containers for recovery or disposal.

7. HANDLING AND STORAGE

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

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure limits are listed below, if they exist.

Mica
ACGIH TLV: 3 mg/m\(^3\) TWA, measured as respirable fraction of the aerosol.
OSHA PEL: 20 mppcf, <1% crystalline silica

Clay as Kaolin, Respirable Fraction
ACGIH TLV: 2 mg/m\(^3\) TWA
OSHA PEL: 15 mg/m\(^3\) TWA, total dust
5 mg/m\(^3\) TWA, respirable fraction

Nuisance Dust Limit
OSHA PEL: 50 mppcf or 15 mg/m\(^3\) TWA, total dust
15 mppcf or 5 mg/m\(^3\) TWA, respirable fraction

Appropriate engineering controls
Use with adequate ventilation. If this product is used in a pressurized system, there should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

Individual protection measures
Respiratory Protection
Not normally required. Use dust mask where dustiness is prevalent, or TLV is exceeded. In oxygen deficient atmospheres, use a self contained breathing apparatus, as an air purifying respirator will not provide protection.
SAFETY DATA SHEET
Badger Multi-Purpose ABC Dry Chemical
(Fire Extinguishing Agent, Pressurized and Non-pressurized)

8. EXPOSURE CONTROLS/PERSOAL PROTECTION

Skin Protection
Gloves

Eye/Face Protection
Chemical goggles or safety glasses with side shields.

Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Non-Pressurized

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Solid (powder)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Pale Yellow</td>
</tr>
</tbody>
</table>

| Odor           | Odorless       |
| Odor Threshold | No data available |
| pH             | Not applicable |
| Specific Gravity | No data available |
| Boiling Range/Point (°C/F) | Not applicable |
| Melting Point (°C/F) | No data available |
| Flash Point (PMCC) (°C/F) | Not flammable |
| Vapor Pressure | No data available |
| Evaporation Rate (BuAc=1) | No data available |
| Solubility in Water | No data available |
| Vapor Density (Air = 1) | Not applicable |
| VOC (g/l) | None |
| VOC (%) | None |
| Partition coefficient (n-octanol/water) | No data available |
| Viscosity | No data available |
| Auto-ignition Temperature | No data available |
| Decomposition Temperature | No data available |
| Upper explosive limit | No data available |
| Lower explosive limit | No data available |
| Flammability (solid, gas) | No data available |

Expellant

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Compressed gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
</tbody>
</table>

| Odor           | None |
| Odor Threshold | No data available |
| pH             | Not applicable |
| Specific Gravity | 0.075 lb/ft³ @70°F as vapor (Nitrogen) |
| Boiling Range/Point (°C/F) | 0.1144 lb/ft³ (Carbon dioxide gas density) |
| Melting Point (°C/F) | -196°C/-321 °F(Nitrogen) |
| Flash Point (PMCC) (°C/F) | -78.5 °C/-109.3°F(Carbon Dioxide) |
| Vapor Pressure | 838 psig @70°F and 1 atmosphere(Carbon Dioxide) |
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaporation Rate (BuAc=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>VOC (g/l)</td>
<td>None</td>
</tr>
<tr>
<td>VOC (%)</td>
<td>None</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Lower explosive limit</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not flammable</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

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

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

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

Incompatible Materials
Strong oxidizing agents - strong acids - sodium hypochlorite

Hazardous Decomposition Products
Oxides of carbon - ammonia - oxides of phosphorus - nitrogen oxides

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Monoammonium Phosphate:
Oral LD50 (Rat) 5750 mg/kg
Dermal LD50 (Rabbit) >5000mg/kg
Inhalation LC50 (Rat) 5.1mg/l

Mica:
Oral LD50 (Rat) >2000 mg/kg

Amorphous Silica:
Oral LD50 (Rat) >5000 mg/kg
Dermal LD50 (Rabbit) >2000mg/kg

Clay:
Oral LD50 (Rat) >5000 mg/kg
Dermal LD50 (Rabbit) >5000mg/kg
11. TOXICOLOGICAL INFORMATION

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

Specific Target Organ Toxicity (STOT) – single exposure
Monoammonium Phosphate: Available data indicates this component is not expected to cause target organ effects after a single exposure.
Nitrogen: Exposure to nitrogen gas at high concentrations can cause suffocation by reducing oxygen available for breathing. Breathing very high concentrations can cause dizziness, shortness of breath, unconsciousness or asphyxiation.

Specific Target Organ Toxicity (STOT) – repeat exposure
Monoammonium Phosphate: Available data indicates this component is not expected to cause target organ effects after repeat exposure.

Serious Eye damage/Irritation
Monoammonium Phosphate: Not irritating (rabbit)
Mica: Not irritating (rabbit)

Skin Corrosion/Irritation
Monoammonium Phosphate: Not irritating in rabbit test study
Mica: Not irritating (rabbit)

Respiratory or Skin Sensitization
Monoammonium Phosphate: Not skin sensitizing based on test (Mouse local lymphnode assay (LLNA)) on an analogous compound.

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

Germ Cell Mutagenicity
Monoammonium Phosphate: Not mutagenic in the mouse lymphoma cells in mammalian cell gene mutation assay

Reproductive Toxicity
Monoammonium Phosphate: Available data indicates this component is not expected to cause reproductive toxicity or birth defects.

Aspiration Hazard
Not an aspiration hazard.
12. ECOLOGICAL INFORMATION

Ecotoxicity
Monoammonium Phosphate:
LC50 rainbow trout >100 mg/l 96h
LC50 water flea 1790 mg/l 72h (similar substance)

Mobility in soil
No relevant studies identified.

Persistence/Degradability
No relevant studies identified.

Bioaccumulative Potential
No relevant studies identified.

Other adverse effects
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Disposal Methods
Dispose of container in accordance with all applicable local and national regulations.

14. TRANSPORT INFORMATION

Safety Data Sheet information is intended to address a specific material and not various forms or states of containment.

Special Precautions for Shipping:
Individuals must be certified as Hazardous Material Shipper for all transportation modes. Pressurized Fire Extinguishers are considered a hazardous material by the US Department of Transportation and Transport Canada.

DOT CFR 172.101 Data
Fire extinguishers, 2.2, UN1044
UN Proper Shipping Name
Fire extinguishers
UN Class
(2.2)
UN Number
UN1044
UN Packaging Group
Not applicable
Classification for AIR
Consult current IATA Regulations prior to shipping by air.
Classification for Water
Consult current IMDG Regulations prior to shipping by water.

When shipping via ground, portable fire extinguishers pressurized to less than 241 psi and of less than 1100 cubic inches in size meet the requirements of “Limited Quantity” as referenced in 49 CFR 173.309 (2010). There is no limited quantity designation for fire extinguishers when shipped by air or water.

This section is believed to be accurate at the time of preparation. It is not intended to be a complete statement or summary of the applicable laws, rules, or hazardous material regulations, and is subject to change. Users have the responsibility to confirm compliance with all laws, rules, and hazardous material regulations in effect at the time of shipping.
SAFETY DATA SHEET
Badger Multi-Purpose ABC Dry Chemical
(Fire Extinguishing Agent, Pressurized and Non-pressurized)

15. REGULATORY INFORMATION

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

Canada DSL Inventory
All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

SARA Title III Sect. 311/312 Categorization: Pressurized
Pressure hazard
SARA Title III Sect. 311/312 Categorization: Non-pressurized
None

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

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 1
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards - None

HMIS Ratings
HMIS Code for Health - 1
HMIS Code for Flammability - 0
HMIS Code for Physical Hazard - 0
HMIS Code for Personal Protection - See Section 8
*Chronic

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

Revision Date: October 1, 2015
Replaces: April 10, 2015
Changes made: Update to Section 14.
16. OTHER INFORMATION

Information Source and References
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Prepared By: EnviroNet LLC.

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SAFETY DATA SHEET
Commercial ABC Dry Chemical
(Fire Extinguishing Agent, Pressurized and Non-pressurized)

1. IDENTIFICATION

Product Name  Commercial ABC Dry Chemical (Fire Extinguishing Agent, Pressurized and Non-pressurized)

Other Names  Multi-Purpose, Ammonium Phosphate, Monoammonium Phosphate

Recommended use of the chemical and restrictions on use

Identified uses  Fire Extinguishing Agent

Restrictions on use  Consult applicable fire protection codes

Company Identification  Badger Fire Protection
944 Glenwood Station Lane, Suite 303
Charlottesville, VA  22901
USA

Customer Information Number  (434)-964-3200

Emergency Telephone Number  (800) 424-9300
(703) 527-3887 (International)

Issue Date  October 1, 2015

Supersedes Date  April 10, 2015

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

2. HAZARD IDENTIFICATION

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

GHS Classification – Pressurized

Hazard Classification  Gas under pressure – Compressed gas

Label Elements  Hazard Symbols

Signal Word: Warning

Hazard Statements  Contents under pressure; may explode if heated.
2. HAZARD IDENTIFICATION

Precautionary Statements
Prevention
None
Response
None
Storage
Protect from sunlight.
Sore in well-ventilated place.
Disposal
None

GHS Classification: Non - pressurized

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

Label Elements
Hazard Symbols
None

Signal Word: None

Hazard Statements
None

Precautionary Statements
Prevention
None
Response
None
Storage
None
Disposal
None

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

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

Acute oral toxicity < 10%
Acute dermal toxicity < 10%
Acute inhalation toxicity < 10%
Acute aquatic toxicity < 10%
3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monoammonium Phosphate</td>
<td>7722-76-1</td>
<td>55 - 65%</td>
</tr>
<tr>
<td>Ammonium Sulfate</td>
<td>7783-20-2</td>
<td>30 - 40%</td>
</tr>
<tr>
<td>Mica</td>
<td>12001-26-2</td>
<td>&lt; 5%</td>
</tr>
<tr>
<td>Clay</td>
<td>1332-58-7</td>
<td>&lt; 5%</td>
</tr>
<tr>
<td>Amorphous Silica</td>
<td>7631-86-9</td>
<td>&lt; 5%</td>
</tr>
<tr>
<td>Dye</td>
<td>NA</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

Note: Pressurized product uses nitrogen or compressed air as the expellant.

4. FIRST-AID MEASURES

Description of necessary first-aid measures

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

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

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

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

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

Indication of immediate medical attention and special treatment needed

Notes to Physicians
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

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

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

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

   **Personal precautions, protective equipment and emergency procedures**
   Wear appropriate protective clothing. Prevent skin and eye contact. Remove leaking container to a safe place. Ventilate the area.

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

   **Methods and materials for containment and cleaning up**
   Sweep up or vacuum and transfer into suitable containers for recovery or disposal.

7. **HANDLING AND STORAGE**

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

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

8. **EXPOSURE CONTROLS/PERSONAL PROTECTION**

   **Control parameters**
   Exposure limits are listed below, if they exist.

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

   **Clay as Kaolin, Respirable Fraction**
   ACGIH TLV: 2 mg/m$^3$ TWA
   OSHA PEL: 15 mg/m$^3$ TWA, total dust
   5 mg/m$^3$ TWA, respirable fraction

   **Nuisance Dust Limit**
   OSHA PEL: 50 mppcf or 15 mg/m$^3$ TWA, total dust
   15 mppcf or 5 mg/m$^3$ TWA, respirable fraction

   **Appropriate engineering controls**
   Use with adequate ventilation. If this product is used in a pressurized system, there should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

   **Individual protection measures**
   **Respiratory Protection**
   Not normally required. Use dust mask where dustiness is prevalent, or TLV is exceeded. In oxygen deficient atmospheres, use a self contained breathing apparatus, as an air purifying respirator will not provide protection.
SAFETY DATA SHEET
Commercial ABC Dry Chemical
(Fire Extinguishing Agent, Pressurized and Non-pressurized)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Skin Protection
Gloves
Eye/face Protection
Chemical goggles or safety glasses with side shields.
Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Non-Pressurized
Appearance

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid (powder)</td>
<td>Pale Yellow</td>
</tr>
</tbody>
</table>

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

Expellant - Nitrogen
Appearance

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressed gas</td>
<td>Colorless</td>
</tr>
</tbody>
</table>

Odor
None
Odor Threshold
No data available
pH
Not applicable
Specific Gravity
0.075 lb/ft³ @70°F as vapor
Boiling Range/Point (°C/F)
-196°C/-321°F
Melting Point (°C/F)
No data available
Flash Point (PMCC) (°C/F)
Not flammable
Vapor Pressure
No data available
Evaporation Rate (BuAc=1)
No data available
Solubility in Water
No data available
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>VOC (g/l)</td>
<td>None</td>
</tr>
<tr>
<td>VOC (%)</td>
<td>None</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Lower explosive limit</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not flammable</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

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

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

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

Incompatible Materials
Strong oxidizing agents - strong acids - sodium hypochlorite

Hazardous Decomposition Products
Oxides of carbon - ammonia - oxides of phosphorus - nitrogen oxides

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Monoammonium Phosphate:
Oral LD50 (Rat) 5750 mg/kg
Dermal LD50 (Rabbit) >5000mg/kg
Inhalation LC50 (Rat) 5.1mg/l
Ammonium Sulfate:
Oral LD50 (Rat) 4250 mg/kg
Dermal LD50 (Rabbit) >2000mg/kg
Mica:
Oral LD50 (Rat) >2000 mg/kg
Amorphous Silica:
Oral LD50 (Rat) >5000 mg/kg
Dermal LD50 (Rabbit) >2000mg/kg
11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Clay
Oral LD50 (Rat) >5000 mg/kg
Dermal LD50 (Rabbit) >5000mg/kg
Nitrogen
Simple asphyxiant

Specific Target Organ Toxicity (STOT) – single exposure
Monoammonium Phosphate: Available data indicates this component is not expected to cause target organ effects after a single exposure.
Ammonium Sulfate: Available data indicates this component is not expected to cause target organ effects after a single exposure.
Nitrogen: Exposure to nitrogen gas at high concentrations can cause suffocation by reducing oxygen available for breathing. Breathing very high concentrations can cause dizziness, shortness of breath, unconsciousness or asphyxiation.

Specific Target Organ Toxicity (STOT) – repeat exposure
Monoammonium Phosphate: Available data indicates this component is not expected to cause target organ effects after repeat exposure.
Ammonium Sulfate: Available data indicates this component is not expected to cause target organ effects after repeat exposure.

Serious Eye damage/Irritation
Monoammonium Phosphate: Not irritating (rabbit)
Ammonium Sulfate: Not irritating (rabbit)
Mica: Not irritating (rabbit)

Skin Corrosion/Irritation
Monoammonium Phosphate: Not irritating in rabbit test study
Ammonium Sulfate: Not irritating (rabbit)
Mica: Not irritating (rabbit)

Respiratory or Skin Sensitization
Monoammonium Phosphate: Not skin sensitizing based on test (Mouse local lymphnode assay (LLNA)) on an analogous compound
Ammonium Sulfate: Not sensitizing in Guinea pig maximisation test

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

Germ Cell Mutagenicity
Monoammonium Phosphate: Not mutagenic in the mouse lymphoma cells in mammalian cell gene mutation assay
Ammonium Sulfate: Negative results in Ames Test, in vitro mammalian chromosome aberration test, and mammalian cell gene mutation assay.
11. TOXICOLOGICAL INFORMATION

Reproductive Toxicity
Monoammonium Phosphate: Available data indicates this component is not expected to cause reproductive toxicity or birth defects.
Ammonium Sulfate: Available data indicates this component is not expected to cause reproductive toxicity or birth defects.

Aspiration Hazard
Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Monoammonium Phosphate: LC50 rainbow trout >100 mg/l 96h
LC50 water flea 1790 mg/l 72h (similar substance)

Mobility in soil
No relevant studies identified.

Persistence/Degradability
No relevant studies identified.

Bioaccumulative Potential
No relevant studies identified.

Other adverse effects
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Disposal Methods
Dispose of container in accordance with all applicable local and national regulations.

14. TRANSPORT INFORMATION

Safety Data Sheet information is intended to address a specific material and not various forms or states of containment.

Special Precautions for Shipping:
Individuals must be certified as Hazardous Material Shipper for all transportation modes. Pressurized Fire Extinguishers are considered a hazardous material by the US Department of Transportation and Transport Canada.

DOT CFR 172.101 Data
UN Proper Shipping Name Fire extinguishers
UN Class (2.2)
UN Number UN1044
UN Packaging Group Not applicable
Classification for AIR Consult current IATA Regulations prior to shipping by air.
Transportation (IATA)
**SAFETY DATA SHEET**
Commercial ABC Dry Chemical
(Fire Extinguishing Agent, Pressurized and Non-pressurized)

### 14. TRANSPORT INFORMATION

**Classification for Water Transport IMDG**

Consult current IMDG Regulations prior to shipping by water.

When shipping via ground, portable fire extinguishers pressurized to less than 241 psi and of less than 1100 cubic inches in size meet the requirements of “Limited Quantity” as referenced in 49 CFR 173.309 (2010). There is no limited quantity designation for fire extinguishers when shipped by air or water.

This section is believed to be accurate at the time of preparation. It is not intended to be a complete statement or summary of the applicable laws, rules, or hazardous material regulations, and is subject to change. Users have the responsibility to confirm compliance with all laws, rules, and hazardous material regulations in effect at the time of shipping.

### 15. REGULATORY INFORMATION

**United States TSCA Inventory**

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

**Canada DSL Inventory**

All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

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

Pressure hazard

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

None

**SARA Title III Sect. 313**

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

### 16. OTHER INFORMATION

**NFPA Ratings**

NFPA Code for Health - 1
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards - None

**HMIS Ratings**

HMIS Code for Health - 1
HMIS Code for Flammability - 0
HMIS Code for Physical Hazard - 0
HMIS Code for Personal Protection - See Section 8

*Chronic
SAFETY DATA SHEET
Commercial ABC Dry Chemical
(Fire Extinguishing Agent, Pressurized and Non-pressurized)

16. OTHER INFORMATION

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

Revision Date: October 1, 2015
Replaces: April 10, 2015
Changes made: Update to Section 14.

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

Prepared By: EnviroNet LLC.

The information and recommendations presented in this SDS are based on sources believed to be accurate. Badger Fire Protection assumes no liability for the accuracy or completeness of this information. It is the user's responsibility to determine the suitability of the material for their particular purposes. In particular, we make NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, with respect to such information, and we assume no liability resulting from its use. Users should ensure that any use or disposal of the material is in accordance with applicable Federal, State, and local laws and regulations.
1. **IDENTIFICATION**

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Regular Dry Chemical (Fire Extinguishing Agent – Pressurized and Non-pressurized)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Names</td>
<td>BC, SDC, Sodium Bicarbonate</td>
</tr>
</tbody>
</table>

**Recommended use of the chemical and restrictions on use**

- **Identified uses**: Fire Extinguishing Agent
- **Restrictions on use**: Consult applicable fire protection codes

**Company Identification**

Badger Fire Protection
944 Glenwood Station Lane, Suite 303
Charlottesville, VA  22901
USA

**Customer Information Number**
(434)-964-3200

**Emergency Telephone Number**
(800) 424-9300
(703) 527-3887 (International)

**Issue Date**
October 1, 2015

**Supersedes Date**
April 10, 2015

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

2. **HAZARD IDENTIFICATION**

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

**GHS Classification – Pressurized**

**Hazard Classification**
Gas under pressure – Compressed gas

**Label Elements**

**Hazard Symbols**

![Warning Symbol]

**Signal Word: Warning**

**Hazard Statements**
Contents under pressure; may explode if heated.
2. HAZARD IDENTIFICATION

Precautionary Statements
Prevention
None
Response
None
Storage
Protect from sunlight.
Store in well-ventilated place.
Disposal
None

GHS Classification: Non-pressurized

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

Label Elements
Hazard Symbols
None

Signal Word: None

Hazard Statements
None

Precautionary Statements
Prevention
None
Response
None
Storage
None
Disposal
None

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

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

Acute oral toxicity < 10%
Acute dermal toxicity < 10%
Acute inhalation toxicity < 10%
Acute aquatic toxicity < 10%
3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: BC, SDC, Sodium Bicarbonate
This product is a mixture.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Bicarbonate</td>
<td>144-55-8</td>
<td>75 - 85%</td>
</tr>
<tr>
<td>Calcium Carbonate</td>
<td>471-34-1</td>
<td>10 - 20%</td>
</tr>
<tr>
<td>Mica</td>
<td>12001-26-2</td>
<td>1 - 5%</td>
</tr>
<tr>
<td>Clay</td>
<td>1332-58-7</td>
<td>&lt; 2%</td>
</tr>
<tr>
<td>Amorphous Silica</td>
<td>7631-86-9</td>
<td>&lt; 2%</td>
</tr>
</tbody>
</table>

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

4. FIRST-AID MEASURES

Description of necessary first-aid measures

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

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

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

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

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

Indication of immediate medical attention and special treatment needed

Notes to Physicians
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

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

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

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

Personal precautions, protective equipment and emergency procedures
Wear appropriate protective clothing. Prevent skin and eye contact. Remove leaking cylinder to a safe place. Ventilate the area.

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

Methods and materials for containment and cleaning up
Sweep up or vacuum and transfer into suitable containers for recovery or disposal.

7. HANDLING AND STORAGE

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

Conditions for safe 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

Control parameters
Exposure limits are listed below, if they exist.

Mica
ACGIH TLV: 3 mg/m³ TWA, measured as respirable fraction of the aerosol.
OSHA PEL: 20 mppcf, <1% crystalline silica

Calcium Carbonate
OSHA PEL: 15 mg/m³ TWA, total dust
  5 mg/m³ TWA, respirable fraction

Clay as Kaolin, Respirable Fraction
ACGIH TLV: 2 mg/m³ TWA
OSHA PEL: 15 mg/m³ TWA, total dust
  5 mg/m³ TWA, respirable fraction

Nuisance Dust Limit
OSHA PEL: 50 mppcf or 15 mg/m³ TWA, total dust
  15 mppcf or 5 mg/m³ TWA, respirable fraction

Appropriate engineering controls
Use with adequate ventilation. If this product is used in a pressurized system, there should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Non- Pressurized
Appearance

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Solid (powder)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>White</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>Ca. 2.2</td>
</tr>
<tr>
<td>Boiling Range/Point (°C/F)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Melting Point (°C/F)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash Point (PMCC) (°C/F)</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation Rate (BuAc=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>16.4g/100g</td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>VOC (g/l)</td>
<td>None</td>
</tr>
<tr>
<td>VOC (%)</td>
<td>None</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosive limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
</tbody>
</table>

Expellant
Appearance

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Compressed gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.075 lb/ft³ @70°F as vapor (Nitrogen)</td>
</tr>
<tr>
<td></td>
<td>0.1144 lb/ft³ (Carbon dioxide gas density)</td>
</tr>
</tbody>
</table>
9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Range/Point (°C/F)  -196°C/-321 °F (Nitrogen)  -78.5°C /-109.3°F (Carbon Dioxide)
Melting Point (°C/F)  No data available
Flash Point (PMCC) (°C/F)  Not flammable
Vapor Pressure  838 psig @70°F and 1 atmosphere (Carbon Dioxide)
Evaporation Rate (BuAc=1)  No data available
Solubility in Water  No data available
Vapor Density (Air = 1)  Not applicable
VOC (g/l)  None
VOC (%)  None
Partition coefficient (n-octanol/water)  No data available
Viscosity  Not applicable
Auto-ignition Temperature  No data available
Decomposition Temperature  No data available
Upper explosive limit  Not explosive
Lower explosive limit  Not explosive
Flammability (solid, gas)  Not flammable

10. STABILITY AND REACTIVITY

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

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

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

Incompatible Materials
Strong oxidizing agents - strong acids

Hazardous Decomposition Products
Oxides of carbon

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Sodium Bicarbonate:
Oral LD50 (Rat) >4000 mg/kg
Inhalation LC50(rat) >4.74 mg/l
Calcium Carbonate:
Oral LD50 (Rat) >2000 mg/kg
Dermal LD50 (Rabbit) >2000mg/kg
Inhalation LC50(rat) >3.0mg/l
11. TOXICOLOGICAL INFORMATION

Mica:
Oral LD50 (Rat) >2000 mg/kg
Amorphous Silica:
Oral LD50 (Rat) >5000 mg/kg
Dermal LD50 (Rabbit) >2000mg/kg
Clay:
Oral LD50 (Rat) >5000 mg/kg
Dermal LD50 (Rabbit) >5000mg/kg
Nitrogen
Simple asphyxiant
Carbon Dioxide
Simple asphyxiant
LCLo (inhalation in humans): 90,000ppm/ 5 minutes.

Specific Target Organ Toxicity (STOT) – single exposure
Sodium Bicarbonate: Available data indicates this component is not expected to cause target organ effects after a single exposure.
Calcium Carbonate: Available data indicates this component is not expected to cause target organ effects after a single exposure.
Nitrogen: Exposure to nitrogen gas at high concentrations can cause suffocation by reducing oxygen available for breathing. Breathing very high concentrations can cause dizziness, shortness of breath, unconsciousness or asphyxiation.

Specific Target Organ Toxicity (STOT) – repeat exposure
Sodium Bicarbonate: Available data indicates this component is not expected to cause target organ effects after repeat exposure.
Calcium Carbonate: Available data indicates this component is not expected to cause target organ effects after repeat exposure.

Serious Eye damage/Irritation
Sodium Bicarbonate: Slightly irritating (rabbit)
Calcium Carbonate: Not irritating (rabbit)
Mica: Not irritating (rabbit)

Skin Corrosion/Irritation
Sodium Bicarbonate: Slightly irritating (rabbit)
Calcium Carbonate: Not irritating (rabbit)
Mica: Not irritating (rabbit)

Respiratory or Skin Sensitization
Calcium Carbonate: Non-sensitizing to skin in Mouse local lymph node assay.

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

Germ Cell Mutagenicity
Sodium Bicarbonate: Negative test results in animal studies.
Calcium Carbonate: Negative results in the Mammalian Cell Gene Mutation Assay with and without metabolic activation, Ames test, and In vitro Mammalian Chromosome Aberration Test.
11. TOXICOLOGICAL INFORMATION

Reproductive Toxicity
Sodium Bicarbonate: Available data indicates this component is not expected to cause reproductive toxicity or birth defects.
Calcium Carbonate: Available data indicates this component is not expected to cause reproductive toxicity or birth defects.

Aspiration Hazard
Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Sodium Bicarbonate:
LC50 Lepomis macrochirus 7100 mg/l 96h
EC50 Daphnia magna 4100 mg/l 48h

Mobility in soil
Nitrogen occurs naturally in the atmosphere

Persistence/Degradability
Nitrogen occurs naturally in the atmosphere.

Bioaccumulative Potential
Nitrogen occurs naturally in the atmosphere.

Other adverse effects
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORT INFORMATION

Safety Data Sheet information is intended to address a specific material and not various forms or states of containment.

Special Precautions for Shipping:
Individuals must be certified as Hazardous Material Shipper for all transportation modes. Pressurized Fire Extinguishers are considered a hazardous material by the US Department of Transportation and Transport Canada.

DOT CFR 172.101 Data
Fire extinguishers, 2.2, UN1044
UN Proper Shipping Name
Fire extinguishers
UN Class
(2.2)
UN Number
UN1044
UN Packaging Group
Not applicable
14. TRANSPORT INFORMATION

Classification for AIR Transportation (IATA)
Consult current IATA Regulations prior to shipping by air.

Classification for Water Transport IMDG
Consult current IMDG Regulations prior to shipping by water.

When shipping via ground, portable fire extinguishers pressurized to less than 241 psi and of less than 1100 cubic inches in size meet the requirements of “Limited Quantity” as referenced in 49 CFR 173.309 (2010). There is no limited quantity designation for fire extinguishers when shipped by air or water.

This section is believed to be accurate at the time of preparation. It is not intended to be a complete statement or summary of the applicable laws, rules, or hazardous material regulations, and is subject to change. Users have the responsibility to confirm compliance with all laws, rules, and hazardous material regulations in effect at the time of shipping.

15. REGULATORY INFORMATION

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

Canada DSL Inventory
All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

SARA Title III Sect. 311/312 Categorization: Pressurized w/ Nitrogen
Pressure hazard
SARA Title III Sect. 311/312 Categorization: Non-pressurized
None

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

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 1
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards - None

HMIS Ratings
HMIS Code for Health - 1
HMIS Code for Flammability - 0
HMIS Code for Physical Hazard - 0
HMIS Code for Personal Protection - See Section 8
*Chronic
Legend
ACGIH: American Conference of Governmental Industrial Hygienists
CAS#: Chemical Abstracts Service Number
EC50: Effect Concentration 50%
IARC: International Agency for Research on Cancer
LC50: Lethal Concentration 50%
LD50: Lethal Dose 50%
N/A: Denotes no applicable information found or available
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value
TSCA: Toxic Substance Control Act

Revision Date: October 1, 2015
Replaces: April 10, 2015
Changes made: Update to Section 14.

Information Source and References
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Prepared By: EnviroNet LLC.

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SAFETY DATA SHEET
Carbon Dioxide
(Fire Extinguishing Agent and Expellant)

1. IDENTIFICATION

Product Name: Carbon Dioxide (Fire Extinguishing Agent and Expellant)
Other Names: CO2

Recommended use of the chemical and restrictions on use

Identified uses: Fire Extinguishing Agent and Expellant
Restrictions on use: Consult applicable fire protection codes

Company Identification: Badger Fire Protection
944 Glenwood Station Lane, Suite 303
Charlottesville, VA  22901
USA

Customer Information Number: (434)-964-3200
Emergency Telephone Number: (800) 424-9300
CHEMTREC Number: (703) 527-3887 (International)

Issue Date: October 1, 2015
Supersedes Date: April 10, 2015

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

2. HAZARD IDENTIFICATION

Hazard Classification
Gas under pressure – liquefied gas
Simple Asphyxiant

Label Elements
Hazard Symbols

Signal Word: Warning

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

Precautionary Statements
Prevention
Do not enter confined space unless adequately ventilated.
In case of inadequate ventilation wear respiratory protection.
2. HAZARD IDENTIFICATION

Response
None

Storage
Keep container tightly closed. Protect from sunlight and store in well-ventilated place.

Disposal
None

Other Hazards
Direct contact with the cold gas or liquid can cause freezing of exposed tissues. Avoid direct inhalation of undiluted gas. Can cause suffocation by reducing oxygen available for breathing. Breathing very high concentrations can cause dizziness, shortness of breath, unconsciousness or asphyxiation.

Specific Concentration Limits
The values listed below represent the percentages of ingredients of unknown toxicity.
- Acute oral toxicity: 0%
- Acute dermal toxicity: 0%
- Acute inhalation toxicity: 0%
- Acute aquatic toxicity: 100%

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: CO2
This product is a substance.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Dioxide</td>
<td>124-38-9</td>
<td>&gt;99.8%</td>
</tr>
</tbody>
</table>

4. FIRST-AID MEASURES

Description of necessary first-aid measures

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

Skin
Gently warm affected areas. Obtain medical attention if frostbite or 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.

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

Indication of immediate medical attention and special treatment needed

Notes 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

Suitable 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.

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

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

6. ACCIDENTAL RELEASE MEASURES

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

Environmental Precautions
None - Material is a normal atmospheric gas.

Methods and materials for containment and cleaning up
None - Material evaporates.

7. HANDLING AND STORAGE

Precautions for safe handling
Containers 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 containers.

Conditions for safe storage
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

Control parameters
Exposure limits are listed below, if they exist.

Carbon Dioxide
ACGIH TLV: 5000 ppm (9000 mg/m³) STEL: 30,000 ppm (54,000 mg/m³)
OSHA PEL: 5000 ppm (9000 mg/m³)

Appropriate engineering controls
Use with adequate ventilation (natural or mechanical), especially in a confined space.

Individual protection measures
Respiratory Protection
Not normally required. In oxygen deficient atmospheres, use a self contained breathing apparatus, as an air purifying respirator will not provide protection.

Skin Protection
Gloves

Eye/Face Protection
Chemical goggles or safety glasses with side shields.

Body Protection
Normal work wear.

9.  PHYSICAL AND CHEMICAL PROPERTIES

Appearance
  Physical State  Liquefied gas under pressure
  Color           Colorless
  Odor            Odorless to Slightly Acidic
  Odor Threshold  No data available
  pH              Not applicable
  Specific Gravity 1.522
  Boiling Range/Point (°C/F) -56.6°C/-69.8°F
  Melting Point (°C/F) -78.5°C/109.2°F (sublimation)
  Flash Point (PMCC) (°C/F) Not flammable
  Vapor Pressure  838 psig @70°F and 1 atmosphere
  Evaporation Rate (BuAc=1) Not applicable
  Solubility in Water Soluble
  Vapor Density (Air = 1) Heavier than air.
  VOC (%)          Not applicable
  Partition coefficient (n-octanol/water) No data available
  Viscosity        Not applicable
  Auto-ignition Temperature No data available
  Decomposition Temperature No data available
  Upper explosive limit Not explosive
  Lower explosive limit Not explosive
  Flammability (solid, gas) Not flammable
10. STABILITY AND REACTIVITY

Reactivity
Containers may rupture or explode if exposed to heat.

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

Conditions to Avoid
Extremely high temperatures - contact with incompatible materials

Incompatible Materials
Powdered metals (ex. aluminum, zinc, etc.) - strong oxidizing agents – alkalis

Hazardous Decomposition Products
In contact with moisture will generate carbonic acid.

11. TOXICOLOGICAL INFORMATION

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

Specific Target Organ Toxicity (STOT) – single exposure
Exposure to carbon dioxide vapor at high concentrations can cause loss of consciousness which may prove fatal due to suffocation as it displaces oxygen. Symptoms may include light headedness, dizziness, difficulty with breathing, drowsiness, nausea, mental confusion, increased blood pressure and increased respiratory rate.

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

Serious Eye damage/Irritation
Direct contact with the cold gas or liquid can cause freezing of exposed tissues.

Skin Corrosion/Irritation
Direct contact with the cold gas or liquid can cause freezing of exposed tissues.

Respiratory or Skin Sensitization
Available data indicates this product is not expected to cause skin or respiratory sensitization.

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

Germ Cell Mutagenicity
Available data indicates this product is not expected to be mutagenic.

Reproductive Toxicity
Available data indicates this product is not expected to cause reproductive toxicity or birth defects.
11. TOXICOLOGICAL INFORMATION

Aspiration Hazard
Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity
LC50 (Rainbow trout) 60mg/l 96 hr

Mobility in soil
Carbon dioxide occurs naturally in the atmosphere.

Persistence/Degradability
Carbon dioxide occurs naturally in the atmosphere.

Bioaccumulative Potential
Carbon dioxide occurs naturally in the atmosphere.

Other adverse effects
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORT INFORMATION

Safety Data Sheet information is intended to address a specific material and not various forms or states of containment.

Special Precautions for Shipping:
Individuals must be certified as Hazardous Material Shipper for all transportation modes. Pressurized Fire Extinguishers are considered a hazardous material by the US Department of Transportation and Transport Canada.

Bulk Shipments:
DOT CFR 172.101 Data  Carbon Dioxide, 2.2, UN1013
UN Proper Shipping Name  Carbon Dioxide
UN Class  (2.2) Non-Flammable Gas
UN Number  UN1013
UN Packaging Group  Not Applicable
Classification for AIR  Consult current IATA Regulations prior to shipping by air.
Transportation (IATA)  Consult current IMDG Regulations prior to shipping by water.
Classification for Water  Consult current IMDG Regulations prior to shipping by water.
Transport IMDG
14. TRANSPORT INFORMATION

Fire Extinguishers:
- DOT CFR 172.101 Data: Fire extinguishers, 2.2, UN1044
- UN Proper Shipping Name: Fire extinguishers
- UN Class: (2.2)
- UN Number: UN1044
- UN Packaging Group: Not applicable
- Classification for AIR: Consult current IATA Regulations prior to shipping by air.
- Classification for Water: Consult current IMDG Regulations prior to shipping by water.

This section is believed to be accurate at the time of preparation. It is not intended to be a complete statement or summary of the applicable laws, rules, or hazardous material regulations, and is subject to change. Users have the responsibility to confirm compliance with all laws, rules, and hazardous material regulations in effect at the time of shipping.

15. REGULATORY INFORMATION

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

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

SARA Title III Sect. 311/312 Categorization
Pressure Hazard

SARA Title III Sect. 313
This product does not contain 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 Physical Hazard - 0
- HMIS Code for Personal Protection - See Section 8
  *Chronic

*Chronic
16. OTHER INFORMATION

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

Revision Date: October 1, 2015
Replaces: April 10, 2015
Changes made: Update to Section 14.

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

Prepared By: EnviroNet LLC.

The information and recommendations presented in this SDS are based on sources believed to be accurate. Badger Fire Protection assumes no liability for the accuracy or completeness of this information. It is the user's responsibility to determine the suitability of the material for their particular purposes. In particular, we make NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, with respect to such information, and we assume no liability resulting from its use. Users should ensure that any use or disposal of the material is in accordance with applicable Federal, State, and local laws and regulations.
SAFETY DATA SHEET

Section 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Super D Dry Powder Extinguisher
Other Identifiers: Class D Powder, Sodium Chloride
Product Code(s): CH 545, CH 557
Model Codes(s) on Extinguishers: 570, 680
Recommended Use: Fire extinguishant for metal fires
Not for human or animal drug use.
Manufacturer: AMEREX CORPORATION
Internet Address: www.amerex-fire.com
Address: 7595 Gadsden Highway, P.O. Box 81
Trussville, AL 35173-0081
Company Telephone: (205) 655-3271
E-mail Address: info@amerex-fire.com
Emergency Contacts: Chemtrec 1(800) 424-9300 or (703) 527–3887
Revised: January 2015

Section 2. HAZARDS IDENTIFICATION

<table>
<thead>
<tr>
<th>GHS – Classification</th>
<th>Health</th>
<th>Environmental</th>
<th>Physical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity: Category 5</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Skin Corrosion/Irritation: Category 3</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Skin Sensitization: NO</td>
<td>None</td>
<td>None</td>
<td>Warning</td>
</tr>
<tr>
<td>Eye: Category 2B</td>
<td>None</td>
<td>None</td>
<td>Warning</td>
</tr>
<tr>
<td>Carcinogen: Category None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

GHS – Label Symbol(s): None
GHS – Signal Word(s): Warning
Other Hazards Not Resulting in Classification: None

GHS – Hazard Phrases
Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>EC No.</th>
<th>REACH Reg. No.</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium chloride evaporated flour grade</td>
<td>231-598-3</td>
<td>NA</td>
<td>7647-14-5</td>
<td>87</td>
</tr>
<tr>
<td>Fullers earth magnesiu aluminum silicate</td>
<td>NA</td>
<td>Not Available</td>
<td>8031-18-3</td>
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<tr>
<td>Mica-potassium aluminum silicate</td>
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<td>Not Available</td>
<td>12001-26-2</td>
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<tr>
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<td>Not Available</td>
<td>112926-00-8</td>
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<td>Not Available</td>
<td>69012-64-2</td>
<td>&lt;2</td>
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<tr>
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<td>228-767-9</td>
<td>Not Available</td>
<td>557-04-0</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

Emergency overview: Light purple, fine solid powder, odorless.

Adverse health effects and symptoms: Possibly a mild irritant to the respiratory system and eyes; mild irritant to the skin. Symptoms may include coughing, shortness of breath, and irritation of the lungs, eyes, and skin. Ingestion, although unlikely, may cause gastric distress.
Cut-off Levels

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Reproductive Toxicity</th>
<th>Carcinogenicity</th>
<th>Mutagenicity</th>
<th>Other Hazard Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium chloride evaporated flour grade</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Fullers earth magnesium aluminum silicate</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
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<td>Mica-potassium aluminum silicate</td>
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<td></td>
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<td>NA</td>
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<td>NA</td>
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<tr>
<td>Silica, amorphous, fumed</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Magnesium stearate octadecanoic acid, Mg salt</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

Section 4. FIRST AID MEASURES

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

Skin Exposure: May cause skin irritation. In case of contact, rinse with plenty of water. Seek medical attention if irritation persists.

Inhalation: May cause irritation, along with coughing. If respiratory irritation or distress occurs remove victim to fresh air. Seek medical attention if irritation persists.

Ingestion: Overdose symptoms may include Nausea, vomiting, diarrhea, and abdominal cramps may result from excessive salt consumption. Profuse water loss can cause unusually high blood sodium levels ('hypernatremia') with symptoms such as dizziness, low blood pressure, and reduced urine production. Serious cases may result in swelling (edema), heightened blood pressure, increased heart rate, breathing trouble, convulsions, coma, and death. If victim is conscious and alert, give plenty of water to drink and do not induce vomiting. Seek immediate medical attention if overdose symptoms appear. Do not leave victim unattended. To prevent aspiration of swallowed product, lay victim on side with head lower than waist.

Medical conditions possibly aggravated by exposure: Kidney conditions, hypertension.
Section 5. FIRE-FIGHTING MEASURES

Flammable Properties: Not flammable
Flash Point: Not determined
Suitable Extinguishing Media: Extinguishing measures suitable to local circumstances and the surrounding environment
Hazardous Combustion Products: Sodium oxides, hydrogen chloride gas
Explosion Data:
  - Sensitivity to Mechanical Impact: Not sensitive
  - Sensitivity to Static Discharge: Not sensitive
  - Unusual fire/explosion hazards: None known
Protective Equipment and Precautions for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand. NIOSH (approved or equivalent) and full protective gear.

Section 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid contact with skin, eyes, and clothing.
Personal Protective Equipment: Minimum - safety glasses, gloves, and a dust respirator.
Emergency Procedures: NA
Methods for Containment: Prevent further leakage or spillage if safe to do so.
Methods for Clean Up: Avoid dust formation; clean up released material using vacuum or wet sweep and shovel to minimize generation of dust. Bag and transfer to properly labeled containers. Ventilate area and wash spill site after material pickup is complete.
Environmental Precautions: Prevent material from entering waterways.
Other: If product is contaminated, use PPE and containment appropriate to the nature of the most toxic chemical/material in the mixture.

Section 7. HANDLING AND STORAGE

Personal Precautions: Use appropriate PPE when handling or maintaining equipment, and wash thoroughly after handling (see Section 8).
Conditions for Safe Storage: Keep product in original container or extinguisher. Contents may be under pressure – inspect for
extinguisher rust periodically to ensure container integrity.


Hazardous Decomposition Products: Chloride, sodium oxides

Hazardous Polymerization: Will not occur

**Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>DFG MAK *</th>
<th>EU BLV</th>
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</thead>
<tbody>
<tr>
<td>Sodium chloride</td>
<td>PNOC**</td>
<td>PNOC</td>
<td>PNOC</td>
<td>NA</td>
</tr>
<tr>
<td>Total dust, 15 mg/m³</td>
<td></td>
<td>Total dust, 10 mg/m³</td>
<td>Total dust, 4 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Respirable fraction, 5 mg/m³</td>
<td></td>
<td>Respirable fraction, 3 mg/m³</td>
<td>Respirable fraction, 1.5 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Fulers earth</td>
<td>20 mpcf***</td>
<td>3 mg/m³ respirable fraction</td>
<td>------</td>
<td>NA</td>
</tr>
<tr>
<td>Mica</td>
<td>PNOC</td>
<td>PNOC</td>
<td>PNOC</td>
<td>NA</td>
</tr>
<tr>
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<td></td>
<td>Total dust, 10 mg/m³</td>
<td>Total dust, 4 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Respirable fraction, 5 mg/m³</td>
<td></td>
<td>Respirable fraction, 3 mg/m³</td>
<td>Respirable fraction, 1.5 mg/m³</td>
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</tr>
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</tr>
<tr>
<td>% SiO₂</td>
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<td></td>
<td></td>
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<tr>
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<td>PNOC</td>
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<td></td>
<td>Total dust, 10 mg/m³</td>
<td>Total dust, 4 mg/m³</td>
<td></td>
</tr>
<tr>
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<td></td>
<td>Respirable fraction, 3 mg/m³</td>
<td>Respirable fraction, 1.5 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Magnesium stearate octadecanoic acid, Mg salt</td>
<td>PNOC**</td>
<td>PNOC</td>
<td>PNOC</td>
<td>NA</td>
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<tr>
<td>Total dust, 15 mg/m³</td>
<td></td>
<td>Total dust, 10 mg/m³</td>
<td>Total dust, 4 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Respirable fraction, 5 mg/m³</td>
<td></td>
<td>Respirable fraction, 3 mg/m³</td>
<td>Respirable fraction, 1.5 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

*German regulatory limits **PNOC = Particulates not otherwise classified (ACGIH) also known as Particulates not otherwise regulated (OSHA) *** NR = Not Regulated. All values are 8 hour time weighted average concentrations.

**Engineering Controls:**
- Showers
- Eyewash stations
- Ventilation systems

**Personal Protective Equipment – PPE Code E:**

![Safety Glasses](image1.png)
![Gloves](image2.png)
![Safety Suit](image3.png)
![Respirator](image4.png)
Eye/Face Protection: Tightly fitting safety goggles. Contact lens may absorb and concentrate irritants; if this problem occurs, a workplace policy should be determined.

Skin and Body Protection: Wear protective coveralls, rubber boots, PVC gloves. Use barrier cream and skin cleaning cream if concentrations are high enough to cause mild irritation.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn. Use N95 dust mask for limited exposure, use air-purifying respirator (APR) with high efficiency particulate air (HEPA) filters for prolonged exposure. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations. The need for respiratory protection is not likely for short-term use in well ventilated areas.

Hygiene Measures: Good personal hygiene practices essential, such as avoiding food, tobacco products, or other hand-to-mouth contact when handling. Wash thoroughly after handling.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Fine crystals, off-white
Molecular Weight: 58.44 g/mol (Sodium Chloride)
Odor: None
Odor Threshold: Not Applicable
Decomposition Temperature °C: Not Applicable
Freezing Point °C: NA
Initial Boiling Point °C: 1413
Physical State: Crystalline Powder
pH: Approximately 6.7 – 7.3 for a 10% solution
Flash Point °C: None
Autoignition Temperature °C: None
Boiling Point/Range °C: 695.7
Melting Point/Range °C: 804
Flammable: Not Flammable
Flammability Limits in Air °C: Upper – Not Flammable; Lower-Not Flammable
Explosive Properties: None
Oxidizing Properties: None
Volatile Component (%vol) Not Applicable
Evaporation Rate: Not Applicable
Vapor Density: Not Applicable
Vapor Pressure: < 1 mm Hg  
Specific gravity: Approximately 2.165  
Solubility: Miscible  
Partition Coefficient: No Information Available  
Viscosity: Not Applicable

**Section 10. STABILITY AND REACTIVITY**

**Stability:** Stable under recommended storage and handling conditions.  
**Reactivity:** Generally unreactive.  
**Incompatibles:** Strong oxidizers.  
**Conditions to Avoid:** Storage or handling near incompatibles.  
**Hazardous Decomposition Products:** Heat of fire may release chlorine compounds and oxides of sodium.  
**Possibility of Hazardous Reactions:** None  
**Hazardous Polymerization:** Does not occur

**Section 11. TOXICOLOGICAL INFORMATION**

**Likely Routes of Exposure:** Inhalation, skin and eye contact. Ingestion  
**Symptoms:**  
Immediate:  
Inhalation: Irritation, coughing.  
Eyes: Irritation.  
Skin: Irritation.  
Ingestion: May cause irritation of gastrointestinal tract.  
Delayed: Symptoms may be delayed  
**Acute Toxicity:** Slightly toxic.  
**Chronic Toxicity:**  
Short-term Exposure: None known.  
Long-term Exposure: As with all dusts, pneumoconiosis, or “dusty lung” disease, may result from chronic exposure.
Acute Toxicity Values - Health

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 (Inhalation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium chloride</td>
<td>3000 mg/kg (rat); (TDL human 12357 mg/kg/23d)</td>
<td>10000 mg/kg (rabbit)</td>
<td>None</td>
</tr>
<tr>
<td>Fullers earth</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Mica</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Zeolite</td>
<td>None</td>
<td>None</td>
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</tr>
<tr>
<td>Silica</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Magnesium stearate octadecanoic acid, Mg salt</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Reproductive Toxicity:

This product’s ingredients are not known to have reproductive or teratogenic effects.

Target Organs and Effects (TOST):

Respiratory system (mild irritant).

This product is a mild irritant to epithelial tissue, (eyes, mucus membranes, skin) and may aggravate dermatitis. No information was found indicating the product causes sensitization. May be a kidney toxicant at high doses. May cause pulmonary edema and respiratory arrest at very high doses.

Other Toxicity Categories

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Germ Cell Mutagenicity</th>
<th>Carcinogenicity</th>
<th>Reproductive</th>
<th>TOST Single Exp</th>
<th>TOST Repeated Exp</th>
<th>Aspiration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium chloride</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Fullers earth</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Mica</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Zeolite</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Silica</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Magnesium stearate octadecanoic acid, Mg salt</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Ecotoxicity: Can be toxic in high concentrations.

Persistence/Degradability: Degrades rapidly to chloride ion in wet environments, but the chloride ion is very persistent.

Probability of rapid biodegradation: Est: 0.731 (Rapid)
Anaerobic biodegradation probability: Est: 0.836 (Rapid)
Bioaccumulation potential: Low.
Bioconcentration factor: 3.16 L/kg
Bioaccumulation Potential: Low. CT50 (days): LogP<3
Mobility in soil: Log Koc: Est -0.400
Log Koa: Not applicable
Log Kaw: Not applicable
Atmospheric oxidation half-life: 20.6 days
Level III Fugacity Model: No information

Other Adverse Ecological Effects: No other known effects at this time

### Aquatic Toxicity Values - Environment

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Acute (LC50)</th>
<th>Chronic (LC50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium chloride</td>
<td>9,498 (96h)-Rainbow Trout</td>
<td>Cat IV; 1300 mg/l (rainbow trout), 670 mg/l (water flea)</td>
</tr>
<tr>
<td>Fullers earth</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Mica</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Zeolite</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silica</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Magnesium stearate octadecanoic acid, Mg salt</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Aquatic Toxicity Values – Calculated Estimates

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Acute (LC50)</th>
<th>EC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium chloride</td>
<td>597 mg/l Fish 96hr 296 mg/l Daphnia 48 hr</td>
<td>597 mg/l Gr Algae 96hr</td>
</tr>
<tr>
<td>Fullers earth</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Mica</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Zeolite</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silica</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Magnesium stearate octadecanoic acid, Mg salt</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

## Section 13. DISPOSAL CONSIDERATIONS

**Safe Handling**

Keep formation of airborne dust to a minimum. Avoid breathing dust. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Use appropriate PPE when handling, and wash thoroughly after handling (see Section 8).

**Waste Disposal Considerations**

Dispose in accordance with federal, state, and local regulations.

**Contaminated Packaging**

Dispose in accordance with federal, state, and local regulations.

NOTES:

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.
Section 14. TRANSPORT INFORMATION

UN Number: NA
UN Proper Shipping Name: NA
Transport Hazard Class: NA
Packing Group: NA
Marine Pollutant?: NA

IATA Not regulated
DOT Not regulated

NOTES:
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.

Special Precautions for Shipping:
If 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 is Limited Quantity when pressurized to less than 241 psig and when shipped via highway or rail. Use a Non-Flammable gas label (class 2.2) when shipping via air.

Section 15. REGULATORY INFORMATION

International Inventory Status: Sodium chloride is on the following inventories

<table>
<thead>
<tr>
<th>Country(ies)</th>
<th>Agency</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States of America</td>
<td>TSCA</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>DSL</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>EINECS/ELINCS</td>
<td>Yes</td>
</tr>
<tr>
<td>Australia</td>
<td>AICS</td>
<td>Yes</td>
</tr>
<tr>
<td>Japan</td>
<td>MITI</td>
<td>Yes</td>
</tr>
<tr>
<td>South Korea</td>
<td>KECL</td>
<td>Yes</td>
</tr>
</tbody>
</table>

REACH Title VII Restrictions: No information available
### Substances

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Dangerous Substances</th>
<th>Organic Solvents</th>
<th>Harmful Substances Whose Names Are to be Indicated on Label</th>
<th>Pollution Release and Transfer Registry (Class II)</th>
<th>Pollution Release and Transfer Registry (Class I)</th>
<th>Poison and Deleterious Substances Control Law</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Chloride</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

### Components

<table>
<thead>
<tr>
<th>Component</th>
<th>ISHA – Harmful Substances Prohibited for Manufacturing, Importing, Transferring, or Supplying</th>
<th>ISHA – Harmful Substances Requiring Permission</th>
<th>Toxic Chemical Classification Listing (TCCL) – Toxic Chemicals</th>
<th>Toxic Release Inventory (TRI) – Group I</th>
<th>Toxic Release Inventory (TRI) – Group II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium chloride</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Fullers earth</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Mica</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Zeolite</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Silica</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Magnesium stearate octadecanoic acid, Mg salt</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

### 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.  
36 Wear suitable protective clothing.

### U.S. Federal Regulatory Information:

**SARA 313:**  
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) - This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.  
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).
SARA 311/312  **Hazard Categories:**

<table>
<thead>
<tr>
<th>Category</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Health Hazard</td>
<td>Yes</td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Sudden Release of Pressure Hazard-*</td>
<td>Yes</td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td>No</td>
</tr>
</tbody>
</table>

* - Only applicable if material is in a pressurized extinguisher.

**Clean Water Act:**
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

**Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)**
This product does not contain any substances regulated as hazardous air pollutants (HAPs) under Section 112 of the Clean Air Act Amendments of 1990.

**U.S. 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.

**Other:**
**Canada** – WHMIS Hazard Class
No component listed
Section 16. OTHER INFORMATION

This SDS 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.

Issuing Date 17-June-2012
Revision Date 23-October-2013
Revision Date 06-January-2015
Revision Notes None

The information herein is given in good faith but no warranty, expressed or implied, is made. Updated by William F. Garvin, CIH.
SAFETY DATA SHEET
Halotron-1
(Fire Extinguishing Agent with Expellant)

1. IDENTIFICATION

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Halotron-1 (Fire Extinguishing Agent with Expellant)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Names</td>
<td>HCFC Blend B, Halocarbon Agent</td>
</tr>
<tr>
<td>Identified uses</td>
<td>Fire Extinguishing Agent</td>
</tr>
<tr>
<td>Restrictions on use</td>
<td>Consult applicable fire protection codes</td>
</tr>
</tbody>
</table>

Company Identification
Badger Fire Protection
944 Glenwood Station Lane, Suite 303
Charlottesville, VA  22901
USA

Customer Information Number
(434) 964-3200

Emergency Telephone Number
(800) 424-9300
(703) 527-3887 (International)

Issue Date
October 1, 2015
Supersedes Date
April 10, 2015

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

2. HAZARD IDENTIFICATION

Hazard Classification
Gas under pressure – liquefied gas
Simple Asphyxiant
Specific Target Organ Toxicity Single Exposure – Category 2
Specific Target Organ Toxicity Repeat Exposure – Category 2

Label Elements
Hazard Symbols

Signal Word: Warning

Hazard Statements
Contents under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.
May cause damage to organs (liver, central nervous system) through inhalation.
May cause damage to organs (liver) through prolonged or repeated exposure (inhalation).
2. HAZARD IDENTIFICATION

Precautionary Statements

Prevention
Do not enter confined space unless adequately ventilated.
In case of inadequate ventilation wear respiratory protection.
Do not breathe fume/gas/mist/vapors/spray.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.

Response
Get medical advice/attention if you feel unwell.
If exposed or concerned: Call a poison center or doctor.

Storage
Keep container tightly closed.
Protect from sunlight and store in well-ventilated place.
Store locked up.

Disposal
Dispose of contents/container is accordance with local and national regulations.

Other Hazards
Direct contact with the cold gas or liquid can cause freezing of exposed tissues. Avoid direct inhalation of undiluted gas. Can cause suffocation by reducing oxygen available for breathing. Breathing very high concentrations can cause dizziness, shortness of breath, unconsciousness or asphyxiation.

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

- Acute oral toxicity: 1 – 10%
- Acute dermal toxicity: 1 – 10%
- Acute inhalation toxicity: 1 – 10%
- Acute aquatic toxicity: 1 – 10%

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: HCFC Blend B, Halocarbon Agent
This product is a mixture.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2-dichloro-1,1,1-trifluoroethane</td>
<td>306-83-2</td>
<td>85 – 95%</td>
</tr>
<tr>
<td>Proprietary gas mixture</td>
<td>NA</td>
<td>1 – 10%</td>
</tr>
</tbody>
</table>

Note: The expellant is argon.

4. FIRST-AID MEASURES

Description of necessary 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
Flush with water. Obtain medical attention if frostbite or blistering occurs or redness persists.
4. FIRST- AID MEASURES

Ingestion
Ingestion is not considered a potential route of exposure.

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

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

Indication of immediate medical attention and special treatment needed

Notes to Physicians
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.

The use of catecholamines such as adrenaline, or similar compounds can increase susceptibility to heart irregularities caused by excessive exposure to these types of compounds.

5. FIRE - FIGHTING MEASURES

Suitable Extinguishing Media
Halotron-1 is used as an extinguishing agent and therefore is not a problem when trying to control a fire. Use extinguishing agent appropriate to other materials involved. Keep 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.

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

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Remove leaking cylinder to a safe place. Ventilate the area. 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.
Manufacturer's Recommended 1 Hr. Emergency Exposure Limit: 1000ppm (v/v)
Manufacturer's Recommended 1 Min. Emergency Exposure Limit: 2500ppm (v/v)

Environmental Precautions
None

Methods and materials for containment and cleaning up
None
7. HANDLING AND STORAGE

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

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure limits are listed below, if they exist.

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.

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

Individual protection measures
Respiratory Protection
Not normally required under conditions of use as a portable fire extinguisher. In oxygen deficient atmospheres, use a self contained breathing apparatus, as an air purifying respirator will not provide protection.

Skin Protection
Neoprene, PVC or PVA gloves

Eye/Face Protection
Chemical goggles or safety glasses with side shields.

Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Agent – Halotron-1
Appearance
Physical State: Liquefied gas under pressure
Color: Colorless
Odor: Slight ether-like
Odor Threshold: No data available
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative Density (Air = 1)</td>
<td>5.14</td>
</tr>
<tr>
<td>Liquid Density</td>
<td>92.3 lb/ft³ @ 77°F</td>
</tr>
<tr>
<td></td>
<td>1.48 kg/l @ 25°C</td>
</tr>
<tr>
<td>Gas Density</td>
<td>~ 0.385 lb/ft³</td>
</tr>
<tr>
<td></td>
<td>~6.17 kg/m³</td>
</tr>
<tr>
<td>Boiling Range/Point (°C/F)</td>
<td>27°C/80.6°F</td>
</tr>
<tr>
<td>Melting Point (°C/F)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash Point (°C/F)</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Vapor Pressure of liquid</td>
<td>~ 11.2 psig @ 68°F</td>
</tr>
<tr>
<td></td>
<td>77 kPa @ 20°C</td>
</tr>
<tr>
<td>Evaporation Rate (BuAc=1)</td>
<td>Faster than water, slower than ether</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>0.39% wt @25°C/ 77°F, 1 atm.</td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>No data available</td>
</tr>
<tr>
<td>VOC (%)</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosive limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not flammable</td>
</tr>
</tbody>
</table>

**Expellant - Argon**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Physical State: Compressed gas</td>
</tr>
<tr>
<td></td>
<td>Color: Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling Range/Point (°C/F)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting Point (°C/F)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash Point (°C/F)</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation Rate (BuAc=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>VOC (g/l)</td>
<td>None</td>
</tr>
<tr>
<td>VOC (%)</td>
<td>None</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No data available</td>
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<tr>
<td>Viscosity</td>
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<tr>
<td>Auto-ignition Temperature</td>
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</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Lower explosive limit</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not flammable</td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

Reactivity
Containers may rupture or explode if exposed to heat.

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

Conditions to Avoid
Extremely high temperatures - flames

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

Hazardous Decomposition Products
Hydrochloric and hydrofluoric acids - possibly carbonyl halides

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
2,2-dichloro-1,1,1-trifluoroethane
Simple asphyxiant
Inhalation 4 hour, LC50(rat) 32,000 ppm
Oral Approximate Lethal Dose, rat: 9000 mg/kg
Dermal Approximate Lethal Dose, rat: >2000 mg/kg
Cardiac LOAEL: 2% vol.
Cardiac NOAEL: 1% vol.
Argon
Simple asphyxiant

Specific Target Organ Toxicity (STOT) – single exposure
2,2-dichloro-1,1,1-trifluoroethane: Adverse effects to the liver and central nervous system were observed in animal studies (inhalation.)
Argon: Exposure to argon gas at high concentrations can cause suffocation by reducing oxygen available for breathing. Breathing very high concentrations can cause dizziness, shortness of breath, unconsciousness or asphyxiation.

Specific Target Organ Toxicity (STOT) – repeat exposure
2,2-dichloro-1,1,1-trifluoroethane: Adverse effects to the liver were observed in animal studies (inhalation.)

Serious Eye damage/Irritation
2,2-dichloro-1,1,1-trifluoroethane: In rabbit study, mild to moderate conjunctival irritation with no corneal or iritic involvement was observed in an unwashed rabbit eye. An eye dosed with the test substance and promptly washed had mild to slight transient corneal opacity and mild to moderate conjunctival irritation with no iritic involvement. Both eyes were normal within 3-7 days.

Skin Corrosion/Irritation
2,2-dichloro-1,1,1-trifluoroethane: Dermal exposure in rabbits did not result in any irritation.
11. TOXICOLOGICAL INFORMATION

Respiratory or Skin Sensitization
No relevant studies identified.

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

Germ Cell Mutagenicity
2,2-dichloro-1,1,1-trifluoroethane: Not considered genotoxic based on animal and test-tube studies.

Reproductive Toxicity
2,2-dichloro-1,1,1-trifluoroethane: No affects to reproductive performance were seen in rats or harm to the unborn animals in rats or rabbits at 5000 and 10,000ppm

Aspiration Hazard
Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity
2,2-dichloro-1,1,1-trifluoroethane
LC50 Fathead minnow 77mg/l 96hr

Mobility in soil
No relevant studies identified.

Persistence/Degradability
No relevant studies identified.

Bioaccumulative Potential
No relevant studies identified.

Other adverse effects
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORT INFORMATION

Safety Data Sheet information is intended to address a specific material and not various forms or states of containment.

Special Precautions for Shipping:
Individuals must be certified as Hazardous Material Shipper for all transportation modes.
Pressurized Fire Extinguishers are considered a hazardous material by the US Department of Transportation and Transport Canada.
SAFETY DATA SHEET
Halotron-1
(Fire Extinguishing Agent with Expellant)

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
Classification for AIR
Consult current IATA Regulations prior to shipping by air.
Classification for Water
Consult current IMDG Regulations prior to shipping by water.

Fire Extinguishers:
DOT CFR 172.101 Data
Fire extinguishers, 2.2, UN1044
UN Proper Shipping Name
Fire extinguishers
UN Class
(2.2)
UN Number
UN1044
UN Packaging Group
Not applicable
Classification for AIR
Consult current IATA Regulations prior to shipping by air.
Classification for Water
Consult current IMDG Regulations prior to shipping by water.

This section is believed to be accurate at the time of preparation. It is not intended to be a complete statement or summary of the applicable laws, rules, or hazardous material regulations, and is subject to change. Users have the responsibility to confirm compliance with all laws, rules, and hazardous material regulations in effect at the time of shipping.

15. REGULATORY INFORMATION

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

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

SARA Title III Sect. 311/312 Categorization
Immediate (Acute) Health Hazard, Delayed (Chronic) 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)

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 1
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 1
NFPA Code for Special Hazards – None
16. OTHER INFORMATION

HMIS Ratings
HMIS Code for Health - 1*
HMIS Code for Flammability - 0
HMIS Code for Physical Hazard - 1
HMIS Code for Personal Protection - See Section 8
*Chronic

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

Revision Date: October 1, 2015
Replaces: April 10, 2015
Changes made: Update to Section 14

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

Prepared By: EnviroNet LLC.

The information and recommendations presented in this SDS are based on sources believed to be accurate. Badger Fire Protection assumes no liability for the accuracy or completeness of this information. It is the user's responsibility to determine the suitability of the material for their particular purposes. In particular, we make NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, with respect to such information, and we assume no liability resulting from its use. Users should ensure that any use or disposal of the material is in accordance with applicable Federal, State, and local laws and regulations.
1. IDENTIFICATION

Product Name
Loaded Stream (Anti-Freeze) Solution
(Fire Extinguishing Agent, Pressurized and Non-pressurized)

Other Names
Potassium Acetate

Recommended use of the chemical and restrictions on use
Identified uses
Fire Extinguishing Agent

Restrictions on use
Do not use on electrically energized equipment. Consult applicable fire protection codes.

Company Identification
Badger Fire Protection
944 Glenwood Station Lane, Suite 303
Charlottesville, VA  22901
USA

Customer Information Number
(434)-964-3200

Emergency Telephone Number
(800) 424-9300
(703) 527-3887 (International)

Issue Date
October 1, 2015

Supersedes Date
April 10, 2015

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

2. HAZARD IDENTIFICATION

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

GHS Classification – Pressurized

Hazard Classification
Gas under pressure – Compressed gas

Label Elements
Hazard Symbols

Signal Word: Warning

Hazard Statements
Contents under pressure; may explode if heated.
2. HAZARD IDENTIFICATION

Precautionary Statements
Prevention
None
Response
None
Storage
Protect from sunlight.
Store in well-ventilated place.
Disposal
None

GHS Classification: Non-pressurized

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

Label Elements
Hazard Symbols
None

Signal Word: None

Hazard Statements
None

Precautionary Statements
Prevention
None
Response
None
Storage
None
Disposal
None

Other Hazards
Possible electrocution hazard if used on electrically energized equipment.

Specific Concentration Limits
The values listed below represent the percentages of ingredients of unknown toxicity.
Acute oral toxicity 0%
Acute dermal toxicity 0%
Acute inhalation toxicity 0%
Acute aquatic toxicity 0%
3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Acetate</td>
<td>127-08-2</td>
<td>35 - 45%</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>55 - 65%</td>
</tr>
</tbody>
</table>

Note: Pressurized product uses nitrogen or compressed air as the expellant.

4. FIRST-AID MEASURES

Description of necessary first-aid measures

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

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

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

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

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

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

5. FIRE-FIGHTING MEASURES

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

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

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

   **Personal precautions, protective equipment and emergency procedures**
   Wear appropriate protective clothing. Prevent skin and eye contact. Remove leaking container to a safe place. Ventilate the area.

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

   **Methods and materials for containment and cleaning up**
   Contain and absorb using appropriate inert material. Transfer into suitable containers for recovery or disposal.

7. **HANDLING AND STORAGE**

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

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

8. **EXPOSURE CONTROLS/PERSONAL PROTECTION**

   **Control parameters**
   Exposure limits are listed below, if they exist.

   **Potassium Acetate**
   None

   **Appropriate engineering controls**
   Use with adequate ventilation. If this product is used in a pressurized system, there should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

   **Individual protection measures**
   **Respiratory Protection**
   Not normally required. In oxygen deficient atmospheres, use a self contained breathing apparatus, as an air purifying respirator will not provide protection.

   **Skin Protection**
   Gloves

   **Eye/Face Protection**
   Chemical goggles or safety glasses with side shields.

   **Body Protection**
   Normal work wear.
### PHYSICAL AND CHEMICAL PROPERTIES

#### Non-Pressurized

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not applicable</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.19-1.24</td>
</tr>
<tr>
<td>Boiling Range/Point (°C/F)</td>
<td>100/212</td>
</tr>
<tr>
<td>Melting Point (°C/F)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash Point (PMCC) (°C/F)</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation Rate (BuAc=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Soluble</td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>VOC (g/l)</td>
<td>None</td>
</tr>
<tr>
<td>VOC (%)</td>
<td>None</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower explosive limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

#### Expellant - Nitrogen

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Compressed gas</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.075 lb/ft³ @70°F as vapor</td>
</tr>
<tr>
<td>Boiling Range/Point (°C/F)</td>
<td>-196°C/-321 °F</td>
</tr>
<tr>
<td>Melting Point (°C/F)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash Point (PMCC) (°C/F)</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation Rate (BuAc=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>VOC (g/l)</td>
<td>None</td>
</tr>
<tr>
<td>VOC (%)</td>
<td>None</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
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</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>Not explosive</td>
</tr>
</tbody>
</table>
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower explosive limit</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not flammable</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

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

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

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

Incompatible Materials
Strong oxidizing agents - water reactive materials

Hazardous Decomposition Products
Oxides of carbon - potassium

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Potassium Acetate
Oral LD50 (Rat) 3250 mg/kg
Dermal LD50 (Rabbit) >20,000 mg/kg (analogous compound)
Inhalation LC50(rat) >5.6 mg/l (analogous compound)

Nitrogen
Simple asphyxiant

Specific Target Organ Toxicity (STOT) – single exposure
Potassium Acetate: No data available
Nitrogen: Exposure to nitrogen gas at high concentrations can cause suffocation by reducing oxygen available for breathing. Breathing very high concentrations can cause dizziness, shortness of breath, unconsciousness or asphyxiation.

Specific Target Organ Toxicity (STOT) – repeat exposure
Potassium Acetate: No data available

Serious Eye damage/Irritation
Potassium Acetate: Not irritating (rabbit)

Skin Corrosion/Irritation
Potassium Acetate Not irritating (rabbit)
11. TOXICOLOGICAL INFORMATION

Respiratory or Skin Sensitization
Potassium Acetate: Available data indicates this component is not expected to cause skin sensitization.
No data available for respiratory sensitization.

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

Germ Cell Mutagenicity
Potassium Acetate: Available data indicates this component is not expected to be mutagenic.

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

Aspiration Hazard
Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Potassium Acetate:
LC50 Zebrafish 1497 mg/l 96h
EC50 Daphnia magna 420 mg/l 48h
EC50 Mann diatom 500 mg/l 72hr

Mobility in soil
No relevant studies identified.

Persistence/Degradability
No relevant studies identified.

Bioaccumulative Potential
No relevant studies identified.

Other adverse effects
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Disposal Methods
Dispose of container in accordance with all applicable local and national regulations.
14. TRANSPORT INFORMATION

Safety Data Sheet information is intended to address a specific material and not various forms or states of containment.

Special Precautions for Shipping:
Individuals must be certified as Hazardous Material Shipper for all transportation modes. Pressurized Fire Extinguishers are considered a hazardous material by the US Department of Transportation and Transport Canada.

DOT CFR 172.101 Data
- UN Proper Shipping Name: Fire extinguishers
- UN Class: 2.2
- UN Number: UN1044
- UN Packaging Group: Not applicable
- Classification for AIR: Consult current IATA Regulations prior to shipping by air.
- Classification for Water: Consult current IMDG Regulations prior to shipping by water.
- Transport IMDG

When shipping via ground, portable fire extinguishers pressurized to less than 241 psi and of less than 1100 cubic inches in size meet the requirements of “Limited Quantity” as referenced in 49 CFR 173.309 (2010). There is no limited quantity designation for fire extinguishers when shipped by air or water.

This section is believed to be accurate at the time of preparation. It is not intended to be a complete statement or summary of the applicable laws, rules, or hazardous material regulations, and is subject to change. Users have the responsibility to confirm compliance with all laws, rules, and hazardous material regulations in effect at the time of shipping.

15. REGULATORY INFORMATION

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

Canada DSL Inventory
All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

SARA Title III Sect. 311/312 Categorization: Pressurized
Pressure hazard

SARA Title III Sect. 311/312 Categorization: Non-pressurized
None

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

### NFPA Ratings
- NFPA Code for Health: 1
- NFPA Code for Flammability: 0
- NFPA Code for Reactivity: 0
- NFPA Code for Special Hazards: None

### HMIS Ratings
- HMIS Code for Health: 1
- HMIS Code for Flammability: 0
- HMIS Code for Physical Hazard: 0
- HMIS Code for Personal Protection: See Section 8
  *Chronic

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

Revision Date: October 1, 2015
Replaces: April 10, 2015
Changes made: Update to Section 14.

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

Prepared By: EnviroNet LLC.

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1. IDENTIFICATION

Product Name
Loaded Stream (Anti-Freeze) AC-40 Dry Charge (Fire Extinguishing Agent)

Other Names
Potassium Acetate

Recommended use of the chemical and restrictions on use

Identified uses
Fire Extinguishing Agent

Restrictions on use
Consult applicable fire protection codes

Company Identification
Badger Fire Protection
944 Glenwood Station Lane, Suite 303
Charlottesville, VA 22901
USA

Customer Information Number
(434)-964-3200

Emergency Telephone Number
CHEMTREC Number
(800) 424-9300
(703) 527-3887 (International)

Issue Date
October 1, 2015

Supercedes Date
April 10, 2015

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

2. HAZARD IDENTIFICATION

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

Label Elements
Hazard Symbols
None

Signal Word: None

Hazard Statements
None

Precautionary Statements
Prevention
None
Response
None
Storage
None
Disposal
None
2. HAZARD IDENTIFICATION

Other Hazards
None

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

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a substance.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Acetate</td>
<td>127-08-2</td>
<td>~100%</td>
</tr>
</tbody>
</table>

4. FIRST-AID MEASURES

Description of necessary first-aid measures

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

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

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

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

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

Indication of immediate medical attention and special treatment needed

Notes to Physicians
Treat symptomatically.

5. FIRE - FIGHTING MEASURES

Suitable Extinguishing Media
This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a fire. Use extinguishing agent appropriate to other materials involved.
5. **FIRE - FIGHTING MEASURES**

Specific hazards arising from the chemical
None known

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

6. **ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures
Wear appropriate protective clothing. Prevent skin and eye contact.

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

Methods and materials for containment and cleaning up
Sweep up or vacuum and transfer into suitable containers for recovery or disposal.

7. **HANDLING AND STORAGE**

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

Conditions for safe storage
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**

Control parameters
Exposure limits are listed below, if they exist.

Potassium Acetate
None

Nuisance Dust Limit
OSHA PEL: 50 mppcf or 15 mg/m³ TWA, total dust
15 mppcf or 5 mg/m³ TWA, respirable fraction

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

Individual protection measures
Respiratory Protection
Not normally required. Use dust mask where dustiness is prevalent, or TLV is exceeded. In oxygen deficient atmospheres, use a self contained breathing apparatus, as an air purifying respirator will not provide protection.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Skin Protection
Gloves

Eye/Face Protection
Chemical goggles or safety glasses with side shields.

Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Physical State</th>
<th>Solid (powder)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor</td>
<td>Odorless</td>
<td></td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.57</td>
<td></td>
</tr>
<tr>
<td>Boiling Range/Point (°C/F)</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Melting Point (°C/F)</td>
<td>292/558</td>
<td></td>
</tr>
<tr>
<td>Flash Point (°C/F)</td>
<td>Not flammable</td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate (BuAc=1)</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>200g/100g water</td>
<td></td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>VOC (g/l)</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>VOC (%)</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Lower explosive limit</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not flammable</td>
<td></td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Reactivity
No data available.

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

Conditions to Avoid
Exposure to direct sunlight - contact with incompatible materials
10. STABILITY AND REACTIVITY

Incompatible Materials
Strong oxidizing agents

Hazardous Decomposition Products
Oxides of carbon - potassium

11. TOxicoLOGICAL INFORMATION

Acute Toxicity
Potassium Acetate
Oral LD50 (Rat) 3250 mg/kg
Dermal LD50 (Rabbit) >20,000 mg/kg (analogous compound)
Inhalation LC50(rat) >5.6 mg/l (analogous compound)

Specific Target Organ Toxicity (STOT) – single exposure
Potassium Acetate: No data available

Specific Target Organ Toxicity (STOT) – repeat exposure
Potassium Acetate: No data available

Serious Eye damage/Irritation
Potassium Acetate: Not irritating (rabbit)

Skin Corrosion/Irritation
Potassium Acetate Not irritating (rabbit)

Respiratory or Skin Sensitization
Potassium Acetate: Available data indicates this component is not expected to cause skin sensitization. No data available for respiratory sensitization.

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

Germ Cell Mutagenicity
Potassium Acetate: Available data indicates this component is not expected to be mutagenic.

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

Aspiration Hazard
Not an aspiration hazard.
12. ECOLOGICAL INFORMATION

Ecotoxicity
Potassium Acetate:
LC50 Zebrafish 1497 mg/l 96h
EC50 Daphnia magna 420 mg/l 48h
EC50 Mann diatom 500 mg/l 72hr

Mobility in soil
No relevant studies identified.

Persistence/Degradability
No relevant studies identified.

Bioaccumulative Potential
No relevant studies identified.

Other adverse effects
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Disposal Methods
Dispose of container in accordance with all applicable local and national regulations.

14. TRANSPORT INFORMATION

Safety Data Sheet information is intended to address a specific material and not various forms or states of containment.

Special Precautions for Shipping:
Individuals must be certified as Hazardous Material Shipper for all transportation modes.


DOT CFR 172.101 Data
 UN Proper Shipping Name Not Regulated
 UN Class None.
 UN Number None.
 UN Packaging Group None.
Classification for AIR Consult current IATA Regulations prior to shipping by air.
Transportation (IATA) Classification for Water Consult current IMDG Regulations prior to shipping by water.
 Transport IMDG

This section is believed to be accurate at the time of preparation. It is not intended to be a complete statement or summary of the applicable laws, rules, or hazardous material regulations, and is subject to change. Users have the responsibility to confirm compliance with all laws, rules, and hazardous material regulations in effect at the time of shipping.
15. REGULATORY INFORMATION

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

Canada DSL Inventory
All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

SARA Title III Sect. 311/312 Categorization
None

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

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 1
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards - None

HMIS Ratings
HMIS Code for Health - 1
HMIS Code for Flammability - 0
HMIS Code for Physical Hazard - 0
HMIS Code for Personal Protection - See Section 8
*Chronic

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

Revision Date: October 1, 2015
Replaces: April 10, 2015
Changes made: Update to Section 14.

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

Prepared By: EnviroNet LLC.

The information and recommendations presented in this SDS are based on sources believed to be accurate. Badger Fire Protection assumes no liability for the accuracy or completeness of this information. It is the user's responsibility to determine the suitability of the material for their particular purposes. In particular, we make NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, with respect to such information, and we assume no liability resulting from its use. Users should ensure that any use or disposal of the material is in accordance with applicable Federal, State, and local laws and regulations.
1. IDENTIFICATION

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

Other Names
Potassium Bicarbonate, PK, PKP

Recommended use of the chemical and restrictions on use

Identified uses
Fire Extinguishing Agent

Restrictions on use
Consult applicable fire protection codes

Company Identification
Badger Fire Protection
944 Glenwood Station Lane, Suite 303
Charlottesville, VA  22901
USA

Customer Information Number
(434)-964-3200

Emergency Telephone Number
CHEMTREC Number
(800) 424-9300
(703) 527-3887 (International)

Issue Date
October 1, 2015

Supersedes Date
April 10, 2015

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

2. HAZARD IDENTIFICATION

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

GHS Classification – Pressurized

Hazard Classification
Gas under pressure – Compressed gas

Label Elements
Hazard Symbols

Signal Word: Warning

Hazard Statements
Contents under pressure; may explode if heated.
2. HAZARD IDENTIFICATION

Precautionary Statements
Prevention
None
Response
None
Storage
Protect from sunlight.
Store in well-ventilated place.
Disposal
None

GHS Classification: Non-pressurized

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

Label Elements
Hazard Symbols
None

Signal Word: None

Hazard Statements
None

Precautionary Statements
Prevention
None
Response
None
Storage
None
Disposal
None

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

Specific Concentration Limits
The values listed below represent the percentages of ingredients of unknown toxicity.
Acute oral toxicity  < 10%
Acute dermal toxicity  < 10%
Acute inhalation toxicity  < 10%
Acute aquatic toxicity  < 10%
3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Bicarbonate</td>
<td>298-14-6</td>
<td>75 - 85%</td>
</tr>
<tr>
<td>Calcium Carbonate</td>
<td>471-34-1</td>
<td>5 - 15%</td>
</tr>
<tr>
<td>Mica</td>
<td>12001-26-2</td>
<td>&lt; 5%</td>
</tr>
<tr>
<td>Clay</td>
<td>1332-58-7</td>
<td>&lt; 5%</td>
</tr>
<tr>
<td>Amorphous Silica</td>
<td>7631-86-9</td>
<td>&lt; 5%</td>
</tr>
<tr>
<td>Dye</td>
<td>NA</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

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

4. FIRST-AID MEASURES

Description of necessary first-aid measures

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

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

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

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

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

Indication of immediate medical attention and special treatment needed

Notes to Physicians
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

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

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

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

Personal precautions, protective equipment and emergency procedures
Wear appropriate protective clothing. Prevent skin and eye contact. Remove leaking container to a safe place. Ventilate the area.

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

Methods and materials for containment and cleaning up
Sweep up or vacuum and transfer into suitable containers for recovery or disposal.

7. HANDLING AND STORAGE

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

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure limits are listed below, if they exist.

Mica
ACGIH TLV: 3 mg/m³ TWA, measured as respirable fraction of the aerosol.
OSHA PEL: 20 mppcf, <1% crystalline silica

Calcium Carbonate
OSHA PEL: 15 mg/m³ TWA, total dust
5 mg/m³ TWA, respirable fraction

Clay as Kaolin, Respirable Fraction
ACGIH TLV: 2 mg/m³ TWA
OSHA PEL: 15 mg/m³ TWA, total dust
5 mg/m³ TWA, respirable fraction

Nuisance Dust Limit
OSHA PEL: 50 mppcf or 15 mg/m³ TWA, total dust
15 mppcf or 5 mg/m³ TWA, respirable fraction

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Non-Pressurized
Appearance

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Solid (powder)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Purple/Pink</td>
</tr>
</tbody>
</table>

Odor  
Odor Threshold  
pH  
Specific Gravity  
Boiling Range/Point (°C/F)  
Melting Point (°C/F)  
Flash Point (PMCC) (°C/F)  
Vapor Pressure  
Evaporation Rate (BuAc=1)  
Solubility in Water  
Vapor Density (Air = 1)  
VOC (g/l)  
VOC (%)  
Partition coefficient (n-octanol/water)  
Viscosity  
Auto-ignition Temperature  
Decomposition Temperature  
Upper explosive limit  
Lower explosive limit  
Flammability (solid, gas)  

Expellant
Appearance

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Compressed gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
</tbody>
</table>

Odor  
Odor Threshold  
pH  

No data available
SAFETY DATA SHEET
Purple K Dry Chemical
(Fire Extinguishing Agent - Pressurized and Non-pressurized)

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Gravity</td>
<td>0.075 lb/ft³ @70°F as vapor (Nitrogen)</td>
</tr>
<tr>
<td></td>
<td>0.1144 lb/ft³ (Carbon dioxide gas density)</td>
</tr>
<tr>
<td>Boiling Range/Point (°C/F)</td>
<td>-196°C/-321 °F(Nitrogen)</td>
</tr>
<tr>
<td></td>
<td>-78.5 °C /-109.3°F(Carbon Dioxide)</td>
</tr>
<tr>
<td>Melting Point (°C/F)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash Point (PMCC) (°C/F)</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>838 psig @70°F and 1 atmosphere(Carbon Dioxide)</td>
</tr>
<tr>
<td>Evaporation Rate (BuAc=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>VOC (g/l)</td>
<td>None</td>
</tr>
<tr>
<td>VOC (%)</td>
<td>None</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Lower explosive limit</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not flammable</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

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

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

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

Incompatible Materials
Strong oxidizing agents - strong acids - NaK alloy - NH₄H₂PO₄ - alkali or alkaline earth metals

Hazardous Decomposition Products
Oxides of carbon
11. TOXICOLOGICAL INFORMATION

**Acute Toxicity**
- **Potassium Bicarbonate:**
  - Oral LD50 (Rat) >5000 mg/kg
  - Dermal LD50 (Rabbit) >2000mg/kg
- **Calcium Carbonate:**
  - Oral LD50 (Rat) >2000 mg/kg
  - Dermal LD50 (Rabbit) >2000mg/kg
  - Inhalation LC50(rat) >3.0mg/l
- **Mica:**
  - Oral LD50 (Rat) >2000 mg/kg
- **Amorphous Silica:**
  - Oral LD50 (Rat) >5000 mg/kg
  - Dermal LD50 (Rabbit) >2000mg/kg
- **Dye:**
  - Oral LD50 (Rat) >2000 mg/kg (no deaths)
- **Clay:**
  - Oral LD50 (Rat) >5000 mg/kg
  - Dermal LD50 (Rabbit) >5000mg/kg
- **Nitrogen**
- **Carbon Dioxide**
- **Simple asphyxiant**

Specific Target Organ Toxicity (STOT) – single exposure
- **Potassium Bicarbonate:** Available data indicates this component is not expected to cause target organ effects after a single exposure.
- **Calcium Carbonate:** Available data indicates this component is not expected to cause target organ effects after a single exposure.
- **Nitrogen and Carbon Dioxide:** Exposure to nitrogen and carbon dioxide gas at high concentrations can cause suffocation by reducing oxygen available for breathing. Breathing very high concentrations can cause dizziness, shortness of breath, unconsciousness or asphyxiation.

Specific Target Organ Toxicity (STOT) – repeat exposure
- **Potassium Bicarbonate:** Available data indicates this component is not expected to cause target organ effects after repeat exposure.
- **Calcium Carbonate:** Available data indicates this component is not expected to cause target organ effects after repeat exposure.

**Serious Eye damage/Irritation**
- **Potassium Bicarbonate:** Not irritating (rabbit)
- **Calcium Carbonate:** Not irritating (rabbit)
- **Mica:** Not irritating (rabbit)

**Skin Corrosion/Irritation**
- **Potassium Bicarbonate:** Not irritatting (rabbit)
- **Calcium Carbonate:** Not irritatting (rabbit)
- **Mica:** Not irritatting (rabbit)
11. TOXICOLOGICAL INFORMATION

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

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

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

Reproductive Toxicity
Potassium Bicarbonate: Available data indicates this component is not expected to cause reproductive toxicity or birth defects.
Calcium Carbonate: Available data indicates this component is not expected to cause reproductive toxicity or birth defects.

Aspiration Hazard
Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Potassium Bicarbonate:
LC50 rainbow trout 1300 mg/l 96h
LC50 Ceriodaphnia dubia 630 mg/l 96h

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

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

Bioaccumulative Potential
Nitrogen and carbon dioxide occur naturally in the atmosphere

Other adverse effects
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

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

Safety Data Sheet information is intended to address a specific material and not various forms or states of containment.

**Special Precautions for Shipping:**
Individuals must be certified as Hazardous Material Shipper for all transportation modes. Pressurized Fire Extinguishers are considered a hazardous material by the US Department of Transportation and Transport Canada.

<table>
<thead>
<tr>
<th>DOT CFR 172.101 Data</th>
<th>Fire extinguishers, 2.2, UN1044</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN Proper Shipping Name</td>
<td>Fire extinguishers</td>
</tr>
<tr>
<td>UN Class</td>
<td>(2.2)</td>
</tr>
<tr>
<td>UN Number</td>
<td>UN1044</td>
</tr>
<tr>
<td>UN Packaging Group</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Classification for AIR</td>
<td>Consult current IATA Regulations prior to shipping by air.</td>
</tr>
<tr>
<td>Transportation (IATA)</td>
<td>Consult current IMDG Regulations prior to shipping by water.</td>
</tr>
</tbody>
</table>

When shipping via ground, portable fire extinguishers pressurized to less than 241 psi and of less than 1100 cubic inches in size meet the requirements of “Limited Quantity” as referenced in 49 CFR 173.309 (2010). There is no limited quantity designation for fire extinguishers when shipped by air or water.

This section is believed to be accurate at the time of preparation. It is not intended to be a complete statement or summary of the applicable laws, rules, or hazardous material regulations, and is subject to change. Users have the responsibility to confirm compliance with all laws, rules, and hazardous material regulations in effect at the time of shipping.

15. REGULATORY INFORMATION

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

**Canada DSL Inventory**
All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

**SARA Title III Sect. 311/312 Categorization: Pressurized**
Pressure hazard

**SARA Title III Sect. 311/312 Categorization: Non-pressurized**
None

**SARA Title III Sect. 313**
This product does not contain any chemicals that are listed in Section 313 at or above de minimis concentrations.
SAFETY DATA SHEET
Purple K Dry Chemical
(Fire Extinguishing Agent - Pressurized and Non-pressurized)

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 1
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards - None

HMIS Ratings
HMIS Code for Health - 1
HMIS Code for Flammability - 0
HMIS Code for Physical Hazard - 0
HMIS Code for Personal Protection - See Section 8
*Chronic

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

Revision Date: October 1, 2015
Replaces: April 10, 2015
Changes made: Update to Section 14

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

Prepared By: EnviroNet LLC.

The information and recommendations presented in this SDS are based on sources believed to be accurate. Badger Fire Protection assumes no liability for the accuracy or completeness of this information. It is the user's responsibility to determine the suitability of the material for their particular purposes. In particular, we make NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, with respect to such information, and we assume no liability resulting from its use. Users should ensure that any use or disposal of the material is in accordance with applicable Federal, State, and local laws and regulations.
1. IDENTIFICATION

| Product Name | Wet Chemical Solution  
|              | (Fire Extinguishing Agent, Pressurized and Non-pressurized) |
| Other Names  | AC-100, AC-250, Potassium Acetate, Class K |
| Recommended use of the chemical and restrictions on use |
| Identified uses | Fire Extinguishing Agent |
| Restrictions on use | Do not use on electrically energized equipment. Consult applicable fire protection codes. |
| Company Identification | Badger Fire Protection |
|                        | 944 Glenwood Station Lane, Suite 303 |
|                        | Charlottesville, VA 22901 |
|                        | USA |
| Customer Information Number | (434)-964-3200 |
| Emergency Telephone Number | (800) 424-9300 |
|                        | (703) 527-3887 (International) |
| Issue Date | October 1, 2015 |
| Supersedes Date | April 10, 2015 |

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

2. HAZARD IDENTIFICATION

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

| GHS Classification – Pressurized |
| Hazard Classification | Gas under pressure – Compressed gas |
| Label Elements |
| Hazard Symbols |

Signal Word: Warning

| Hazard Statements | Contents under pressure; may explode if heated. |
2. HAZARD IDENTIFICATION

Precautionary Statements
Prevention
None
Response
None
Storage
Protect from sunlight.
Store in well-ventilated place.
Disposal
None

GHS Classification: Non - pressurized

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

Label Elements
Hazard Symbols
None

Signal Word: None

Hazard Statements
None

Precautionary Statements
Prevention
None
Response
None
Storage
None
Disposal
None

Other Hazards
Possible electrocution hazard if used on electrically energized equipment.

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

<table>
<thead>
<tr>
<th>Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute oral toxicity</td>
<td>0%</td>
</tr>
<tr>
<td>Acute dermal toxicity</td>
<td>0%</td>
</tr>
<tr>
<td>Acute inhalation toxicity</td>
<td>0%</td>
</tr>
<tr>
<td>Acute aquatic toxicity</td>
<td>0%</td>
</tr>
</tbody>
</table>
3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Acetate</td>
<td>127-08-2</td>
<td>40 - 50%</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>50 - 60%</td>
</tr>
</tbody>
</table>

Note: Pressurized product uses nitrogen or compressed air as the expellant.

4. FIRST-AID MEASURES

Description of necessary first-aid measures

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

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

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

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

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

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

5. FIRE-FIGHTING MEASURES

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

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

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

Personal precautions, protective equipment and emergency procedures
Wear appropriate protective clothing. Prevent skin and eye contact. Remove leaking container to a safe place. Ventilate the area.

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

Methods and materials for containment and cleaning up
Contain and absorb using appropriate inert material. Transfer into suitable containers for recovery or disposal.

7. HANDLING AND STORAGE

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

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure limits are listed below, if they exist.

Potassium Acetate
None

Appropriate engineering controls
Use with adequate ventilation. If this product is used in a pressurized system, there should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

Individual protection measures
Respiratory Protection
Not normally required. In oxygen deficient atmospheres, use a self contained breathing apparatus, as an air purifying respirator will not provide protection.

Skin Protection
Gloves

Eye/Face Protection
Chemical goggles or safety glasses with side shields.

Body Protection
Normal work wear.
9. PHYSICAL AND CHEMICAL PROPERTIES

### Non-Pressurized

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Physical State</strong></td>
<td>Liquid</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>Clear or blue</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not applicable</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.19-1.24</td>
</tr>
<tr>
<td>Boiling Range/Point (°C/F)</td>
<td>100/212</td>
</tr>
<tr>
<td>Melting Point (°C/F)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash Point (PMCC) (°C/F)</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation Rate (BuAc=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Soluble</td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>VOC (g/l)</td>
<td>None</td>
</tr>
<tr>
<td>VOC (%)</td>
<td>None</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower explosive limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

### Expellant - Nitrogen

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Physical State</strong></td>
<td>Compressed gas</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.075 lb/ft³ @70°F as vapor</td>
</tr>
<tr>
<td>Boiling Range/Point (°C/F)</td>
<td>-196°C/-321 °F</td>
</tr>
<tr>
<td>Melting Point (°C/F)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash Point (PMCC) (°C/F)</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation Rate (BuAc=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>VOC (g/l)</td>
<td>None</td>
</tr>
<tr>
<td>VOC (%)</td>
<td>None</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>Not explosive</td>
</tr>
</tbody>
</table>
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower explosive limit</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not flammable</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

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

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

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

Incompatible Materials
Strong oxidizing agents – water reactive materials

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Potassium Acetate
Oral LD50 (Rat) 3250 mg/kg
Dermal LD50 (Rabbit) >20,000 mg/kg (analogous compound)
Inhalation LC50 (rat) >5.6 mg/l (analogous compound)

Nitrogen
Simple asphyxiant

Specific Target Organ Toxicity (STOT) – single exposure
Potassium Acetate: No data available
Nitrogen: Exposure to nitrogen gas at high concentrations can cause suffocation by reducing oxygen available for breathing. Breathing very high concentrations can cause dizziness, shortness of breath, unconsciousness or asphyxiation.

Specific Target Organ Toxicity (STOT) – repeat exposure
Potassium Acetate: No data available

Serious Eye damage/Irritation
Potassium Acetate: Not irritating (rabbit)

Skin Corrosion/Irritation
Potassium Acetate Not irritating (rabbit)
11. **TOXICOLOGICAL INFORMATION**

**Respiratory or Skin Sensitization**
**Potassium Acetate**: Available data indicates this component is not expected to cause skin sensitization. No data available for respiratory sensitization.

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

**Germ Cell Mutagenicity**
**Potassium Acetate**: Available data indicates this component is not expected to be mutagenic.

**Reproductive Toxicity**
**Potassium Acetate**: Available data indicates this component is not expected to cause reproductive toxicity or birth defects.

**Aspiration Hazard**
Not an aspiration hazard.

12. **ECOLOGICAL INFORMATION**

**Ecotoxicity**
**Potassium Acetate**:
- LC50 Zebrafish 1497 mg/l 96h
- EC50 Daphnia magna 420 mg/l 48h
- EC50 Mann diatom 500 mg/l 72hr

**Mobility in soil**
No relevant studies identified.

**Persistence/Degradability**
No relevant studies identified.

**Bioaccumulative Potential**
No relevant studies identified.

**Other adverse effects**
No relevant studies identified.

13. **DISPOSAL CONSIDERATIONS**

**Disposal Methods**
Dispose of container in accordance with all applicable local and national regulations.
SAFETY DATA SHEET
Wet Chemical Solution
(Fire Extinguishing Agent, Pressurized and Non-pressurized)

14. TRANSPORT INFORMATION

Safety Data Sheet information is intended to address a specific material and not various forms or states of containment.

Special Precautions for Shipping:
Individuals must be certified as Hazardous Material Shipper for all transportation modes. Pressurized Fire Extinguishers are considered a hazardous material by the US Department of Transportation and Transport Canada.

<table>
<thead>
<tr>
<th>DOT CFR 172.101 Data</th>
<th>UN Proper Shipping Name</th>
<th>UN Class</th>
<th>UN Number</th>
<th>UN Packaging Group</th>
<th>Classification for AIR</th>
<th>Transportation (IATA)</th>
<th>Classification for Water</th>
<th>Transport IMDG</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fire extinguishers, 2.2, UN1044</td>
<td>(2.2)</td>
<td>UN1044</td>
<td>Not applicable</td>
<td>Consult current IATA Regulations prior to shipping by air.</td>
<td></td>
<td>Consult current IMDG Regulations prior to shipping by water.</td>
<td></td>
</tr>
</tbody>
</table>

When shipping via ground, portable fire extinguishers pressurized to less than 241 psi and of less than 1100 cubic inches in size meet the requirements of “Limited Quantity” as referenced in 49 CFR 173.309 (2010). There is no limited quantity designation for fire extinguishers when shipped by air or water.

This section is believed to be accurate at the time of preparation. It is not intended to be a complete statement or summary of the applicable laws, rules, or hazardous material regulations, and is subject to change. Users have the responsibility to confirm compliance with all laws, rules, and hazardous material regulations in effect at the time of shipping.

15. REGULATORY INFORMATION

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

Canada DSL Inventory
All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

SARA Title III Sect. 311/312 Categorization: Pressurized
Pressure hazard
SARA Title III Sect. 311/312 Categorization: Non-pressurized
None

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

NFPA Ratings
- NFPA Code for Health: 1
- NFPA Code for Flammability: 0
- NFPA Code for Reactivity: 0
- NFPA Code for Special Hazards: None

HMIS Ratings
- HMIS Code for Health: 1
- HMIS Code for Flammability: 0
- HMIS Code for Physical Hazard: 0
- HMIS Code for Personal Protection: See Section 8

*Chronic

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

Revision Date: October 1, 2015
Replaces: April 10, 2015
Changes made: Update to Section 14

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

Prepared By: EnviroNet LLC.

The information and recommendations presented in this MSDS are based on sources believed to be accurate. Badger Fire Protection assumes no liability for the accuracy or completeness of this information. It is the user’s responsibility to determine the suitability of the material for their particular purposes. In particular, we make NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, with respect to such information, and we assume no liability resulting from its use. Users should ensure that any use or disposal of the material is in accordance with applicable Federal, State, and local laws and regulations.
1. IDENTIFICATION

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Wet Chemical Dry Charge (Fire Extinguishing Agent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Names</td>
<td>AC-100, AC-250, Potassium Acetate, Class K</td>
</tr>
<tr>
<td>Recommended use of the chemical and restrictions on use</td>
<td>Fire Extinguishing Agent</td>
</tr>
<tr>
<td>Identified uses</td>
<td>Consult applicable fire protection codes</td>
</tr>
<tr>
<td>Restrictions on use</td>
<td></td>
</tr>
<tr>
<td>Company Identification</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Badger Fire Protection</td>
</tr>
<tr>
<td></td>
<td>944 Glenwood Station Lane, Suite 303</td>
</tr>
<tr>
<td></td>
<td>Charlottesville, VA 22901</td>
</tr>
<tr>
<td></td>
<td>USA</td>
</tr>
<tr>
<td>Customer Information Number</td>
<td>(434)-964-3200</td>
</tr>
<tr>
<td>Emergency Telephone Number</td>
<td>(800) 424-9300  (703) 527-3887 (International)</td>
</tr>
<tr>
<td>CHEMTREC Number</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Issue Date</td>
<td>October 1, 2015</td>
</tr>
<tr>
<td>Supersedes Date</td>
<td>April 10, 2015</td>
</tr>
</tbody>
</table>

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

2. HAZARD IDENTIFICATION

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

Label Elements
Hazard Symbols
None

Signal Word: None

Hazard Statements
None

Precautionary Statements
Prevention
None
Response
None
Storage
None
Disposal
None
2. HAZARD IDENTIFICATION

Other Hazards
None

Specific Concentration Limits
The values listed below represent the percentages of ingredients of unknown toxicity.
Acute oral toxicity 0%
Acute dermal toxicity 0%
Acute inhalation toxicity 0%
Acute aquatic toxicity 0%

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a substance.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Acetate</td>
<td>127-08-2</td>
<td>~100%</td>
</tr>
</tbody>
</table>

4. FIRST-AID MEASURES

Description of necessary first-aid measures

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

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

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

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

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

Indication of immediate medical attention and special treatment needed

Notes to Physicians
Treat symptomatically.

5. FIRE - FIGHTING MEASURES

Suitable Extinguishing Media
This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a fire. Use extinguishing agent appropriate to other materials involved.
5. **FIRE - FIGHTING MEASURES**

Specific hazards arising from the chemical
None known

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

6. **ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures
Wear appropriate protective clothing. Prevent skin and eye contact.

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

Methods and materials for containment and cleaning up
Sweep up or vacuum and transfer into suitable containers for recovery or disposal.

7. **HANDLING AND STORAGE**

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

Conditions for safe storage
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**

Control parameters
Exposure limits are listed below, if they exist.

Potassium Acetate
None

Nuisance Dust Limit
OSHA PEL: 50 mppcf or 15 mg/m³ TWA, total dust
15 mppcf or 5 mg/m³ TWA, respirable fraction

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

Individual protection measures
Respiratory Protection
Not normally required. Use dust mask where dustiness is prevalent, or TLV is exceeded. In oxygen deficient atmospheres, use a self contained breathing apparatus, as an air purifying respirator will not provide protection.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Skin Protection
Gloves

Eye/Face Protection
Chemical goggles or safety glasses with side shields.

Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Solid (powder)</td>
</tr>
<tr>
<td>Physical State</td>
<td>Solid (powder)</td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not applicable</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.57</td>
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<tr>
<td>Boiling Range/Point (°C/F)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting Point (°C/F)</td>
<td>292/558</td>
</tr>
<tr>
<td>Flash Point (PMCC) (°C/F)</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation Rate (BuAc=1)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>200g/100g water</td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>VOC (g/l)</td>
<td>None</td>
</tr>
<tr>
<td>VOC (%)</td>
<td>None</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower explosive limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not flammable</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Reactivity
No data available.

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

Conditions to Avoid
Exposure to direct sunlight - contact with incompatible materials
10. STABILITY AND REACTIVITY

Incompatible Materials
Strong oxidizing agents

Hazardous Decomposition Products
Oxides of carbon - potassium

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Potassium Acetate
Oral LD50 (Rat) 3250 mg/kg
Dermal LD50 (Rabbit) >20,000 mg/kg (analogous compound)
Inhalation LC50(rat) >5.6 mg/l (analogous compound)

Specific Target Organ Toxicity (STOT) – single exposure
Potassium Acetate: No data available

Specific Target Organ Toxicity (STOT) – repeat exposure
Potassium Acetate: No data available

Serious Eye damage/Irritation
Potassium Acetate: Not irritating (rabbit)

Skin Corrosion/Irritation
Potassium Acetate Not irritating (rabbit)

Respiratory or Skin Sensitization
Potassium Acetate: Available data indicates this component is not expected to cause skin sensitization. No data available for respiratory sensitization.

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

Germ Cell Mutagenicity
Potassium Acetate: Available data indicates this component is not expected to be mutagenic.

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

Aspiration Hazard
Not an aspiration hazard.
12. ECOLOGICAL INFORMATION

Ecotoxicity
Potassium Acetate:
LC50 Zebrafish 1497 mg/l 96h
EC50 Daphnia magna 420 mg/l 48h
EC50 Mann diatom 500 mg/l 72hr

Mobility in soil
No relevant studies identified.

Persistence/Degradability
No relevant studies identified.

Bioaccumulative Potential
No relevant studies identified.

Other adverse effects
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Disposal Methods
Dispose of container in accordance with all applicable local and national regulations.

14. TRANSPORT INFORMATION

Safety Data Sheet information is intended to address a specific material and not various forms or states of containment.

Special Precautions for Shipping:
Individuals must be certified as Hazardous Material Shipper for all transportation modes.


<table>
<thead>
<tr>
<th>DOT CFR 172.101 Data</th>
<th>UN Proper Shipping Name</th>
<th>UN Class</th>
<th>UN Number</th>
<th>UN Packaging Group</th>
<th>Classification for AIR Transportation (IATA)</th>
<th>Classification for Water IMDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Regulated</td>
<td>Not Regulated</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Consult current IATA Regulations prior to shipping by air.</td>
<td>Consult current IMDG Regulations prior to shipping by water.</td>
</tr>
</tbody>
</table>

This section is believed to be accurate at the time of preparation. It is not intended to be a complete statement or summary of the applicable laws, rules, or hazardous material regulations, and is subject to change. Users have the responsibility to confirm compliance with all laws, rules, and hazardous material regulations in effect at the time of shipping.
15. REGULATORY INFORMATION

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

**Canada DSL Inventory**
All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

**SARA Title III Sect. 311/312 Categorization**
None

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

16. OTHER INFORMATION

**NFPA Ratings**
NFPA Code for Health - 1  
NFPA Code for Flammability - 0  
NFPA Code for Reactivity - 0  
NFPA Code for Special Hazards - None  

**HMIS Ratings**
HMIS Code for Health - 1  
HMIS Code for Flammability - 0  
HMIS Code for Physical Hazard - 0  
HMIS Code for Personal Protection - See Section 8  
*Chronic

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

Revision Date: October 1, 2015  
Replaces: April 10, 2015  
Changes made: Update to Section 14.
16. OTHER INFORMATION

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

Prepared By: EnviroNet LLC.

The information and recommendations presented in this SDS are based on sources believed to be accurate. Badger Fire Protection assumes no liability for the accuracy or completeness of this information. It is the user’s responsibility to determine the suitability of the material for their particular purposes. In particular, we make NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, with respect to such information, and we assume no liability resulting from its use. Users should ensure that any use or disposal of the material is in accordance with applicable Federal, State, and local laws and regulations.
SAFETY DATA SHEET
Nitrogen (Expellant)

1. IDENTIFICATION

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Nitrogen (Expellant)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Names</td>
<td>N₂</td>
</tr>
<tr>
<td>Recommended use of the chemical and restrictions on use</td>
<td>Fire Extinguishing Expellant</td>
</tr>
<tr>
<td>Identified uses</td>
<td></td>
</tr>
<tr>
<td>Restrictions on use</td>
<td>Consult applicable fire protection codes</td>
</tr>
<tr>
<td>Company Identification</td>
<td>Badger Fire Protection</td>
</tr>
<tr>
<td></td>
<td>944 Glenwood Station Lane, Suite 303</td>
</tr>
<tr>
<td></td>
<td>Charlottesville, VA 22901</td>
</tr>
<tr>
<td></td>
<td>USA</td>
</tr>
<tr>
<td>Customer Information Number</td>
<td>(434)-964-3200</td>
</tr>
<tr>
<td>Emergency Telephone Number</td>
<td>(800) 424-9300</td>
</tr>
<tr>
<td></td>
<td>(703) 527-3887 (International)</td>
</tr>
<tr>
<td>Issue Date</td>
<td>October 1, 2015</td>
</tr>
<tr>
<td>Supersedes Date</td>
<td>April 10, 2015</td>
</tr>
</tbody>
</table>

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

2. HAZARD IDENTIFICATION

Hazard Classification
Gas under pressure – compressed gas
Simple Asphyxiant

Label Elements

- Hazard Symbols

Signal Word: Warning

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

Precautionary Statements
Prevention
Do not enter confined space unless adequately ventilated.
In case of inadequate ventilation wear respiratory protection.

Revision Date: October 1, 2015
2. HAZARD IDENTIFICATION

Response
None

Storage
Keep container tightly closed.
Protect from sunlight and store in well-ventilated place.

Disposal
None

Other Hazards
Avoid direct inhalation of undiluted gas. Can cause suffocation by reducing oxygen available for breathing. Breathing very high concentrations can cause dizziness, shortness of breath, unconsciousness or asphyxiation.

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

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: \( \text{N}_2 \)
This product is a substance.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen</td>
<td>7727-37-9</td>
<td>100%</td>
</tr>
</tbody>
</table>

4. FIRST-AID MEASURES

Description of necessary first-aid measures

Eyes
No specific measures.

Skin
No specific measures.

Ingestion
Ingestion is not considered a potential route of exposure.

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

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

   Indication of immediate medical attention and special treatment needed

   **Notes to Physicians**
   Treat symptomatically.

5. **FIRE-FIGHTING MEASURES**

   **Suitable Extinguishing Media**
   All known extinguishing media can be used. Use extinguishing media appropriate for containers in the area.

   **Specific hazards arising from the chemical**
   Containers may explode in heat of fire.

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

6. **ACCIDENTAL RELEASE MEASURES**

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

   **Environmental Precautions**
   None - Material is a normal atmospheric gas.

   **Methods and materials for containment and cleaning up**
   None

7. **HANDLING AND STORAGE**

   **Precautions for safe handling**
   Containers 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 containers.

   **Conditions for safe storage**
   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**

   **Control parameters**
   Exposure limits are listed below, if they exist.

   **Nitrogen**
   None established
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Appropriate engineering controls
Use with adequate ventilation (natural or mechanical), especially in a confined space.

Individual protection measures
Respiratory Protection
Not normally required. In oxygen deficient atmospheres, use a self contained breathing apparatus, as an air purifying respirator will not provide protection.

Skin Protection
Use leather or sturdy work gloves when handling cylinders.

Eye/Face Protection
Chemical goggles or safety glasses with side shields.

Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td></td>
</tr>
<tr>
<td>Physical State</td>
<td>Compressed gas</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Gas Density</td>
<td>0.075 lb/ft³ @70°F as vapor</td>
</tr>
<tr>
<td>Boiling Range/Point (°C/F)</td>
<td>-196°C/-321 °F</td>
</tr>
<tr>
<td>Melting Point (°C/F)</td>
<td>-210°C/-346 °F</td>
</tr>
<tr>
<td>Flash Point (PMCC) (°C/F)</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation Rate (BuAc=1)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>0.2 g/l</td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>0.97</td>
</tr>
<tr>
<td>VOC (%)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Lower explosive limit</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not flammable</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Reactivity
Containers may rupture or explode if exposed to heat.
10. STABILITY AND REACTIVITY

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

Conditions to Avoid
Extremely high temperatures

Incompatible Materials
None known

Hazardous Decomposition Products
None

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Simple asphyxiant.

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

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

Serious Eye damage/Irritation
No data available.

Skin Corrosion/Irritation
No data available.

Respiratory or Skin Sensitization
No data available.

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

Germ Cell Mutagenicity
No data available.

Reproductive Toxicity
No data available.

Aspiration Hazard
Not an aspiration hazard.
12. ECOLOGICAL INFORMATION

Ecotoxicity
No data available

Mobility in soil
Nitrogen occurs naturally in the atmosphere.

Persistence/Degradability
Nitrogen occurs naturally in the atmosphere.

Bioaccumulative Potential
Nitrogen occurs naturally in the atmosphere.

Other adverse effects
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORT INFORMATION

Safety Data Sheet information is intended to address a specific material and not various forms or states of containment.

Special Precautions for Shipping:
Individuals must be certified as Hazardous Material Shipper for all transportation modes. Pressurized Fire Extinguishers are considered a hazardous material by the US Department of Transportation and Transport Canada.

Bulk Shipments:
DOT CFR 172.101 Data
UN Proper Shipping Name: Nitrogen, compressed
UN Class: (2.2) Non-Flammable Gas
UN Number: UN1066
UN Packaging Group: Not Applicable
Classification for AIR Transportation: Consult current IATA Regulations prior to shipping by air.
Classification for Water Transportation (IMDG): Consult current IMDG Regulations prior to shipping by water.

Fire Extinguishers:
DOT CFR 172.101 Data
UN Proper Shipping Name: Fire extinguishers
UN Class: (2.2)
UN Number: UN1044
UN Packaging Group: Not applicable
Classification for AIR Transportation (IATA): Consult current IATA Regulations prior to shipping by air.
14. TRANSPORT INFORMATION

Classification for Water          Consult current IMDG Regulations prior to shipping by water.
Transport IMDG

This section is believed to be accurate at the time of preparation. It is not intended to be a complete statement or summary of the applicable laws, rules, or hazardous material regulations, and is subject to change. Users have the responsibility to confirm compliance with all laws, rules, and hazardous material regulations in effect at the time of shipping.

15. REGULATORY INFORMATION

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

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

SARA Title III Sect. 311/312 Categorization  
Pressure Hazard

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

16. OTHER INFORMATION

NFPA Ratings  
NFPA Code for Health - 0
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards – None

HMIS Ratings  
HMIS Code for Health - 0
HMIS Code for Flammability - 0
HMIS Code for Physical Hazard - 0
HMIS Code for Personal Protection - See Section 8
*Chronic

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

Revision Date: October 1, 2015
Replaces: April 10, 2015
Changes made: Update to Section 14.

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

Prepared By: EnviroNet LLC.

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SAFETY DATA SHEET
Karbalo
(Fire Extinguishing Agent Pressurized and Non-pressurized)

1. IDENTIFICATION

   Product Name  Karbalo (Fire Extinguishing Agent, Pressurized and Non-pressurized)
   Other Names  Potassium Carbonate, Range Guard System Wet Chemical

   Recommended use of the chemical and restrictions on use
     Identified uses  Fire Extinguishing Agent
     Restrictions on use  Do not use on electrically energized equipment. Consult applicable fire protection codes.

   Company Identification  Badger Fire Protection
                            944 Glenwood Station Lane, Suite 303
                            Charlottesville, VA  22901
                            USA

   Customer Information Number  (434)-964-3200
   Emergency Telephone Number
     CHEMTREC Number  (800) 424-9300
                       (703) 527-3887 (International)

   Issue Date  October 1, 2015
   Supersedes Date  April 10, 2015

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

2. HAZARD IDENTIFICATION

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

   GHS Classification – Pressurized

   Hazard Classification
     Serious eye damage/eye irritation: Category 2A
     Specific Target Organ Toxicity (STOT) – single exposure: Category 3
     Gas under pressure – Compressed gas

   Label Elements
     Hazard Symbols

     Signal Word: Warning
2. HAZARD IDENTIFICATION

Hazard Statements
Causes serious eye irritation.
May cause respiratory irritation.
Contents under pressure; may explode if heated.

Precautionary Statements

Prevention
Wash hands thoroughly after handling.
Wear eye protection/face protection.
Avoid breathing mists or spray.
Use only outdoors or in a well-ventilated area.

Response
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists, get medical advice/attention.
If inhaled: Remove to fresh air and keep at rest in a position comfortable for breathing.
Call a poison center or doctor if you feel unwell.

Storage
Store locked up.
Protect from sunlight and store in well-ventilated place.
Keep container tightly closed.

Disposal
Dispose of contents/container in accordance with local regulation.

GHS Classification: Non-pressurized

Hazard Classification
Serious eye damage/eye irritation: Category 2A
Specific Target Organ Toxicity (STOT) – single exposure: Category 3

Label Elements
Hazard Symbols

Signal Word: Warning

Hazard Statements
Causes serious eye irritation.
May cause respiratory irritation.
2. HAZARD IDENTIFICATION

Precautionary Statements
Prevention
Wash hands thoroughly after handling.
Wear eye protection/face protection.
Avoid breathing mists or spray.
Use only outdoors or in a well-ventilated area.
Response
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists, get medical advice/attention.
If inhaled: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor if you feel unwell.
Storage
Store locked up.
Store in a well-ventilated place. Keep container tightly closed.
Disposal
Dispose of contents/container in accordance with local regulation.

Other Hazards
Possible electrocution hazard if used on electrically energized equipment.

Specific Concentration Limits
The values listed below represent the percentages of ingredients of unknown toxicity.
Acute oral toxicity 0%
Acute dermal toxicity 0%
Acute inhalation toxicity 0%
Acute aquatic toxicity 0%

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>50 – 60%</td>
</tr>
<tr>
<td>Potassium Carbonate</td>
<td>584-08-7</td>
<td>40 – 50%</td>
</tr>
</tbody>
</table>

Note: Pressurized product uses nitrogen as the expellant.

4. FIRST-AID MEASURES

Description of necessary first-aid measures
Eyes
Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.
4. FIRST-AID MEASURES

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

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

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

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

Indication of immediate medical attention and special treatment needed

Notes to Physicians
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

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

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

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Wear appropriate protective clothing. Prevent skin and eye contact. Remove leaking container to a safe place. Ventilate the area.

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

Methods and materials for containment and cleaning up
Contain and absorb using appropriate inert material and transfer into suitable containers for recovery or disposal.
SAFETY DATA SHEET
Karbaloy
(Fire Extinguishing Agent Pressurized and Non-pressurized)

7. HANDLING AND STORAGE

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

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure limits are listed below, if they exist.

Potassium Carbonate
None assigned.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Agent - Karbaloy

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Clear</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>&gt;11</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>~1.4</td>
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<tr>
<td>Boiling Range/Point (°C/F)</td>
<td>108.9°C/228°F</td>
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<tr>
<td>Melting Point (°C/F)</td>
<td>No data available</td>
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<tr>
<td>Flash Point (PMCC) (°C/F)</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available</td>
</tr>
</tbody>
</table>

Revision Date: October 1, 2015
## PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaporation Rate (BuAc=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Soluble</td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>VOC (g/l)</td>
<td>None</td>
</tr>
<tr>
<td>VOC (%)</td>
<td>None</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosive limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

### Expellant - Nitrogen

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Compressed gas</td>
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<tr>
<td>Color</td>
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</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.075 lb/ft³ @ 70°F as vapor</td>
</tr>
<tr>
<td>Boiling Range/Point (°C/F)</td>
<td>-196°C/-321°F</td>
</tr>
<tr>
<td>Melting Point (°C/F)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash Point (°C/F)</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation Rate (BuAc=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>No data available</td>
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<tr>
<td>Vapor Density (Air = 1)</td>
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<tr>
<td>VOC (g/l)</td>
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</tr>
<tr>
<td>VOC (%)</td>
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<tr>
<td>Partition coefficient (n-octanol/water)</td>
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<tr>
<td>Viscosity</td>
<td>Not applicable</td>
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<tr>
<td>Auto-ignition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Lower explosive limit</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not flammable</td>
</tr>
</tbody>
</table>

## STABILITY AND REACTIVITY

### Reactivity

Pressurized containers may rupture or explode if exposed to heat.

### Chemical Stability

Stable under normal conditions.
10. STABILITY AND REACTIVITY

Possibility of hazardous reactions
Hazardous polymerization will not occur.

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

Incompatible Materials
Acids - ammonium compounds - metals - water reactive materials

Hazardous Decomposition Products
Oxides of carbon

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Potassium Carbonate
Oral LD50 (Rat) >2000 mg/kg
Dermal LD50 (Rabbit) >2000mg/kg
Inhalation LC50 (Rat) >4.96 mg/l
Nitrogen
Simple asphyxiant

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

Specific Target Organ Toxicity (STOT) – repeat exposure
Potassium Carbonate: No relevant studies identified.

Serious Eye damage/Irritation
Potassium Carbonate: Irritating to eyes in animal studies.

Skin Corrosion/Irritation
Karbalooy: Slightly irritating (Primary Dermal Irritation Study)

Respiratory or Skin Sensitization
Available data indicates this product is not expected to cause skin sensitization.

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

Germ Cell Mutagenicity
Available data indicates this product is not expected to be mutagenic.
11. **TOXICOLOGICAL INFORMATION**

Reproductive Toxicity
Potassium Carbonate: No relevant studies identified.

Aspiration Hazard
Not an aspiration hazard.

12. **ECOLOGICAL INFORMATION**

Ecotoxicity
Potassium Carbonate
LC50 Bluegill sunfish 230mg/l 96h
EC50 Daphnia pulex 200mg/l 48h

Mobility in soil
No relevant studies identified.

Persistence/Degradability
No relevant studies identified.

Bioaccumulative Potential
No relevant studies identified.

Other adverse effects
No relevant studies identified.

13. **DISPOSAL CONSIDERATIONS**

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

14. **TRANSPORT INFORMATION**

Safety Data Sheet information is intended to address a specific material and not various forms or states of containment.

Special Precautions for Shipping:
Individuals must be certified as Hazardous Material Shipper for all transportation modes.
Pressurized Fire Extinguishers are considered a hazardous material by the US Department of Transportation and Transport Canada.

**DOT CFR 172.101 Data**
<table>
<thead>
<tr>
<th>DOT Class</th>
<th>UN Number</th>
<th>UN Name</th>
<th>UN Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2.2)</td>
<td>UN1044</td>
<td>Fire Extinguishers</td>
<td>Fire extinguishers</td>
</tr>
</tbody>
</table>

Revision Date: October 1, 2015
14. TRANSPORT INFORMATION

| Classification for AIR Classification for Water | Consult current IATA Regulations prior to shipping by air. |
| Transportation (IATA) Transport IMDG | Consult current IMDG Regulations prior to shipping by water. |

When shipping via ground, portable fire extinguishers pressurized to less than 241 psi and of less than 1100 cubic inches in size meet the requirements of “Limited Quantity” as referenced in 49 CFR 173.309 (2010). There is no limited quantity designation for fire extinguishers when shipped by air or water.

This section is believed to be accurate at the time of preparation. It is not intended to be a complete statement or summary of the applicable laws, rules, or hazardous material regulations, and is subject to change. Users have the responsibility to confirm compliance with all laws, rules, and hazardous material regulations in effect at the time of shipping.

15. REGULATORY INFORMATION

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

Canada DSL Inventory
All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

SARA Title III Sect. 311/312 Categorization: Pressurized
Immediate (Acute) Health Hazard, Pressure hazard
SARA Title III Sect. 311/312 Categorization: Non-pressurized
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 - 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 Physical Hazard - 0
HMIS Code for Personal Protection - See Section 8
*Chronic
16. OTHER INFORMATION

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

Revision Date: October 1, 2015
Replaces: April 10, 2015
Changes made: Update to Section 14.

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

Prepared By: EnviroNet LLC.

The information and recommendations presented in this SDS are based on sources believed to be accurate. Badger Fire Protection assumes no liability for the accuracy or completeness of this information. It is the user's responsibility to determine the suitability of the material for their particular purposes. In particular, we make NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, with respect to such information, and we assume no liability resulting from its use. Users should ensure that any use or disposal of the material is in accordance with applicable Federal, State, and local laws and regulations.
1. IDENTIFICATION

Product Name: Kidde 90 Multi-Purpose ABC Dry Chemical (Fire Extinguishing Agent, Pressurized and Non-pressurized)

Other Names: ABC, Ammonium Phosphate, Monoammonium Phosphate, Tri-Class

Recommended use of the chemical and restrictions on use

Identified uses: Fire Extinguishing Agent

Restrictions on use: Consult applicable fire protection codes

Company Identification: Badger Fire Protection
944 Glenwood Station Lane, Suite 303
Charlottesville, VA 22901
USA

Customer Information Number: (434)-964-3200

Emergency Telephone Number: (800) 424-9300
(703) 527-3887 (International)

Issue Date: October 1, 2015

Supersedes Date: April 10, 2015

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

2. HAZARD IDENTIFICATION

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

GHS Classification – Pressurized

Hazard Classification:
Gas under pressure – Compressed gas

Label Elements
Hazard Symbols

Signal Word: Warning

Hazard Statements:
Contents under pressure; may explode if heated.
HAZARD IDENTIFICATION

Precautionary Statements
Prevention
None
Response
None
Storage
Protect from sunlight.
Store in well-ventilated place.
Disposal
None

GHS Classification: Non - pressurized

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

Label Elements
Hazard Symbols
None

Signal Word: None

Hazard Statements
None

Precautionary Statements
Prevention
None
Response
None
Storage
None
Disposal
None

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

Specific Concentration Limits
The values listed below represent the percentages of ingredients of unknown toxicity.
Acute oral toxicity  < 10%
Acute dermal toxicity  < 10%
Acute inhalation toxicity  < 10%
Acute aquatic toxicity  < 10%
3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monoammonium Phosphate</td>
<td>7722-76-1</td>
<td>85 - 95%</td>
</tr>
<tr>
<td>Ammonium Sulfate</td>
<td>7783-20-2</td>
<td>&lt; 5%</td>
</tr>
<tr>
<td>Mica</td>
<td>12001-26-2</td>
<td>&lt; 5%</td>
</tr>
<tr>
<td>Clay</td>
<td>1332-58-7</td>
<td>&lt; 5%</td>
</tr>
<tr>
<td>Amorphous Silica</td>
<td>7631-86-9</td>
<td>&lt; 5%</td>
</tr>
<tr>
<td>Dye</td>
<td>NA</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

Note: Pressurized product uses nitrogen or compressed air as the expellant.

4. FIRST- AID MEASURES

Description of necessary first-aid measures

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

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

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

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

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

Indication of immediate medical attention and special treatment needed

Notes to Physicians
Treat symptomatically.

5. FIRE - FIGHTING MEASURES

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

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

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

Personal precautions, protective equipment and emergency procedures
Wear appropriate protective clothing. Prevent skin and eye contact. Remove leaking container to a safe place. Ventilate the area.

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

Methods and materials for containment and cleaning up
Sweep up or vacuum and transfer into suitable containers for recovery or disposal.

7. HANDLING AND STORAGE

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

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure limits are listed below, if they exist.

Mica
ACGIH TLV: 3 mg/m³ TWA, measured as respirable fraction of the aerosol.
OSHA PEL: 20 mppcf, <1% crystalline silica

Clay as Kaolin, Respirable Fraction
ACGIH TLV: 2 mg/m³ TWA
OSHA PEL: 15 mg/m³ TWA, total dust
5 mg/m³ TWA, respirable fraction

Nuisance Dust Limit
OSHA PEL: 50 mppcf or 15 mg/m³ TWA, total dust
15 mppcf or 5 mg/m³ TWA, respirable fraction

Appropriate engineering controls
Use with adequate ventilation. If this product is used in a pressurized system, there should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

Individual protection measures
Respiratory Protection
Not normally required. Use dust mask where dustiness is prevalent, or TLV is exceeded. In oxygen deficient atmospheres, use a self contained breathing apparatus, as an air purifying respirator will not provide protection.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Skin Protection
Gloves

Eye/Face Protection
Chemical goggles or safety glasses with side shields.

Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Non-Pressurized

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Solid (powder)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Pale Yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling Range/Point (°C/F)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Melting Point (°C/F)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash Point (PMCC) (°C/F)</td>
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</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation Rate (BuAc=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>VOC (g/l)</td>
<td>None</td>
</tr>
<tr>
<td>VOC (%)</td>
<td>None</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosive limit</td>
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</tr>
<tr>
<td>Flammability (solid, gas)</td>
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</tr>
</tbody>
</table>

Expellant - Nitrogen

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Compressed gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.075 lb/ft³ @70°F as vapor</td>
</tr>
<tr>
<td>Boiling Range/Point (°C/F)</td>
<td>-196°C/-321 °F</td>
</tr>
<tr>
<td>Melting Point (°C/F)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash Point (PMCC) (°C/F)</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation Rate (BuAc=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>No data available</td>
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</tbody>
</table>
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>Not applicable</td>
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<tr>
<td>VOC (g/l)</td>
<td>None</td>
</tr>
<tr>
<td>VOC (%)</td>
<td>None</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Lower explosive limit</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not flammable</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

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

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

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

Incompatible Materials
Strong oxidizing agents - strong acids - sodium hypochlorite

Hazardous Decomposition Products
Oxides of carbon - ammonia - oxides of phosphorus - nitrogen oxides

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Monoammonium Phosphate:
Oral LD50 (Rat) 5750 mg/kg
Dermal LD50 (Rabbit) >5000mg/kg
Inhalation LC50 (Rat) 5.1mg/l

Ammonium Sulfate:
Oral LD50 (Rat) 4250 mg/kg
Dermal LD50 (Rabbit) >2000mg/kg

Mica:
Oral LD50 (Rat) >2000 mg/kg

Amorphous Silica:
Oral LD50 (Rat) >5000 mg/kg
Dermal LD50 (Rabbit) >2000mg/kg
11. TOXICOLOGICAL INFORMATION

Clay:
Oral LD50 (Rat) >5000 mg/kg
Dermal LD50 (Rabbit) >5000mg/kg
Nitrogen: Simple asphyxiant

Specific Target Organ Toxicity (STOT) – single exposure
Monoammonium Phosphate: Available data indicates this component is not expected to cause target organ effects after a single exposure.
Ammonium Sulfate: Available data indicates this component is not expected to cause target organ effects after a single exposure.
Nitrogen: Exposure to nitrogen gas at high concentrations can cause suffocation by reducing oxygen available for breathing. Breathing very high concentrations can cause dizziness, shortness of breath, unconsciousness or asphyxiation.

Specific Target Organ Toxicity (STOT) – repeat exposure
Monoammonium Phosphate: Available data indicates this component is not expected to cause target organ effects after repeat exposure.
Ammonium Sulfate: Available data indicates this component is not expected to cause target organ effects after repeat exposure.

Serious Eye damage/Irritation
Monoammonium Phosphate: Not irritating (rabbit)
Ammonium Sulfate: Not irritating (rabbit)
Mica: Not irritating (rabbit)

Skin Corrosion/Irritation
Monoammonium Phosphate: Not irritating in rabbit test study
Ammonium Sulfate: Not irritating (rabbit)
Mica: Not irritating (rabbit)

Respiratory or Skin Sensitization
Monoammonium Phosphate: Not skin sensitizing based on test (Mouse local lymphnode assay (LLNA)) on an analogous compound
Ammonium Sulfate: Not sensitizing in Guinea pig maximisation test

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

Germ Cell Mutagenicity
Monoammonium Phosphate: Not mutagenic in the mouse lymphoma cells in mammalian cell gene mutation assay
Ammonium Sulfate: Negative results in Ames Test, in vitro mammalian chromosome aberration test, and mammalian cell gene mutation assay.
11. TOXICOLOGICAL INFORMATION

Reproductive Toxicity
Monoammonium Phosphate: Available data indicates this component is not expected to cause reproductive toxicity or birth defects.
Ammonium Sulfate: Available data indicates this component is not expected to cause reproductive toxicity or birth defects.

Aspiration Hazard
Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Monoammonium Phosphate:
LC50 rainbow trout >100 mg/l 96h
LC50 water flea 1790 mg/l 72h (similar substance)

Mobility in soil
No relevant studies identified.

Persistence/Degradability
No relevant studies identified.

Bioaccumulative Potential
No relevant studies identified.

Other adverse effects
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Disposal Methods
Dispose of container in accordance with all applicable local and national regulations.

14. TRANSPORT INFORMATION

Safety Data Sheet information is intended to address a specific material and not various forms or states of containment.

Special Precautions for Shipping:
Individuals must be certified as Hazardous Material Shipper for all transportation modes. Pressurized Fire Extinguishers are considered a hazardous material by the US Department of Transportation and Transport Canada.

DOT CFR 172.101 Data

<table>
<thead>
<tr>
<th>DOT CFR 172.101 Data</th>
<th>Fire extinguishers, 2.2, UN1044</th>
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<tr>
<td>UN Proper Shipping Name</td>
<td>Fire extinguishers</td>
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<tr>
<td>UN Class</td>
<td>(2.2)</td>
</tr>
<tr>
<td>UN Number</td>
<td>UN1044</td>
</tr>
<tr>
<td>UN Packaging Group</td>
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</tr>
<tr>
<td>Classification for AIR</td>
<td>Consult current IATA Regulations prior to shipping by air.</td>
</tr>
<tr>
<td>Transportation (IATA)</td>
<td></td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET
Kidde 90 Multi-Purpose ABC Dry Chemical
(Fire Extinguishing Agent, Pressurized and Non-pressurized)

14. TRANSPORT INFORMATION

Classification for Water Transport IMDG
Consult current IMDG Regulations prior to shipping by water.

When shipping via ground, portable fire extinguishers pressurized to less than 241 psi and of less than 1100 cubic inches in size meet the requirements of “Limited Quantity” as referenced in 49 CFR 173.309 (2010). There is no limited quantity designation for fire extinguishers when shipped by air or water.

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15. REGULATORY INFORMATION

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

Canada DSL Inventory
All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

SARA Title III Sect. 311/312 Categorization: Pressurized
Pressure hazard
SARA Title III Sect. 311/312 Categorization: Non-pressurized
None

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

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 1
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards - None

HMIS Ratings
HMIS Code for Health - 1
HMIS Code for Flammability - 0
HMIS Code for Physical Hazard - 0
HMIS Code for Personal Protection - See Section 8
*Chronic
16. OTHER INFORMATION

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

Revision Date: October 1, 2015
Replaces: April 10, 2015
Changes made: Update to Section 14.

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

Prepared By: EnviroNet LLC.

The information and recommendations presented in this SDS are based on sources believed to be accurate. Badger Fire Protection assumes no liability for the accuracy or completeness of this information. It is the user's responsibility to determine the suitability of the material for their particular purposes. In particular, we make NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, with respect to such information, and we assume no liability resulting from its use. Users should ensure that any use or disposal of the material is in accordance with applicable Federal, State, and local laws and regulations.
SAFETY DATA SHEET
Regular BCM Dry Chemical
(Fire Extinguishing Agent - Pressurized and Non-pressurized)

1. IDENTIFICATION

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Regular BCM Dry Chemical (Fire Extinguishing Agent Pressurized and Non-pressurized)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Names</td>
<td>Regular, Stearated B:C, Sodium Bicarbonate, BCM</td>
</tr>
<tr>
<td>Recommended use of the chemical and restrictions on use</td>
<td>Fire Extinguishing Agent</td>
</tr>
<tr>
<td>Identified uses</td>
<td>Consult applicable fire protection codes</td>
</tr>
<tr>
<td>Restrictions on use</td>
<td>Badger Fire Protection</td>
</tr>
<tr>
<td>Company Identification</td>
<td>944 Glenwood Station Lane, Suite 303</td>
</tr>
<tr>
<td>Charlottesville, VA  22901 USA</td>
<td></td>
</tr>
</tbody>
</table>

Customer Information Number (434)-964-3200
Emergency Telephone Number (800) 424-9300
CHEMTREC Number (703) 527-3887 (International)
Issue Date October 1, 2015
Supersedes Date April 10, 2015

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

2. HAZARD IDENTIFICATION

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

GHS Classification – Pressurized

Hazard Classification
Gas under pressure – Compressed gas

Label Elements
Hazard Symbols

Signal Word: Warning

Hazard Statements
Contents under pressure; may explode if heated.
2. HAZARD IDENTIFICATION

Precautionary Statements
Prevention
None
Response
None
Storage
Protect from sunlight.
Store in well-ventilated place.
Disposal
None

GHS Classification: Non - pressurized

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

Label Elements
Hazard Symbols
None

Signal Word: None

Hazard Statements
None

Precautionary Statements
Prevention
None
Response
None
Storage
None
Disposal
None

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

Specific Concentration Limits
The values listed below represent the percentages of ingredients of unknown toxicity.
Acute oral toxicity < 10%
Acute dermal toxicity < 10%
Acute inhalation toxicity < 10%
Acute aquatic toxicity < 10%
SAFETY DATA SHEET
Regular BCM Dry Chemical
(Fire Extinguishing Agent - Pressurized and Non-pressurized)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Regular, Stearated B:C, Sodium Bicarbonate, BCM
This product is a mixture.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Bicarbonate</td>
<td>144-55-8</td>
<td>85 - 95%</td>
</tr>
<tr>
<td>Mica</td>
<td>12001-26-2</td>
<td>1 - 5%</td>
</tr>
<tr>
<td>Clay</td>
<td>8031-18-3</td>
<td>1 - 5%</td>
</tr>
<tr>
<td>Calcium Stearate</td>
<td>66071-81-6</td>
<td>1 - 5%</td>
</tr>
</tbody>
</table>

Note: Pressurized product uses nitrogen or compressed air as the expellant.

4. FIRST-AID MEASURES

Description of necessary first-aid measures

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

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

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

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

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

Indication of immediate medical attention and special treatment needed

Notes to Physicians
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

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

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

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

Personal precautions, protective equipment and emergency procedures
Wear appropriate protective clothing. Prevent skin and eye contact. Remove leaking container to a safe place. Ventilate the area.

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

Methods and materials for containment and cleaning up
Sweep up or vacuum and transfer into suitable containers for recovery or disposal.

7. HANDLING AND STORAGE

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

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure limits are listed below, if they exist.

Mica
ACGIH TLV: 3 mg/m³ 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/m³ TWA, total dust
15 mppcf or 5 mg/m³ TWA, respirable fraction

Appropriate engineering controls
Use with adequate ventilation. If this product is used in a pressurized system, there should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

Individual protection measures
Respiratory Protection
Not normally required. Use dust mask where dustiness is prevalent, or TLV is exceeded. In oxygen deficient atmospheres, use a self contained breathing apparatus, as an air purifying respirator will not provide protection.

Skin Protection
Gloves

Eye/Face Protection
Chemical goggles or safety glasses with side shields.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Agent – Regular BCM Dry Chemical
Appearance

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid (powder)</td>
<td>White</td>
</tr>
</tbody>
</table>

Odor Odorless
Odor Threshold No data available
pH Not applicable
Specific Gravity ~2.3
Boiling Range/Point (°C/F) Not applicable
Melting Point (°C/F) No data available
Flash Point (PMCC) (°C/F) Not flammable
Vapor Pressure No data available
Evaporation Rate (BuAc=1) No data available
Solubility in Water 16.4g/100g
Vapor Density (Air = 1) Not applicable
VOC (g/l) None
VOC (%) None
Partition coefficient (n-octanol/water) No data available
Viscosity No data available
Auto-ignition Temperature No data available
Decomposition Temperature No data available
Upper explosive limit No data available
Lower explosive limit No data available
Flammability (solid, gas) No data available

Expellant - Nitrogen
Appearance

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressed gas</td>
<td>Colorless</td>
</tr>
</tbody>
</table>

Odor None
Odor Threshold No data available
pH Not applicable
Specific Gravity 0.075 lb/ft³ @70°F as vapor
Boiling Range/Point (°C/F) -196°C/-321 °F
Melting Point (°C/F) No data available
Flash Point (PMCC) (°C/F) Not flammable
Vapor Pressure 838 psig @70°F and 1 atmosphere(Carbon Dioxide)
Evaporation Rate (BuAc=1) No data available
Solubility in Water No data available
Vapor Density (Air = 1) Not applicable
VOC (g/l) None
VOC (%) None
SAFETY DATA SHEET
Regular BCM Dry Chemical
(Fire Extinguishing Agent - Pressurized and Non-pressurized)

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Lower explosive limit</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not flammable</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

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

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

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

Incompatible Materials
Strong acids

Hazardous Decomposition Products
Oxides of carbon

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Sodium Bicarbonate:
Oral LD50 (Rat) >4000 mg/kg
Inhalation LC50(rat) >4.74 mg/l
Mica:
Oral LD50 (Rat) >2000 mg/kg
Nitrogen
Simple asphyxiant

Specific Target Organ Toxicity (STOT) – single exposure
Sodium Bicarbonate: Available data indicates this component is not expected to cause target organ effects after a single exposure
Nitrogen: Exposure to nitrogen gas at high concentrations can cause suffocation by reducing oxygen available for breathing. Breathing very high concentrations can cause dizziness, shortness of breath, unconsciousness or asphyxiation.

Specific Target Organ Toxicity (STOT) – repeat exposure
Sodium Bicarbonate: Available data indicates this component is not expected to cause target organ effects after repeat exposure.
11. TOXICOLOGICAL INFORMATION

Serious Eye damage/Irritation
Sodium Bicarbonate: Slightly irritating (rabbit)
Mica: Not irritating (rabbit)

Skin Corrosion/Irritation
Sodium Bicarbonate: Slightly irritating (rabbit)
Mica: Not irritating (rabbit)

Respiratory or Skin Sensitization
No relevant studies identified.

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

Germ Cell Mutagenicity
Sodium Bicarbonate: Negative test results in animal studies.

Reproductive Toxicity
Sodium Bicarbonate: Available data indicates this component is not expected to cause reproductive toxicity or birth defects.

Aspiration Hazard
Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Sodium Bicarbonate:
LC50 Lepomis macrochirus 7100 mg/l 96h
EC50 Daphnia magna 4100 mg/l 48h

Mobility in soil
No relevant studies identified.

Persistence/Degradability
No relevant studies identified.

Bioaccumulative Potential
No relevant studies identified.

Other adverse effects
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Disposal Methods
Dispose of container in accordance with all applicable local and national regulations.
14. TRANSPORT INFORMATION

Safety Data Sheet information is intended to address a specific material and not various forms or states of containment.

Special Precautions for Shipping:
Individuals must be certified as Hazardous Material Shipper for all transportation modes. Pressurized Fire Extinguishers are considered a hazardous material by the US Department of Transportation and Transport Canada.

DOT CFR 172.101 Data
UN Proper Shipping Name: Fire extinguishers
UN Class: (2.2)
UN Number: UN1044
UN Packaging Group: Not applicable
Classification for AIR: Consult current IATA Regulations prior to shipping by air.
Classification for Water: Consult current IMDG Regulations prior to shipping by water.

When shipping via ground, portable fire extinguishers pressurized to less than 241 psi and of less than 1100 cubic inches in size meet the requirements of “Limited Quantity” as referenced in 49 CFR 173.309 (2010). There is no limited quantity designation for fire extinguishers when shipped by air or water.

This section is believed to be accurate at the time of preparation. It is not intended to be a complete statement or summary of the applicable laws, rules, or hazardous material regulations, and is subject to change. Users have the responsibility to confirm compliance with all laws, rules, and hazardous material regulations in effect at the time of shipping.

15. REGULATORY INFORMATION

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

Canada DSL Inventory
All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

SARA Title III Sect. 311/312 Categorization: Pressurized
Pressure hazard
SARA Title III Sect. 311/312 Categorization: Non-pressurized
None

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

NFPA Ratings
NFPA Code for Health - 1
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards - None

HMIS Ratings
HMIS Code for Health - 1
HMIS Code for Flammability - 0
HMIS Code for Physical Hazard - 0
HMIS Code for Personal Protection - See Section 8
*Chronic

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

Revision Date: October 1, 2015
Replaces: April 10, 2015
Changes made: Updated to GHS Classification.

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

Prepared By: EnviroNet LLC.

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