



SAFETY DATA SHEET

Section 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: ABC Dry Chemical Fire Extinguishant
Other Identifiers: Multi-purpose Dry Chemical
Product Code(s): CH550, F15, F18
Model Code(s) for Extinguishers: 411, 417, 419, 423, 424, 425, 441, 443, 450, 456, 461, 464, 467, 470, 473, 476, 481, 487, 488, 491, 495, 500, 564, 567, 573, 581, 589, 592, 594, 668, 692, 720, 760, 763, 781.
Recommended Use: Fire suppression, 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: May, 2016

Section 2. HAZARDS IDENTIFICATION

GHS – Classification

Health	Environmental	Physical
Acute Toxicity: Category 5	None	None
Skin Corrosion/Irritation: Category 3	None	None
Skin Sensitization: NO	None	None
Eye: Category 2B	None	Warning
STOT –Category 3	None	Warning
Carcinogen: Category None	None	None

GHS – Label Symbol(s):

Exclamation Mark



GHS – Signal Word(s):

Warning

Other Hazards Not Resulting in Classification:

None

GHS – Hazard Phrases

GHS Hazard	GHS Codes(s)	Code Phrase(s)
Physical	None	
Health	H303 316 320 333	May be harmful if swallowed Causes mild skin irritation Causes eye irritation May be harmful if inhaled
Environmental	None	
Precautionary:		
General	P101	If medical advice is needed, have product container or label at hand
Prevention	P261 264	Avoid breathing dust. Wash hands and face thoroughly after handling.
Response	P304+340 305+351+313 337+338 P312	If inhaled, remove person to fresh air and keep comfortable for breathing. If in eyes, rinse cautiously with water for several minutes. Get immediate medical advice/attention (as appropriate). If eye irritation persists: remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER/doctor if you feel unwell (as appropriate).
Storage	None	

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	EC No.	REACH Reg. No.	CAS-No.	Weight %
Mono-ammonium phosphate	NA	NA	7722-76-1	55-75
Ammonium sulfate	231-984-1	NA	7783-20-2	20-40
Fullers earth magnesium aluminum silicate	NA	Not Available	8031-18-3	<3
Mica- potassium aluminum silicate	NA	Not Available	12001-26-2	1-2
Silicone oil methyl hydrogen polysiloxane	NA	Not Available	63148-57-2	<1
Calcium carbonate	215-279-6	Not Available	1317-65-3	<1
Amorphous silica precipitated synthetic zeolite	262-373-8	Not Available	112926-00-8	<1
Yellow 14 pigment – diazo dye	228-767-9	Not Available	5468-75-7	<1

Emergency overview:

Light yellow, fine solid powder, odorless.

Adverse health effects and symptoms:

Irritant to the respiratory system; Irritating to eyes and skin. Symptoms may include coughing, shortness of breath, and irritation of the lungs, eyes, and skin. Ingestion, although unlikely, may cause cramps, nausea and diarrhea.

Cut-off Levels

Chemical Name	Reproductive Toxicity	Carcinogenicity	Mutagenicity	Other Hazard Classes
Mono-ammonium Phosphate	NA	NA	NA	NA
Ammonium Sulfate	NA	NA	NA	NA

Fullers earth magnesium aluminum silicate	NA	NA	NA	NA
Mica- potassium aluminum silicate	NA	NA	NA	NA
Silicone oil methyl hydrogen polysiloxane	NA	NA	NA	NA
Calcium carbonate	NA	NA	NA	NA
Amorphous silica precipitated synthetic zeolite	NA	NA	NA	NA
Yellow 14 pigment – di-azo dye	NA	NA	NA	NA

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, wash with plenty of soap and 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 numbness or tingling in hands or feet, uneven heart rate, paralysis, feeling faint, chest pain or heavy feeling, pain spreading to the arm or shoulder, nausea, diarrhea, sweating, general ill feeling, or seizure (convulsions). If victim is conscious and alert, give 2-3 glasses of water to drink. If conscious, do not induce vomiting. Seek immediate medical attention. 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:

Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema, or bronchitis. Skin contact may aggravate existing skin disease. Chronic overexposure may cause pneumoconiosis ("dusty lung" disease).

Section 5. FIRE-FIGHTING MEASURES

Flammable Properties:	Not flammable
Flash Point:	Not determined
Suitable Extinguishing Media:	Non-combustible. Use extinguishing media suitable for surrounding conditions.
Hazardous Combustion Products:	Carbon and sulfur oxides
<u>Explosion Data:</u>	
Sensitivity to Mechanical Impact:	Not sensitive
Sensitivity to Static Discharge:	Not sensitive
Unusual fire/explosion hazards:	In a fire this material may decompose, releasing oxides of carbon, sulfur, potassium and nitrogen (see Section 10).
Protective Equipment and Precautions for Firefighters:	As in any fire, wear self-contained breathing apparatus in 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/Handling:	Keep product in original container or extinguisher. Contents may be under pressure – inspect extinguisher consistent with product labeling to ensure container integrity.
Incompatible Products:	Do not mix with other extinguishing agents, particularly potassium bicarbonate and sodium bicarbonate. Incompatible with strong oxidizing agents and strong acids. Do not store in high humidity. Do not combine with chlorine compounds.

Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name	OSHA PEL	ACGIH TLV	DFG MAK *	EU BLV
Mono-ammonium phosphate	PNOC** Total dust, 15 mg/m ³ Respirable fraction, 5 mg/m ³	PNOC Total dust, 10 mg/m ³ Respirable fraction, 3 mg/m ³	PNOC Total dust, 4 mg/m ³ Respirable fraction, 1.5 mg/m ³	NA
Ammonium Sulfate	PNOC** Total dust, 15 mg/m ³ Respirable fraction, 5 mg/m ³	PNOC Total dust, 10 mg/m ³ Respirable fraction, 3 mg/m ³	PNOC Total dust, 4 mg/m ³ Respirable fraction, 1.5 mg/m ³	NA
Mica	6 mg/m ³	3 mg/m ³	NR	NA
Fullers Earth	PNOC** Total dust, 15 mg/m ³ Respirable fraction, 5 mg/m ³	PNOC Total dust, 10 mg/m ³ Respirable fraction, 3 mg/m ³	PNOC Total dust, 4 mg/m ³ Respirable fraction, 1.5 mg/m ³	
Silicone oil	NR**	NR	NR	NA
Calcium carbonate	PNOC Total dust, 15 mg/m ³ Respirable fraction, 5 mg/m ³	PNOC Total dust, 10 mg/m ³ Respirable fraction, 3 mg/m ³	-----	NA
Amorphous silica	80 mg/m ³ % silica	10 mg/m ³	4 mg/m ³	NA
Yellow 14 pigment	NR	NR	NR	NA

*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:

The need for respiratory protection is not probable during short-term exposure. PPE use during production process must be independently evaluated.



Eye/Face Protection:
Skin and Body Protection:
Respiratory Protection:

Tightly fitting safety goggles
Wear protective gloves/coveralls
If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn. Use P100 respirators 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 safety and health requirements. The need for respiratory protection is not likely for short-term use in well ventilated areas. Good personal hygiene practice is essential, such as avoiding food, tobacco products, or other hand-to-mouth contact when handling. Wash thoroughly after handling.

Hygiene Measures:

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Light yellow powder, finely divided odorless solid

Molecular Weight:

NH₄H₂PO₄: 115.03; (NH₄)₂SO₄: 132.14

Odor:	Odorless
Odor Threshold:	No information available
Decomposition Temperature °C:	100 - 120
Freezing Point °C:	No information available
Initial Boiling Point °C:	No information available
Physical State:	Crystalline Powder
pH:	Mixture approximately 4 to 5; NH ₄ H ₂ PO ₄ : 4.2 in 0.2 molar solution; (NH ₄) ₂ SO ₄ : 5.5 in 0.1 molar solution
Flash Point °C:	None
Auto-ignition Temperature °C:	None
Boiling Point/Range °C:	Not Applicable
Melting Point/Range °C:	NH ₄ H ₂ PO ₄ : 190; (NH ₄) ₂ SO ₄ : 280
Flammability:	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:	Not Applicable
Specific gravity at 25 C:	NH ₄ H ₂ PO ₄ : 1.80; (NH ₄) ₂ SO ₄ : 1.77
Solubility:	Coated-Not Immediately Soluble in Water
Partition Coefficient:	NH ₄ H ₂ PO ₄ Est: -4.11; (NH ₄) ₂ SO ₄ : Est: -0.48
Viscosity:	Not Applicable

NOTE: NH₄H₂PO₄ – Monoammonium Phosphate; (NH₄)₂SO₄: – Ammonium Sulfate

Section 10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage and handling conditions.
Reactivity:	
Incompatibles:	Strong alkalis (bases), magnesium, strong oxidizers, isocyanuric acids and chlorine compounds.
Conditions to Avoid:	Storage or handling near incompatibles.
Hazardous Decomposition Products:	Heat of fire may release carbon monoxide, carbon dioxide, and sulfur dioxide. Also ammonia, oxides of phosphorous and nitrogen oxides may be released during decomposition.
Possibility of Hazardous Reactions:	Slight
Hazardous Polymerization	Does not occur

Section 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure:	Inhalation, skin, and eye contact.
Symptoms:	
Immediate:	
Inhalation:	Irritation, coughing.
Eyes:	Irritation.
Skin:	Irritation.
Delayed:	Symptoms appear to be relatively immediate
Acute Toxicity:	Relatively non-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

Chemical Name	LD50		LC50 (Inhalation)
	Oral	Dermal	
Mono-ammonium phosphate	5750 mg/kg (rat)	>7940 mg/kg (rabbit)	Not available
Ammonium Sulfate	2840 mg/kg (rat)	Not available	Not available
Mica	None	None	None
Fullers Earth	None	None	None
Silicone oil	None	None	None
Calcium carbonate	6450 mg/kg (rat)	500 mg/24 hr (rabbit)	Not available
Amorphous silica	>5000 mg/kg (rat)	>2000 mg/kg (rabbit)	>2.2 mg/L (rat)
Yellow 14 pigment	>17000 mg/kg (rat)	>3000 mg/kg (rat)	>4448 mg/m ³ (rat)

Reproductive Toxicity:	This product's ingredients are not known to have reproductive or teratogenic effects.
Target Organs and Effects (TOST):	Respiratory system irritant). This product is a mild irritant to epithelial tissue, (eyes, mucous membranes, skin) and may aggravate dermatitis. No information was found indicating the product causes sensitization.

Other Toxicity Categories

Chemical Name	Germ Cell Mutagenicity	Carcinogenicity	Reproductive	TOST Single Exp	TOST Repeated Exp	Aspiration
Mono-ammonium phosphate	None	None	None	Cat 3	None	None
Ammonium Sulfate	None	None	None	Cat 3	None	None
Fullers earth	None	None	None	None	None	None
Mica	None	None	None	None	None	None
Silicone oil	None	None	None	None	None	None

Calcium carbonate	None	None	None	None	None	None
Amorphous silica	None	None	None	None	None	None
Yellow 14 pigment	None	None	None	None	None	None

Section 12. ECOLOGICAL INFORMATION

Ecotoxicity:	Negative effects unknown. Provides nutrient nitrogen and phosphorus to plant life.
Persistence/Degradability:	Degrades rapidly in humid/wet environment.
Probability of rapid biodegradation:	NH ₄ H ₂ PO ₄ Est: 0.693 (Rapid); (NH ₄) ₂ SO ₄ : Est: 0.684 (Rapid)
Anaerobic biodegradation probability:	NH ₄ H ₂ PO ₄ Est: 0.398 (Slow); (NH ₄) ₂ SO ₄ : Est: 0.398 (Slow)
Bioaccumulation potential:	Low.
Bioconcentration factor:	NH ₄ H ₂ PO ₄ : 3.16 L/kg; (NH ₄) ₂ SO ₄ : 3.16 L/kg (wet weight)
Bioaccumulation:	Extent unknown.
Mobility in soil:	Slow evaporation rate; water soluble, may leach to groundwater
Log Koc:	NH ₄ H ₂ PO ₄ Est: -1.25; (NH ₄) ₂ SO ₄ : Est: 1.35
Log Koa:	NH ₄ H ₂ PO ₄ Est: 16.72; (NH ₄) ₂ SO ₄ : Est: 20.10
Log Kaw:	NH ₄ H ₂ PO ₄ Est: -20.86; (NH ₄) ₂ SO ₄ : Est: -19.62

NOTE: NH₄H₂PO₄ – Mono-ammonium Phosphate; (NH₄)₂SO₄: – Ammonium Sulfate

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

Aquatic Toxicity Values – Environment – Research

Chemical Name	Acute (LC50)	Chronic (LC50)
Mono-ammonium phosphate	N/A	N/A
Ammonium Sulfate	N/A	N/A
Mica	N/A	N/A
Fullers Earth	N/A	N/A
Silicone oil	N/A	N/A
Calcium carbonate	N/A	N/A
Amorphous silica	N/A	N/A
Yellow 14 pigment	N/A	N/A

Aquatic Toxicity Values – Environment – Estimates

Chemical Name	Acute (LC50)	EC50
Mono-ammonium phosphate	2,91e+07 mg/L Fish 96 hr; 9.4e+06 mg/l Daphnid 48 hr;	6.70e+05 mg/L Gr. Algae 96 hr
Ammonium Sulfate	2521 mg/L Fish 96 hr; 1244 mg/l Daphnid 48 hr;	518 mg/L Gr. Algae 96 hr
Mica	N/A	N/A
Fullers Earth	N/A	N/A
Silicone oil	N/A	N/A
Calcium carbonate	N/A	N/A
Amorphous silica	N/A	N/A
Yellow 14 pigment	N/A	N/A

Section 13. DISPOSAL CONSIDERATIONS

Safe Handling

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?: NO

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 2.2, non-flammable, when shipped via highway or rail.

Section 15. REGULATORY INFORMATION

International Inventory Status: All ingredients are on the following inventories

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

REACH Title VII Restrictions: No information available

Chemical Name	Dangerous Substances	Organic Solvents	Harmful Substances Whose Names Are to be Indicated on Label	Pollution Release and Transfer Registry (Class II)	Pollution Release and Transfer Registry (Class I)	Poison and Deleterious Substances Control Law
Mono-ammonium Phosphate	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Ammonium Sulfate	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Component	ISHA – Harmful Substances Prohibited for Manufacturing, Importing, Transferring, or Supplying	ISHA – Harmful Substances Requiring Permission	Toxic Chemical Classification Listing (TCCL) – Toxic Chemicals	Toxic Release Inventory (TRI) – Group I	Toxic Release Inventory (TRI) – Group II
Mono-ammonium Phosphate 7722-76-1	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Ammonium Sulphate	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Fullers earth magnesium aluminum silicate 3031-18-3 (>4)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Mica-potassium aluminum silicate 120001-26-2 (>2)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Calcium carbonate 471-34-1	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Amorphous silica 69012-64-2	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Yellow 14 pigment 5468-75-7	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

European Risk and Safety phrases:

EU Classification:	XN	Irritant
R Phrases:	20 36/37	Harmful by inhalation. Irritating to eyes, respiratory system.
S Phrases:	22 24/25 26 36	Do not breath dust. Avoid contact with skin and eyes In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. 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 and 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:

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard-*	Yes
Reactive Hazard	No

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

Clean Water/Clean Air Acts:

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) or Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61) and 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:

- | | |
|-----------------------------|---------------------|
| Mexico – Grade | No component listed |
| 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	4-May-2016
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

Section 1. PRODUCT AND COMPANY IDENTIFICATION

<p>Product Name:</p> <p>Other Identifiers:</p> <p>Product Code(s):</p> <p>Model Code(s) for Extinguishers:</p> <p>Recommended Use:</p> <p>Manufacturer:</p> <p>Internet Address:</p> <p>Address:</p> <p>Company Telephone:</p> <p>E-mail Address:</p> <p>Emergency Contacts:</p> <p>Revised:</p>	<p>Purple K Dry Chemical Fire Extinguisher Potassium Bicarbonate, KDC, PK CH 515, 517, 542, 553 410, 415, 416, 452,460, 466, 469, 472, 478, 479, 483, 486, 490, 493, 497, 566, 569, 575, 580, 584,591, 595, 599, 652, 688, 689, 690, 691, 693, 722, 762, 764, 783, V10PK, V13PK, V25PK, VH25PK, V50PK, VS50PK Fire suppression, agriculture, medical Not for human or animal drug use. AMEREX CORPORATION www.amerex-fire.com 7595 Gadsden Highway, P.O. Box 81 Trussville, AL 35173-0081 (205) 655-3271 info@amerex-fire.com Chemtrec 1(800) 424-9300 or (703) 527-3887 May, 2016</p>
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Section 2. HAZARDS IDENTIFICATION

GHS – Classification

Health	Environmental	Physical
Acute Toxicity: Category 5	None	None
Skin Corrosion/Irritation: Category 3	None	None
Skin Sensitization: NO	None	None
Eye: Category 2B	None	Warning
STOT – Category 3	None	Warning
Carcinogen: Category None	None	None

GHS – Label Symbol(s):

Exclamation Mark



GHS – Signal Word(s):

Warning

Other Hazards Not Resulting in Classification: None

GHS – Hazard Phrases

GHS Hazard	GHS Codes(s)	Code Phrase(s)
Physical	None	
Health	H303 316 320 335	May be harmful if swallowed Causes mild skin irritation Causes eye irritation May cause respiratory irritation
Environmental	None	
Precautionary:		
General	P101	If medical advice is needed, have product container or label at hand
Prevention	261 264	Avoid breathing dust Wash hands and face thoroughly after handling
Response	P304+340 305+351+313 337+338 312	If inhaled, remove person to fresh air and keep comfortable for breathing. If in eyes, rinse cautiously with water for several minutes. Get immediate medical advice/attention (as appropriate). If eye irritation persists: remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER/doctor if you feel unwell (as appropriate).
Storage	P401+402+403	Store in original container or extinguisher in a dry, well ventilated place

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	EC No.	REACH Reg. No.	CAS-No.	Weight %
Potassium Bicarbonate (potassium hydrogen carbonate)-may contain minor calcium carbonate	206-059-0	01-2119532640-48-0002	298-14-6	>93
Fullers earth magnesium aluminum silicate	NA	Not Available	8031-18-3	>4
Mica- potassium aluminum silicate	NA	Not Available	12001-26-2	>2
Silicone oil methyl hydrogen polysiloxane	NA	Not Available	63148-57-2	<0.5
Violet 23 pigment oxazine dye	228-767-9	Not Available	6358-30-1	<0.2

Emergency overview:

Adverse health effects and symptoms:

Light purple, fine solid powder, odorless.

A mild irritant to the respiratory system, eyes, and 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

Chemical Name	Reproductive Toxicity	Carcinogenicity	Mutagenicity	Other Hazard Classes
Potassium Bicarbonate (potassium hydrogen carbonate)-may contain minor calcium carbonate	NA	NA	NA	NA
Fullers earth magnesium aluminum silicate	NA	NA	NA	NA
Mica-potassium aluminum silicate	NA	NA	NA	NA
Silicone oil methyl hydrogen polysiloxane	NA	NA	NA	NA
Violet 23 pigment oxazine dye	NA	NA	NA	NA

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, wash with plenty of soap and 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 numbness or tingling in hands or feet, uneven heart rate, paralysis, feeling faint, chest pain or heavy feeling, pain spreading to the arm or shoulder, nausea, sweating, general ill feeling, or seizure (convulsions). If victim is conscious and alert, give 2-3 glasses of water to drink. If conscious, do not induce vomiting. Seek immediate medical attention. 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:

Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema, or bronchitis. Skin contact may aggravate existing skin disease. Chronic overexposure may cause pneumoconiosis ("dusty lung" disease).

Section 5. FIRE-FIGHTING MEASURES

Flammable Properties:	Not flammable
Flash Point:	Not determined
Suitable Extinguishing Media:	Non-combustible. Use extinguishing media suitable for surrounding conditions.
Hazardous Combustion Products:	Carbon oxides
<u>Explosion Data:</u>	
Sensitivity to Mechanical Impact:	Not sensitive
Sensitivity to Static Discharge:	Not sensitive
Unusual fire/explosion hazards:	In a fire this material may decompose, releasing oxides of carbon, potassium and nitrogen (see Section 10).
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.
Other:	If product is contaminated, use PPE and containment appropriate to the nature of the most toxic chemical or 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/Handling:	Keep product in original container or extinguisher. Prevent falling. Do not allow near heat sources. Contents may be under pressure – inspect extinguisher consistent with product labeling to ensure container integrity.
Incompatible Products:	Do not mix with other extinguishing agents, particularly ammonium phosphate. Incompatible with strong oxidizing agents and strong acids. Do not store in high humidity.
Hazardous Decomposition Products:	No data available.
Hazardous Polymerization:	Will not occur

Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name	OSHA PEL	ACGIH TLV	DFG MAK *	EU BLV
Potassium bicarbonate	PNOC** Total dust, 15 mg/m ³ Respirable fraction, 5 mg/m ³	PNOC Total dust, 10 mg/m ³ Respirable fraction, 3 mg/m ³	PNOC Total dust, 4 mg/m ³ Respirable fraction, 1.5 mg/m ³	NA
Mica	6 mg/m ³	3 mg/m ³	-----	NA
Fullers Earth	PNOC Total dust, 15 mg/m ³ Respirable fraction, 5 mg/m ³	PNOC Total dust, 10 mg/m ³ Respirable fraction, 3 mg/m ³	PNOC Total dust, 4 mg/m ³ Respirable fraction, 1.5 mg/m ³	NA
Silicone oil	NR***	NR	NR	NA
Violet 23 pigment	NR	NR	NR	NA

*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.

<u>Engineering Controls:</u>	Showers Eyewash stations Ventilation systems
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Personal Protective Equipment – PPE Code E:

The need for respiratory protection is not probable during short-term exposure. PPE use during production process must be independently evaluated.



Eye/Face Protection:
Skin and Body Protection:
Respiratory Protection:

Tightly fitting safety goggles
Wear protective gloves/coveralls
If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn. Use P100 respirators 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 safety and health requirements. The need for respiratory protection is not likely for short-term use in well ventilated areas. Good personal hygiene practice is essential, such as avoiding food, tobacco products, or other hand-to-mouth contact when handling. Wash thoroughly after handling.

Hygiene Measures:

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Light purple powder, finely divided odorless solid
Molecular Weight:	KHCO_3 : 100.14
Odor:	No information available
Odor Threshold:	No information available
Decomposition Temperature $^{\circ}\text{C}$:	KHCO_3 : 100 - 120
Freezing Point $^{\circ}\text{C}$:	No information available
Initial Boiling Point $^{\circ}\text{C}$:	No information available
Physical State:	Crystalline Powder
pH:	Approximately 9 – 10 for a 10% solution
Flash Point $^{\circ}\text{C}$:	None

Autoignition Temperature °C:	None
Boiling Point/Range °C:	Not Applicable
Melting Point/Range °C:	KHCO ₃ : 100 – 120
Flammability:	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
MMHG @ 37.8 C :	Not Applicable
Vapor Density:	Not Applicable
Vapor Pressure:	< 1 mm Hg
Specific gravity:	Approximately 2.17; 0.88 in aerated condition
Solubility:	Product is coated, not immediately soluble in water
Partition Coefficient:	No Information Available
Viscosity:	Not Applicable

Section 10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage and handling conditions.
Reactivity:	None
Incompatibles:	Strong oxidizing agents; Strong acids; Ammonium phosphate, lithium. Protect from moisture
Conditions to Avoid:	Storage or handling near incompatibles.
Hazardous Decomposition Products:	Carbon, nitrogen, and potassium oxides. Heat of fire may release carbon monoxide.
Possibility of Hazardous Reactions:	None
Hazardous Polymerization	Does not occur

Section 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure:	Inhalation, skin and eye contact.
Symptoms:	
Immediate:	
Inhalation:	Irritation, coughing.
Eyes:	Irritation.
Skin:	Irritation.
Delayed:	Symptoms appear to be relatively immediate
Acute Toxicity:	Relatively non-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

Chemical Name	LD50		LC50 (Inhalation)
	Oral	Dermal	
Potassium bicarbonate	2825 mg/kg (rat)	>2000 mg/kg (rabbit)	4.96 mg/l (rat)
Mica	None	None	None
Fullers Earth	None	None	None
Silicone oil	None	None	None
Violet 23 pigment	None	None	None

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, mucous membranes, skin) and may aggravate dermatitis. No information was found indicating the product causes sensitization.

Other Toxicity Categories

Chemical Name	Germ Cell Mutagenicity	Carcinogenicity	Reproductive	TOST Single Exp	TOST Repeated Exp	Aspiration
Potassium Bicarbonate	None	None	None	Cat 3	None	None
Fullers earth	None	None	None	None	None	None
Mica-	None	None	None	None	None	None
Silicone oil	None	None	None	None	None	None
Violet 23 pigment oxazine dye	None	None	None	None	None	None

Section 12. ECOLOGICAL INFORMATION

Ecotoxicity:

Low risk.

Persistence/Degradability:

Degrades rapidly in humid/wet environment.

Probability of rapid biodegradation:

KHCO₃ Est: 0.718 (Rapid)

Anaerobic biodegradation probability:

KHCO₃ Est: 0.836 (Rapid)

Bioaccumulation potential:

Low.

Bioconcentration factor:

KHCO₃: 3.16 L/kg

Bioaccumulation Potential:

Low. Est biotransformation half-life: 0.012 days.

Mobility in soil:

Log Koc: Est -2.062

Log K_{ow}: Not applicable
 Log K_{aw}: Not applicable
 Fraction sorbed to airborne particulates: 0.886
 Atmospheric oxidation half-life: 20.6 days
 Level III Fugacity Model: 62% soil, 37% water, <0.1% sediment, air
 Other Adverse Ecological Effects: No other known effects at this time

Aquatic Toxicity Values - Research

Chemical Name	Acute (LC50)	Chronic (LC50)
Potassium bicarbonate	Cat IV; 1300 mg/l (rainbow trout), 96 hr. 670 mg/l (water flea) 24 hr., mortality min. at 94 mg/l 260 mg/l (flathead minnow), mortality min. dose	N/A
Mica	N/A	N/A
Fullers Earth	N/A	N/A
Silicone oil	N/A	N/A
Violet 23 pigment	N/A	N/A

Aquatic Toxicity Values – Calculated Estimates

Chemical Name	Acute (LC50)	Chronic (LC50)
Potassium bicarbonate	8259 mg/L Fish 96 hr; 3737 mg/l Daphnid 48 hr;	1088 mg/L Gr. Algae 96 hr
Mica	N/A	N/A
Fullers Earth	N/A	N/A
Silicone oil	N/A	N/A
Violet 23 pigment	N/A	N/A

Section 13. DISPOSAL CONSIDERATIONS

Safe Handling 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?: NO

 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 shipped via highway or rail. Use a Non-Flammable Gas label (class 2.2) when shipping via air and some cases where Limited Quantity does not apply for highway and rail shipments.

Section 15. REGULATORY INFORMATION

International Inventory Status: All ingredients are on the following inventories

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

REACH Title VII Restrictions: No information available

Chemical Name	Dangerous Substances	Organic Solvents	Harmful Substances Whose Names Are to be Indicated on Label	Pollution Release and Transfer Registry (Class II)	Pollution Release and Transfer Registry (Class I)	Poison and Deleterious Substances Control Law
Potassium Bicarbonate	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Component	ISHA – Harmful Substances Prohibited for Manufacturing, Importing, Transferring, or Supplying	ISHA – Harmful Substances Requiring Permission	Toxic Chemical Classification Listing (TCCL) – Toxic Chemicals	Toxic Release Inventory (TRI) – Group I	Toxic Release Inventory (TRI) – Group II
Potassium Bicarbonate 298-14-6 (>93)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Fullers earth magnesium aluminum silicate 8031-18-3 (>4)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Mica-potassium aluminum silicate 120001-26-2 (>2)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Silicone oil methyl hydrogen polysiloxane 63148-57-2 (<0.5)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Violet 23 pigment oxazine dye 6358-30-1 (<0.2)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

European Risk and Safety phrases:

EU Classification:	XN	Irritant
R Phrases:	20 36/37	Harmful by inhalation. Irritating to eyes, respiratory system.
S Phrases:	22 24/25 26 36	Do not breath dust. Avoid contact with skin and eyes In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. 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 and 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:

Acute Health Hazard	No
Chronic Health Hazard	No

Fire Hazard	No
Sudden Release of Pressure Hazard-*	Yes
Reactive Hazard	No

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

Clean Water/Clean Air Acts:

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) or Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61) and 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:

Mexico – Grade	No component listed
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	4-May-2016
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

Section 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Regular Dry Chemical Extinguishant
Other Identifiers: Sodium Bicarbonate, SDC
Product Code(s): CH 511, CH512, CH 541
Model Codes for Fire Extinguishers: A620,403,408,409,412,447,451,453,457,459,462,468,471,477,482,489,492,496,568,574,582,721,761,782
Recommended Use: Fire suppression of Class B and C 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: May, 2016

Section 2. HAZARDS IDENTIFICATION

Emergency overview: White fine powder

Adverse health effects and symptoms: Mildly irritating to the respiratory system and eyes. Symptoms may include coughing, shortness of breath, and irritation of the lungs, eyes, and skin. Ingestion may cause gastrointestinal irritation and edema (fluid retention).

GHS – Classification

Health	Environmental	Physical
Acute Toxicity: Category 5	None	None
Skin Corrosion/Irritation: Category 3	None	None
Skin Sensitization: NO	None	None
Eye: Category 2B	None	Warning
STOT – Category 3	None	Warning
Carcinogen: Category None	None	None

GHS – Label Symbol(s):

Exclamation Mark



GHS – Word(s):

Warning

Other Hazards Not Resulting in Classification: None

GHS – Hazard Phrases

GHS Hazard	GHS Codes(s)	Code Phrase(s)
Physical	None	
Health	H303 316 320 335	May be harmful if swallowed Causes mild skin irritation Causes eye irritation May cause respiratory irritation
Environmental	None	
Precautionary:		
General	P101	If medical advice is needed, have product container or label at hand
Prevention	261 264	Avoid breathing dust Wash hands and face thoroughly after handling
Response	P304+340 305+351+313 337+338 312	If inhaled, remove person to fresh air and keep comfortable for breathing. If in eyes, rinse cautiously with water for several minutes. Get immediate medical advice/attention (as appropriate). If eye irritation persists: remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER/doctor if you feel unwell (as appropriate).
Storage	None	

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	EC No.	REACH Reg. No.	CAS-No.	Weight %
Sodium bicarbonate	205-633-8	Not Available	144-55-8	>92
Fullers earth magnesium aluminum silicate	NA	Not Available	8031-18-3	<5
Sericite Potassium aluminum silicate	NA	Not Available	12001-26-2	<2.5
Silicone oil methyl hydrogen polysiloxane	NA	Not Available	63148-57-2	<0.5

Emergency overview:

Adverse health effects and symptoms:

White fine powder, odorless.

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 gastrointestinal irritation and edema (fluid retention).

Cut-off Levels

Chemical Name	Reproductive Toxicity	Carcinogenicity	Mutagenicity	Other Hazard Classes
Sodium bicarbonate	Not enough information	NA	Not enough information	Not enough information
Fullers earth magnesium aluminum silicate	NA	NA	NA	NA
Sericite Potassium aluminum silicate	NA	NA	NA	NA
Silicone oil methyl hydrogen polysiloxane	NA	NA	NA	NA

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, wash with plenty of soap and 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 thirst, nausea, and severe diarrhea and vomiting. If victim is conscious and alert, give 2-3 glasses of water to drink. If conscious, do not induce vomiting. Seek immediate medical attention. 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:	Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema, or bronchitis. Skin contact may aggravate existing skin disease. Chronic overexposure may cause pneumoconiosis ("dusty lung" disease).

Section 5. FIRE-FIGHTING MEASURES

Flammable Properties:	Not flammable
Flash Point:	Not determined
Suitable Extinguishing Media:	Non-combustible. Use extinguishing media suitable for surrounding conditions.
Hazardous Combustion Products:	Carbon oxides
<u>Explosion Data:</u>	
Sensitivity to Mechanical Impact:	Not sensitive
Sensitivity to Static Discharge:	Not sensitive
Unusual fire/explosion hazards:	In a fire this material may decompose, releasing oxides of carbon, potassium and nitrogen (see Section 10).
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.
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/Handling:	Keep product in original container or extinguisher. Prevent falling. Do not allow near heat sources. Contents may be under pressure – inspect extinguisher consistent with product labeling to ensure container integrity.
Incompatible Products:	Do not mix with other extinguishing agents, Incompatible with strong oxidizing agents and strong acids. Do not store in high humidity.
Hazardous Decomposition Products:	Carbon and sodium oxides.
Hazardous Polymerization:	Will not occur.

Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name	OSHA PEL	ACGIH TLV	DFG MAK *	EU BLV
Sodium bicarbonate	PNOC** Total dust, 15 mg/m ³ Respirable fraction, 5 mg/m ³	PNOC Total dust, 10 mg/m ³ Respirable fraction, 3 mg/m ³	PNOC Total dust, 4 mg/m ³ Respirable fraction, 1.5 mg/m ³	NA
Fullers earth magnesium aluminum silicate	PNOC** Total dust, 15 mg/m ³ Respirable fraction, 5 mg/m ³	PNOC Total dust, 10 mg/m ³ Respirable fraction, 3 mg/m ³	PNOC Total dust, 4 mg/m ³ Respirable fraction, 1.5 mg/m ³	NA
Sericite Potassium aluminum silicate	PNOC Total dust, 15 mg/m ³ Respirable fraction, 5 mg/m ³	PNOC Total dust, 10 mg/m ³ Respirable fraction, 3 mg/m ³	PNOC Total dust, 4 mg/m ³ Respirable fraction, 1.5 mg/m ³	NA
Silicone oil methyl hydrogen polysiloxane	NR***	NR	NR	NA

*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:

The need for respiratory protection is not probable during short-term exposure. PPE use during production process must be independently evaluated.



Eye/Face Protection:
Skin and Body Protection:
Respiratory Protection:

Tightly fitting chemical goggles
Wear protective gloves/coveralls
If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn. Use P100 respirators for limited exposure, use air-purifying respirator (APR) with high efficiency particulate air (HEPA) filters for prolonged exposure. Positive-pressure supplied air respirators

Hygiene Measures:

may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current safety and health requirements. The need for respiratory protection is not likely for short-term use in well ventilated areas. Good personal hygiene practice is 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:	White powder, finely divided odorless solid
Molecular Weight:	NaHCO ₃ : 84.01
Odor:	No information available
Odor Threshold:	No information available
Decomposition Temperature °C:	NaHCO ₃ : 50
Freezing Point °C:	Approximately 50 (decomposes to sodium carbonate)
Initial Boiling Point °C:	No information available
Physical State:	Crystalline Powder
pH:	Approximately 8.3
Flash Point °C:	None
Autoignition Temperature °C:	None
Boiling Point/Range °C:	Not Applicable. Will decompose
Melting Point/Range °C:	Not Applicable
Flammability:	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:	Low; Est 3.73e-09 mmhg
Specific gravity:	Approximately 2.2
Solubility:	Product is coated – not immediately soluble in water.
Partition Coefficient:	No Information Available
Viscosity:	Not Applicable

NOTE: NaHCO₃ – Sodium bicarbonate

Section 10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage and handling conditions.
Reactivity:	Reacts exothermically with acids to generate non-toxic carbon dioxide gas. Dangerous reaction with mono-ammonium phosphate and sodium potassium alloys.
Incompatibles:	Avoid contact with oxidizing agents and strong acids. Contact with mono-ammonium phosphate, especially in the presence of water, may cause pressure to build due to the generation of ammonia and carbon dioxide gas; moisture will accelerate this reaction. Sodium potassium alloy can result in a violent reaction with certain extinguishing agents, such as Sodium Bicarbonate. Mixtures of Sodium Bicarbonate with 2-furaldehyde can spontaneously ignite when exposed to air. Sodium Bicarbonate is incompatible with dopamine hydrochloride, pentazocine lactate, aspirin and bismuth salicylate, and many alkali salts.
Conditions to Avoid:	Storage or handling near incompatibles.
Hazardous Decomposition Products:	Carbon, nitrogen, and potassium oxides. Heat of fire may release carbon monoxide.
Possibility of Hazardous Reactions:	None
Hazardous Polymerization	Does not occur

Section 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure:	Inhalation, skin and eye contact.
Symptoms:	
Immediate:	
Inhalation:	Irritation, coughing.
Eyes:	Irritation.
Skin:	Irritation.
Delayed:	Symptoms appear to be relatively immediate
Acute Toxicity:	Relatively non-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

Chemical Name	LD50		LC50 (Inhalation)
	Oral	Dermal	
Sodium bicarbonate	4220 mg/kg (rat)	>2000 mg/kg (rabbit)	900 mg/m3 (rat)
Fullers earth magnesium aluminum silicate	None	None	None
Sericite Potassium aluminum silicate	None	None	None
Silicone oil methyl hydrogen polysiloxane	None	None	None

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, mucous membranes, skin) and may aggravate dermatitis. No information was found indicating the product causes sensitization.

Other Toxicity Categories

Chemical Name	Germ Cell Mutagenicity	Carcinogenicity	Reproductive	TOST Single Exp	TOST Repeated Exp	Aspiration
Sodium bicarbonate	None	None	None	No data	None	None
Fullers earth magnesium aluminum silicate	None	None	None	None	None	None
Sericite Potassium aluminum silicate	None	None	None	None	None	None
Silicone oil methyl hydrogen polysiloxane	None	None	None	None	None	None

Section 12. ECOLOGICAL INFORMATION

Ecotoxicity:

Low.

Persistence/Degradability:

Soluble in water; NaHCO₃: 96 g/l at 20 °C.

Probability of rapid biodegradation:

NaHCO₃ Est: 0.718 (Rapid)

Anaerobic biodegradation probability:

NaHCO₃ Est: 0.836 (Rapid)

Bioaccumulation potential:

Low.

Bioconcentration factor:

NaHCO₃ Est: 3.16 L/kg

Mobility in soil:

Slow evaporation rate; water soluble, may leach to groundwater

Log Koc:

NaHCO₃ Est: -2.06

NOTE: NaHCO₃ – Sodium bicarbonate

Other Adverse Ecological Effects:

No other known effects at this time

Aquatic Toxicity Values - Environment

Chemical Name	Acute (LC50)	Chronic (LC50)
Sodium bicarbonate	7700 mg/l (rainbow trout)	4100 mg/l (water flea)
Fullers earth magnesium aluminum silicate	N/A	N/A
Sericite Potassium aluminum silicate	N/A	N/A
Silicone oil methyl hydrogen polysiloxane	N/A	N/A

Aquatic Toxicity Values – Calculated Estimates

Chemical Name	Acute (LC50)	EC50
Sodium bicarbonate	8259 mg/L Fish 96 hr; 3737 mg/l Daphnid 48 hr;	1088 mg/L Gr. Algae 96 hr
Fullers earth magnesium aluminum silicate	N/A	N/A
Sericite Potassium aluminum silicate	N/A	N/A
Silicone oil methyl hydrogen polysiloxane	N/A	N/A

Section 13. DISPOSAL CONSIDERATIONS

Safe Handling

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?: NO

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 shipped via highway or rail. Use a non-flammable gas label (class 2.2) when shipping via air and under circumstances where Limited quantity does not apply.

Section 15. REGULATORY INFORMATION

International Inventory Status: All ingredients are on the following inventories

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

REACH Title VII Restrictions: No information available

Chemical Name	Dangerous Substances	Organic Solvents	Harmful Substances Whose Names Are to be Indicated on Label	Pollution Release and Transfer Registry (Class II)	Pollution Release and Transfer Registry (Class I)	Poison and Deleterious Substances Control Law
Sodium bicarbonate	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Fullers earth magnesium aluminum silicate	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Sericite Potassium aluminum silicate	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Silicone oil methyl hydrogen polysiloxane	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Component	ISHA – Harmful Substances Prohibited for Manufacturing, Importing, Transferring, or Supplying	ISHA – Harmful Substances Requiring Permission	Toxic Chemical Classification Listing (TCCL) – Toxic Chemicals	Toxic Release Inventory (TRI) – Group I	Toxic Release Inventory (TRI) – Group II
Sodium bicarbonate	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Fullers earth magnesium aluminum silicate	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Sericite Potassium aluminum silicate	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Silicone oil methyl hydrogen polysiloxane	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

European Risk and Safety phrases:

EU Classification:	XN	Irritant
R Phrases:	20 36/37	Harmful by inhalation. Irritating to eyes, respiratory system.
S Phrases:	22 24/25 26 36	Do not breath dust. Avoid contact with skin and eyes In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. 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 and 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:

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard-*	Yes
Reactive Hazard	No

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

Clean Water/Clean Air Acts:

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) or Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61) and 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:

- Mexico – Grade No component listed
- 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	4-May-2016
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.

I. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1. Identification of the preparation

Product Name: "NITROGEN"
Chemical Name: Nitrogen.
CAS No.: 7727-37-9.
Chemical Formula: N₂.
EINECS Number: 231-783-9.

1.2. Use of the preparation

The intended or recommended use of this preparation is to discharge a FIRE EXTINGUISHING AGENT.

1.3. Company identification

Manufacturer/Supplier: ANSUL INCORPORATED
Address: One Stanton Street, Marinette, WI 54143-2542
Prepared by: Safety and Health Department
Phone: 715-735-7411
Internet/Home Page: <http://www.ansul.com>
Date of Issue: September, 2006

1.4. Emergency telephone

CHEMTREC 800-424-9300 or 703-527-3887

2. COMPOSITION/INFORMATION ON INGREDIENTS

2.1. Ingredient Name: Nitrogen.
Chemical Formula: N₂.
CAS No.: 7727-37-9.
EINECS Number: 231-783-9.
Concentration, Wt %: 100%.
Hazard Identification: See Heading 3.

- 2.2. (i) There are no substances presenting a health or environmental hazard within the meaning of Directive 67/548/EEC, in concentrations equal to or greater than those laid down in the table set out in Article 3(3) of Directive 1999/45/EC, nor with lower limits given in Annex I to Directive 67/548/EEC or in Annexes II, III or V to Directive 1999/45/EC.
(ii) There are no substances for which there are Community workplace exposure limits, which are not already included in (i) above.

3. HAZARDS IDENTIFICATION

FOR HUMANS:

EU Classification: Nonflammable Gas.
R None.
S 9 Keep container in a well ventilated place.

Limit Values for Exposure: None established.

This product has not been listed as carcinogenic by National Toxicology Program, IARC, or OSHA.

SIGNS AND SYMPTOMS:

Acute Exposure:

Eye Contact: Non-irritating gas.
Skin Contact: Non-irritating gas.
Inhalation: Can cause suffocation by reducing oxygen available for breathing.
Breathing very high concentrations of vapor can cause dizziness, shortness of breath, unconsciousness, or even death.

Ingestion: Non-irritating gas. Not a probable route of exposure.

Chronic Overexposure: No data available.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: None known.

FOR ENVIRONMENT:

This is a component of the atmosphere.

4. FIRST AID MEASURES

Eye Contact:	Avoid direct contact with high pressure gas discharge.
Skin Contact:	Avoid direct contact with high pressure gas discharge.
Inhalation:	Avoid direct inhalation of undiluted gas. Gas is an asphyxiant.
Ingestion:	Not a probable route of exposure.

5. FIRE-FIGHTING MEASURES

Non-flammable gas. Use agent appropriate to surrounding material.
Though gas cylinders are equipped with pressure and temperature relief devices, they should be removed from high temperature areas or fires, if safe to do so, to avoid risk of rupture.
There are NO extinguishing media which must not be used for safety reasons.
NO special protective equipment is needed for fire-fighters.

6. ACCIDENTAL RELEASE MEASURES

Material is a normal atmospheric gas.
NO harm to the environment is expected from an accidental release of this preparation.

7. HANDLING AND STORAGE

7.1. Handling

Care should be taken in handling all chemical substances and preparations.
Secure to prevent falling. Do not move without safety cap in place to prevent damage to valve.
See incompatibility information in Heading 10.

7.2. Storage

Store cylinders with restraints to prevent possibility of rupture. Store as a compressed gas in DOT approved vessels.
Keep safety cap in place while in storage.
See incompatibility information in Heading 10.
Store in original container. Keep tightly closed until used.
There is NO danger to the environment from a storage release.

7.3. Specific use

The intended or recommended use of this preparation is to discharge a FIRE EXTINGUISHING AGENT.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limit values

There are NO currently occupational exposure limit values for this component.

8.2. Exposure controls

8.2.1. Occupational exposure controls

8.2.1.1. Respiratory protection

Exposure to high concentrations requires the use of self-contained breathing apparatus. Other respirators will not protect in an oxygen deficient atmosphere.

8.2.1.2. Hand protection

Use leather gloves when handling cylinders.

8.2.1.3. Eye protection

Use safety glasses with side shields or safety goggles.

8.2.1.4. Skin protection

No special equipment is needed.

8.2.2. Environmental exposure controls

None needed. This material is a normal atmospheric gas.

9. PHYSICAL AND CHEMICAL PROPERTIES**9.1. General information**

Appearance: Colorless gas.
 Odor: None.

9.2. Important health, safety, and environmental information

pH: Not determined.
 Boiling point/boiling range: -195.8 °C.
 Flash point: None.
 Flammability (solid/gas): Not flammable.
 Explosive properties: Not explosive.
 Oxidizing properties: Not an oxidizer.
 Vapor Pressure: Not determined.
 Relative Density: Not applicable.
 Solubility:
 - Water solubility: Not soluble.
 - Fat solubility: Not soluble.
 Partition coefficient, n-octanol/water: Not determined.
 Viscosity: Not determined.
 Vapor density (Air = 1): 0.98.
 Evaporation rate: Not determined.

9.3. Other information

Auto-ignition temperature: Does not ignite.

10. STABILITY AND REACTIVITY**10.1. Conditions to avoid**

Extremely high temperatures, as in a fire may cause a cylinder to fail.
 There are NO known conditions such as temperature, pressure, light, shock, etc., which may cause a dangerous reaction.

10.2. Materials to avoid

None known.

10.3. Hazardous decomposition products

Normally stable.
 Hazardous polymerization will not occur.
 Combustion or decomposition products will not form.

11. TOXICOLOGICAL INFORMATION

Can cause suffocation by reducing oxygen available for breathing. Breathing very high concentrations of vapor can cause dizziness, shortness of breath, unconsciousness, or even death.

12. ECOLOGICAL INFORMATION**12.1. Ecotoxicity**

This material is a normal atmospheric gas.

12.2. Mobility

This material is a normal atmospheric gas.

12.3. Persistence and degradability

This material is a normal atmospheric gas.

12.4. Bioaccumulative potential

This material is a normal atmospheric gas.

12.5. Other adverse effects

Ozone depletion potential: None.
 Photochemical ozone creation potential: None.
 Global warming potential: None.

13. DISPOSAL CONSIDERATIONS

No harm to the environment is expected from this preparation.
This material is a normal atmospheric gas.

14. TRANSPORT INFORMATION

Hazard Class or Division: Nitrogen, Compressed, Class 2.2, UN1066.
Label: Non-flammable gas.
Emergency response guide page number: 121; EMS (Intl): 2-04.
For additional transport information, contact Ansul Incorporated.
This material is a normal atmospheric gas.

15. REGULATORY INFORMATION

EU Classification: Nonflammable gas.
R Phrases: None.
S Phrases: 9 Keep container in a well ventilated place.
Exposure Limit Values: None.
EINECS Status: This component is included in EINECS inventories.
EPA TSCA Status: This component is included in TSCA inventories.
Canadian DSL (Domestic Substances List): This component is included in DSL inventories.
Environmental restrictions: None are known.
Restrictions on Marketing and Use: None are known.
Refer to any other national measures that may be relevant.

16. OTHER INFORMATION**(HMIS) HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:**

HEALTH:	<u>0</u>	4. Severe Hazard
FLAMMABILITY:	<u>0</u>	3. Serious Hazard
REACTIVITY:	<u>0</u>	2. Moderate Hazard
		1. Slight Hazard
		0. Minimal Hazard

(WHMIS) CANADIAN WORKPLACE HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:

This product is rated **A Compressed Gas**.

Toxicological information added from the EINECS ESIS (Existing Substances Information System). A rating under WHMIS has been added, following the Canadian guidelines.

Format is from directive 2001/58/EC.

EINECS data is from <http://ecb.jrc.it/existing-chemicals/>

Data used to compile the data sheet is from Ansul Material Safety Data Sheet, February, 2002.

17. DISCLAIMER

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT, BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. ANSUL SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT.

MSDS available at <http://www.ansul.com>

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MATERIAL SAFETY DATA SHEET

by Tyco Fire Suppression & Building Products

ANSULEX Low pH Liquid Fire Suppressant

Product Code: 1070-2-000 ANa

Issue Date: 07-31-2010

1. Product and Company Identification

Material name	ANSULEX Low pH Liquid Fire Suppressant
Version #	01
Revision date	07-31-2010
Product Code	1070-2-000 ANa
Product use	Fire extinguishing agent
Manufacturer / Importer / Supplier	
Name	Tyco Fire Suppression and Building Products
Address	One Stanton Street Marinette, WI 54143-2542
Phone	715-735-7411
Internet	http://www.ansul.com
Emergency Phone Number	CHEMTREC 800-424-9300 or 703-527-3887

2. Hazards Identification

Emergency overview	Health injuries are not known or expected under normal use.
OSHA regulatory status	This product is considered not hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Eye contact. Skin contact. Inhalation. Ingestion.
Eyes	May cause minor irritation on eye contact.
Skin	Non-irritating to the skin.
Inhalation	None known.
Ingestion	Not a likely route of entry.

3. Composition / Information on Ingredients

The manufacturer lists no ingredients as hazardous according to OSHA 29 CFR 1910.1200.

4. First Aid Measures

First aid procedures	
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Skin contact	Rinse skin with water/shower. Get medical attention if irritation develops and persists.
Inhalation	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Ingestion	Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.
General advice	If you feel unwell, seek medical advice (show the label where possible).

5. Fire Fighting Measures

Flammable properties	No unusual fire or explosion hazards noted.
Extinguishing media	
Suitable extinguishing media	This product is not flammable. Use extinguishing agent suitable for type of surrounding fire.
Specific methods	None known.
Hazardous combustion products	May include oxides of nitrogen.

6. Accidental Release Measures

Personal precautions	Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not contaminate water.
Methods for containment	Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use water spray to reduce vapors or divert vapor cloud drift.
Methods for cleaning up	Should not be released into the environment. Large Spills: Dike far ahead of spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Never return spills in original containers for re-use. Following product recovery, flush area with water. Clean surface thoroughly to remove residual contamination.

7. Handling and Storage

Handling	Avoid release to the environment. Handle and open container with care.
Storage	Use care in handling/storage.

8. Exposure Controls / Personal Protection

Personal protective equipment

Eye / face protection	Not normally needed.
Skin protection	No special protective equipment required.
Respiratory protection	No personal respiratory protective equipment normally required.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance

Form	Liquid.
Color	Yellow green
Odor	Mild.
Physical state	Liquid.
pH	7.7 - 8.7
Melting point	Not available.
Freezing point	Not available.
Boiling point	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific gravity	1.33
Relative density	Not available.
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
VOC	Not available.

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Incompatible materials	None known.
Hazardous decomposition products	Toxic gas. Nitrogen oxides (NOx).

11. Toxicological Information

Toxicological information	The toxicity of this product has not been tested.
Chronic effects	Not available.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Skin corrosion/irritation	Not available.
Epidemiology	Not available.
Neurological effects	Not available.

12. Ecological Information

Ecotoxicity	Not expected to be harmful to aquatic organisms.
Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence and degradability	Not available.

13. Disposal Considerations

Disposal instructions	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Not applicable.

14. Transport Information

DOT	Not regulated as dangerous goods.
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15. Regulatory Information

US federal regulations	This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List. CERCLA/SARA Hazardous Substances - Not applicable.
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Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Acute Health - No Chronic Health - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
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Section 302 extremely hazardous substance No

Section 311 hazardous chemical No

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

16. Other Information

Further information	HMIS® is a registered trade and service mark of the NPCA.
HMIS® ratings	Health: 0 Flammability: 0 Physical hazard: 0
NFPA ratings	Health: 0 Flammability: 0 Instability: 0
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
Issue date	07-31-2010



A UTC Fire & Security Company

MATERIAL SAFETY DATA SHEET

Commercial ABC Dry Chemical (Fire Extinguishing Agent)

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

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

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

2. HAZARDS IDENTIFICATION

EU Main Hazards
Non Hazardous Powder

Routes of Entry

Eye contact - Inhalation - Skin contact

Carcinogenic Status

See Section 11 - Toxicity

Target Organs

Respiratory System - Skin - Eye

Health Effects - Eyes

Contact for short periods of time may cause irritation.

Health Effects - Skin

Contact may cause mild irritation.

Health Effects - Ingestion

Ingestion is not an expected route of exposure.

Health Effects - Inhalation

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

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



A UTC Fire & Security Company

MATERIAL SAFETY DATA SHEET

Commercial ABC Dry Chemical (Fire Extinguishing Agent)

3. COMPOSITION/INFORMATION ON INGREDIENTS

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

4. FIRST AID MEASURES

Eyes

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

Skin

Wash affected area with soap and water. Obtain medical attention if irritation persists.

Ingestion

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

Inhalation

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

Advice to Physicians

Treat symptomatically.

5. FIRE - FIGHTING MEASURES

Extinguishing Media

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

Unusual Fire and Explosion Hazards

Pressurized containers may explode in heat of fire.

Protective Equipment for Fire-Fighting

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

6. ACCIDENTAL RELEASE MEASURES

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

7. HANDLING AND STORAGE

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



A UTC Fire & Security Company

MATERIAL SAFETY DATA SHEET

Commercial ABC Dry Chemical (Fire Extinguishing Agent)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Standards

Occupational exposure limits are listed below, if they exist.

Mica

ACGIH TLV: 3 mg/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

Engineering Control Measures

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

Respiratory Protection

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

Hand Protection

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

Eye Protection

Chemical goggles or safety glasses with side shields.

Body Protection

Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

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

10. STABILITY AND REACTIVITY

Stability

Stable under normal conditions.

Conditions to Avoid

Heat - High temperatures - Exposure to direct sunlight

Materials to Avoid

Strong oxidizing agents - strong acids - sodium hypochlorite

Hazardous Polymerization

Will not occur.



A UTC Fire & Security Company

MATERIAL SAFETY DATA SHEET

Commercial ABC Dry Chemical
(Fire Extinguishing Agent)

10. STABILITY AND REACTIVITY

Hazardous Decomposition Products

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

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Low order of acute toxicity.

Chronic Toxicity/Carcinogenicity

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

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

Genotoxicity

This product is not expected to cause any mutagenic effects.

Reproductive/Developmental Toxicity

This product is not expected to cause adverse reproductive effects.

12. ECOLOGICAL INFORMATION

Mobility

No relevant studies identified.

Persistence/Degradability

No relevant studies identified.

Bio-accumulation

No relevant studies identified.

Ecotoxicity

No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORT INFORMATION

DOT CFR 172.101 Data	Not regulated
UN Proper Shipping Name	Not regulated
UN Class	None
UN Number	None
UN Packaging Group	None

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



A UTC Fire & Security Company

MATERIAL SAFETY DATA SHEET

Commercial ABC Dry Chemical
(Fire Extinguishing Agent)

15. REGULATORY INFORMATION

EU Label Information

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

EU Hazard Symbol and Indication of Danger.

This preparation is not classified as dangerous.

R phrases

None

S phrases

None.

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

TSCA Listing

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

EINECS Listing

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

DSL/NDSL (Canadian) Listing

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

WHMIS Classification

D2B

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

MA Right To Know Law

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

PA Right To Know Law

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

NJ Right To Know Law

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

California Proposition 65

This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.

SARA Title III Sect. 302 (EHS)

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

SARA Title III Sect. 304

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



A UTC Fire & Security Company

MATERIAL SAFETY DATA SHEET

Commercial ABC Dry Chemical
(Fire Extinguishing Agent)

15. REGULATORY INFORMATION

SARA Title III Sect. 311/312 Categorization

- Immediate (Acute) Health Hazard

SARA Title III Sect. 313

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

16. OTHER INFORMATION

NFPA Ratings

NFPA Code for Health - 1

NFPA Code for Flammability - 0

NFPA Code for Reactivity - 0

NFPA Code for Special Hazards - None

HMIS Ratings

HMIS Code for Health - 1

HMIS Code for Flammability - 0

HMIS Code for Reactivity - 0

HMIS Code for Personal Protection - See Section 8

Abbreviations

N/A: Denotes no applicable information found or available

CAS#: Chemical Abstracts Service Number

ACGIH: American Conference of Governmental Industrial Hygienists

OSHA: Occupational Safety and Health Administration

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit

NTP: National Toxicology Program

IARC: International Agency for Research on Cancer

R: Risk

S: Safety

Prepared By: EnviroNet LLC.

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



BADGER FIRE PROTECTION, INC.

MATERIAL SAFETY DATA SHEET

Emergency # (800) 424-9300

4251 Seminole Trail
Charlottesville, VA 22911 (804) 973-4361

Date: April, 1999

SECTION 1 NAME & HAZARD SUMMARY

Material name: BCF (Halon 1211)

Manufacturer: ICI Americas Inc., Wilmington, Delaware 19897 • Phone (302) 575-3000 (24 Hours)

Hazard summary (as defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200):

Physical hazards: Compressed gas

Health hazards: Harmful (central nervous system depression, cardiac arrhythmias)

Read the entire MSDS for a more thorough evaluation of the hazards.

SECTION 2 INGREDIENTS

Bromochlorodifluoromethane (CAS 353-59-3) 100% TLV (ACGIH) Not listed

Ingredients not precisely identified are proprietary or nonhazardous. All ingredients appear on the EPA TSCA Inventory. Values are not product specifications. gt = greater than, lt = less than, ca = approximately

SECTION 3 PHYSICAL DATA

Boiling point: 26°F

Vapor pressure: 15 psig at 15.6°C

Vapor density (air = 1): 5.7

Solubility in water: Insoluble

pH: No data

Specific gravity: 1.83 (liquid)

% Volatile by volume: 100

Appearance and odor: Colorless gas or colorless volatile liquid with very faint sweet odor

SECTION 4 FIRE AND EXPLOSION HAZARD DATA

Flash point (and method): DOES NOT FLASH

Autoignition temp.: NONE

Flammable limits (STP): None

Extinguishing media: Not applicable; product is an extinguishing agent. Use water to cool fire-exposed cylinders or other containers.

Special fire fighting protective equipment: Self-contained breathing apparatus with full facepiece and protective clothing when re-entering unventilated fire areas where product has been used.

Unusual fire and explosion hazards: When BCF is discharged onto a fire, it decomposes above 900°F, releasing bromide ions, the extinguishing agent. However, halogen compounds, such as halogen acids, are also formed. These byproducts, although harmful if inhaled, are easily detected; only a few parts per million create an unpleasant, acrid odor, which serves as a warning to the user. After the extinguisher is discharged, the area should be vacated until ventilation clears the atmosphere.

SECTION 5 REACTIVITY DATA

Stability: Stable under normal conditions. Decomposes under fire conditions (above 900°F).

Incompatibility (materials to avoid): Active metals such as powdered aluminum and magnesium, and fires of metal hydrides.

Hazardous decomposition products: Thermal decomposition: BCF begins decomposing at temperatures above 900°F to give free halogens, halogen acids, and small amounts of carbonyl halides. Tests simulating fire conditions could not detect phosgene in amounts as low as 0.04 ppm.

Hazardous polymerization: Will not occur.



SECTION 6 HEALTH HAZARD ASSESSMENT

General: The health hazard assessment is based on a combination of available toxicity information and human experience.

Ingestion: Ingestion is not likely to occur since this material is a gas at room temperature.

Eye contact: The liquid form of this material can produce chilling sensations and discomfort.

Skin contact: Evaporation of liquid from the skin can produce chilling sensations. Skin injury does not result.

Skin absorption: Systematically toxic concentrations are unlikely to be absorbed through the skin in man.

Inhalation: Exposures to concentrations of this material above 4% for longer than one minute can cause toxic side effects.

Other effects of overexposure: Prolonged exposures can cause dizziness, headache, nausea, impaired coordination progressing to unconsciousness. In susceptible individuals, cardiac sensitization to circulating epinephrine compounds can result in potentially fatal heart arrhythmias.

First aid procedures:

Skin: Wash material off the skin with copious amounts of soap and water. If redness, itching or a burning sensation develops, get medical attention.

Eyes: Immediately flush with copious amounts of water for at least 15 minutes. If redness, itching or a burning sensation develops, have eyes examined and treated by medical personnel.

Ingestion: Give 1 or 2 glasses of warm water to drink and get medical attention. *DO NOT* induce vomiting. Have victim lie down and keep warm. (Never give anything by mouth to an unconscious person.)

Inhalation: Remove victim to fresh air. If cough or other respiratory symptoms develop, consult medical personnel. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Consult medical personnel.

Note to Physician: Product can induce cardiac muscle sensitization to circulating epinephrine-like compounds. *DO NOT* give adrenaline or similar sympathomimetic drugs. *DO NOT* allow a victim to exercise until 24 hours following specific exposures. Freeze burns of mucosal tissue can develop following contact with liquid form of this material.

SECTION 7 SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled: Ventilate spill area and recover any liquid. Protect against frostbite from evaporating liquid.

Disposal method: Not applicable

Container disposal: Not applicable

SECTION 8 SPECIAL PROTECTION INFORMATION

TLV or suggested control value: No TLV assigned by ACGIH. ICIA operates its facilities such that employee exposure to this material is kept below 1000 ppm as an 8-hour TWA.

Ventilation: Ventilate low-lying areas, such as, sumps or pits where dense vapors may collect. Use local exhaust to control exposures.

Respiratory protection (specify type): Not normally needed if controls are adequate. If needed, use MSHA/NIOSH approved respirator for organic vapors. For high concentrations and oxygen-deficient atmospheres. Use positive pressure air-supplied respirator.

Protective clothing: Impervious gloves and apron to protect against liquid exposure.

Eye protection: Chemical tight goggles; full faceshield in addition if splashing is possible.

Other protective equipment: Eyewash station and safety shower in work area when working with liquified product.

SECTION 9 SPECIAL PRECAUTIONS OR OTHER COMMENTS

Precautions to be taken in handling or storing: Store in a cool area with good ventilation. Keep vapors away from high temperature surfaces to avoid toxic and corrosive decomposition products. Enforce "NO SMOKING" rules in areas of use.

1. IDENTIFICATION

Product Name	FM-200® (Fire Extinguishing Agent with Expellant)
Other Names	Heptafluoropropane, HFC-227ea
Recommended use of the chemical and restrictions on use	
Identified uses	Fire Extinguishing Agent
Restrictions on use	Consult applicable fire protection codes
Company Identification	Kidde-Fenwal, Inc. 400 Main Street Ashland, MA 01721 USA
Customer Information Number	(508) 881-2000
Emergency Telephone Number	
Chemtrec Number	(800) 424-9300 (703) 527-3887 (International)
Issue Date	April 10, 2015
Supersedes Date	February 9, 2015

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

2. HAZARD IDENTIFICATION

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. Exposure to vapor at high concentrations can cause cardiac sensitization and suffocation if air is displaced by vapors.

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

Synonyms: Heptafluoropropane

This product is a substance.

Component	CAS Number	Concentration
1,1,1,2,3,3,3-Heptafluoropropane	431-89-0	>99.9%

Note: The expellant is nitrogen.

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

Flush with water. 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.**

The use of epinephrine 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

FM-200® 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

Wear full protective clothing and self-contained breathing apparatus. Remove leaking cylinder to a safe place. Ventilate the area. Leaks inside confined spaces may cause suffocation as vapors may displace air, and should not be entered without a self-contained breathing apparatus.

Environmental Precautions

Prevent the material from being released into the environment.

Methods and materials for containment and cleaning up

Material evaporates.

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.

1,1,1,2,3,3,3-Heptafluoropropane

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 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. For other applications creating oxygen deficient atmospheres, use a self contained breathing apparatus, as an air purifying respirator will not provide protection.

Skin Protection

Wear rubber gloves. Avoid contact with skin.

Eye/Face Protection

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

Body Protection

Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Agent – FM-200®

Appearance

Physical State	Liquefied gas under pressure
Color	Colorless
Odor	Slight ether like
Odor Threshold	No data available
pH	Neutral
Specific Gravity	1.46
Boiling Range/Point (°C/F)	-16.4°C/3 °F
Melting Point (°C/F)	-129.5°C/265 °F
Flash Point (PMCC) (°C/F)	Not flammable
Vapor Pressure	540 hPa at -30 °C 29,360 hPa at 123 °C
Evaporation Rate (BuAc=1)	Not applicable
Solubility in Water	0.23 g/l at 25°C
Vapor Density (Air = 1)	5.8
VOC (%)	Not applicable
Partition coefficient (n-octanol/water)	2289
Viscosity	Not applicable
Auto-ignition Temperature	No data available
Decomposition Temperature	No data available

9. PHYSICAL AND CHEMICAL PROPERTIES

Upper explosive limit	Not explosive
Lower explosive limit	Not explosive
Flammability (solid, gas)	Not flammable
Expellant - Nitrogen	
Appearance	
Physical State	Compressed gas
Color	Colorless
Odor	None
Odor Threshold	No data available
pH	Not applicable
Specific Gravity	0.075 lb/ft ³ @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
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

Decomposes on heating. 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

Heat - High temperatures - Exposure to direct sunlight

Incompatible Materials

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

Hazardous Decomposition Products

Oxides of carbon – hydrogen halides – fluorocarbons – carbonyl halides

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

FM-200®

4 hour LC50(rat) >788,698 ppm

Low Observed Adverse Effect Concentration (LOAEC)/dog : 105000 ppm

Cardiac sensitization

No Observed Adverse Effect Concentration (NOAEC)/dog : 90000 ppm

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

Specific Target Organ Toxicity (STOT) – repeat exposure

No relevant studies identified.

Serious Eye damage/Irritation

Not expected to cause eye irritation based on review of properties of the substance.

Skin Corrosion/Irritation

Not expected to cause skin irritation based on review of properties of the substance.

Respiratory or Skin Sensitization

FM-200®: Not expected to cause skin sensitization based on review of properties of the substance. Did not cause respiratory sensitization in laboratory animals.

Carcinogenicity

Not considered carcinogenic by NTP, IARC, and OSHA.

Germ Cell Mutagenicity

FM-200®: Animal testing and testing on bacterial or mammalian cell cultures did not show mutagenic effects.

Reproductive Toxicity

FM-200®: Animal testing showed no reproductive toxicity. (Based on data obtained from similar substances.) Animal testing showed no developmental toxicity.

Aspiration Hazard

Not an aspiration hazard.

Other

FM-200®: Cardiac sensitization threshold limit : 730190 mg/m3

12. ECOLOGICAL INFORMATION

Ecotoxicity

FM-200®

LC50 > 200 mg/l zebra fish 96h

EC50 > 200 mg/l Water flea 48h

12. ECOLOGICAL INFORMATION

Mobility in soil

No relevant studies identified.

Persistence/Degradability

Not readily biodegradable.

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. Specific volumes, pressures or hardware configurations containing such materials can dictate various different hazard classifications for transportation and labelling requirements. Under Federal Regulations only trained and qualified individuals are permitted to label and ship products following the applicable Department of Transportation (DOT), Federal Aviation Administration (FAA), Transport Canada (TC), International Maritime Dangerous Goods (IMDG) or International Air Transport Association (IATA) requirements.

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 any chemicals 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

16. OTHER INFORMATION

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

IARC: International Agency for Research on Cancer

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

Information Source and References

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

Revision Date: April 10, 2015

Replaces: February 9, 2015

Changes made: Updated to GHS Classification.

Prepared By: EnviroNet LLC.

FM-200 is a registered trademark of DuPont.

The information and recommendations presented in this SDS are based on sources believed to be accurate. Kidde-Fenwal, Inc. 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.



MATERIAL SAFETY DATA SHEET

By Tyco Fire Suppression & Building Products

PYRO-CHEM Wet Chemical Solution

Product Code: 1070-2-004 ANa

Issue Date: 07-16-2010

1. Product and Company Identification

Material name PYRO-CHEM Wet Chemical Solution
 Version # 01
 Revision date 07-16-2010
 CAS # Mixture
 Product Code 1070-2-004 ANa
 Product use Fire extinguishing agent
 Manufacturer / Importer / Supplier
 Name Tyco Fire Suppression and Building Products
 Address One Stanton Street
 Marinette, WI 54143-2542
 Phone 715-732-3465
 Internet <http://www.pyrochem.com>
 Emergency Phone Number CHEMTREC 800-424-9300 or 703-527-3887

2. Hazards Identification

Emergency overview DANGER
 Corrosive. Causes skin and eye burns.

OSHA regulatory status This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

Potential health effects
 Routes of exposure Eye contact. Skin contact. Inhalation. Ingestion.
 Eyes Do not get this material in contact with eyes. Corrosive to the eyes and may cause severe damage including blindness.
 Skin Harmful if absorbed through skin. Causes chemical burns. Do not get this material in contact with skin.
 Inhalation None known.
 Ingestion Harmful if swallowed. Do not ingest.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Potassium carbonate	584-08-7	40 - 60
Other components below reportable levels		40 - 60

4. First Aid Measures

First aid procedures
 Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation persists after washing.
 Skin contact Wash off with warm water and soap. Get medical attention if irritation develops and persists.
 Inhalation Move to fresh air. For breathing difficulties, oxygen may be necessary. Get medical attention, if needed.
 Ingestion Rinse mouth. Do not induce vomiting without advice from poison control center. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Notes to physician Symptoms may be delayed.

General advice If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire Fighting Measures

Flammable properties	No unusual fire or explosion hazards noted.
Extinguishing media	
Suitable extinguishing media	This product is not flammable. Use extinguishing agent suitable for type of surrounding fire.
Protection of firefighters	
Specific hazards arising from the chemical	None known.
Specific methods	None known.
Hazardous combustion products	None known.

6. Accidental Release Measures

Personal precautions	Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Surfaces may become slippery after spillage. Keep upwind.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.
Methods for containment	Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewer, basements or confined areas.
Methods for cleaning up	Should not be released into the environment. Large Spills: Dike far ahead of spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Never return spills in original containers for re-use. Following product recovery, flush area with water. Clean surface thoroughly to remove residual contamination.

7. Handling and Storage

Handling	Do not get this material in contact with eyes. Avoid contact with skin. Avoid prolonged exposure. Handle and open container with care.
Storage	Store in cool place. Store in a well-ventilated place. Keep container tightly closed. Keep out of the reach of children. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Engineering controls	Ensure adequate ventilation, especially in confined areas.
Personal protective equipment	
Eye / face protection	Avoid contact with eyes. Chemical goggles are recommended.
Skin protection	Avoid contact with the skin. Wear suitable protective clothing.
Respiratory protection	No personal respiratory protective equipment normally required.
General hygiene considerations	Avoid contact with eyes. Avoid contact with skin. Wash hands before breaks and immediately after handling the product.

9. Physical & Chemical Properties

Appearance	
Form	Liquid.
Color	Clear. Colorless.
Odor	Odorless.
Physical state	Liquid.
pH	11 - 13
Melting point	Not available.
Freezing point	Not available.
Boiling point	230 °F (110 °C)
Flash point	Not available.
Evaporation rate	Not available.

Flammability limits in air, upper, % by volume Not available.
Flammability limits in air, lower, % by volume Not available.
Vapor pressure Not available.
Vapor density Not available.
Specific gravity 1.4
Relative density Not available.
Solubility (water) Not available.
Partition coefficient (n-octanol/water) Not available
Auto-ignition temperature Not available.
Decomposition temperature Not available.
VOC Not available.

10. Chemical Stability & Reactivity Information

Chemical stability Material is stable under normal conditions.
Conditions to avoid None known.
Incompatible materials Strong acids. Alkaline metals.
Hazardous decomposition products None known.

11. Toxicological Information

Toxicological information The toxicity of this product has not been tested.

Toxicological data

Components

Test Results

Potassium carbonate (584-08-7)

Acute Oral LD50 Mouse: 2570 mg/kg

Acute Oral LD50 Rat: 1870 mg/kg

Local effects Irritating to eyes. Irritating to skin.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

12. Ecological Information

Environmental effects An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Persistence and degradability Not available.

13. Disposal Considerations

Disposal instructions This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

Waste from residues / unused products Dispose of in accordance with local regulations.

14. Transport Information

DOT

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
 All components are on the U.S. EPA TSCA Inventory List.
 CERCLA/SARA Hazardous Substances - Not applicable.

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
 Acute Health - Yes
 Chronic Health - No
 Fire Hazard - No
 Pressure Hazard - No
 Reactivity Hazard - No

Section 302 extremely hazardous substance No

Section 311 hazardous chemical No

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

16. Other Information

Further information HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings
 Health: 2
 Flammability: 0
 Physical hazard: 0

NFPA ratings
 Health: 2
 Flammability: 0
 Instability: 0

Disclaimer The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Issue date 07-16-2010

STRIKE FIRST CORPORATION

777 Tapscott Road
Scarborough, Ontario
M1X 1A2

MATERIAL SAFETY DATA SHEET

Prepared to US OSHA, CMA, ANSI and Canadian WHMIS Standards

Section 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME (AS LABELED): WET CHEMICAL SOLUTION (SF-6LK)
PRODUCT USE: Fire Extinguishing Agent
MANUFACTURER'S NAME: STRIKE FIRST CORPORATION
ADDRESS: 777 Tapscott Road
Scarborough, ON
M1X 1A2
BUSINESS PHONE: 416.299.7767
DATE OF REVISION: Feb. 6, 2015

Section 2. HAZARDS IDENTIFICATION

Emergency overview: Corrosive. Causes skin and eye irritation
Potential acute health effects
Routes of entry: Skin contact. Eye contact. Inhalation. Ingestion.

Eyes: Do not get this material in contact with eyes. Corrosive to the eyes and may cause severe damage including severe irritation

Skin: May cause mild skin irritation. Prolonged contact may cause dryness of the skin.

Inhalation: May irritate respiratory tract. May cause transient cough or shortness of breath

Ingestion: Harmful if swallowed. Do not ingest.

Potential chronic health effect: Carcinogenic effects: Not classified or listed by IARC, NTP, OSHA, EU and ACGIH.
Mutagenic effects: Not available.
Teratogenic effects: Not available.
Reproductive effects: Not available

Section 3. COMPOSITION, INFORMATION ON INGREDIENTS

Components:

Potassium Citrate:	Concentration 1 - 10 %	CAS NUMBER 6100-05-6
Potassium Acetate:	Concentration 20 - 30 %	CAS NUMBER 127-08-2
Water:	Concentration 50 - 60 %	CAS NUMBER 7732-18-5

Section 4. FIRST AID MEASURES

Prompt medical attention is mandatory in all cases of overexposure to this solution.

- Eye contact:** Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation persists after washing.
- Skin Contact:** Wash off with warm water and soap. Get medical attention if irritation develops and persists.
- Inhalation:** Move to fresh air. For breathing difficulties, oxygen may be necessary. Get medical attention, if needed.
- Ingestion:** Rinse mouth. Do not induce vomiting without advice from poison control center. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
- Notes to physician:** Treat symptomatically. Symptoms may be delayed.

Section 5. FIRE FIGHTING MEASURES

Flammability of the product: Non-flammable.

Extinguishing media:

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire. 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.

Special protective equipment for fire-fighters:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with full face-piece operated in positive pressure mode.

Section 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions:** EVACUATE ALL PERSONNEL FROM AFFECTED AREA
Local authorities should be advised if significant spillages cannot be contained. Surfaces may become slippery after spillage. Keep upwind.
- Environmental precautions:** Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.
- Methods for cleaning up:** Should not be released into the environment.
Large Spills: Dike far ahead of spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.
Small Spills: Wipe up with absorbent material (e.g. cloth, fleece).

Never return spills in original containers for re-use. Following product recovery, flush area with water. Clean surface thoroughly to remove residual contamination.

Section 7. HANDLING AND STORAGE

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

Handling: Do not get this material in contact with eyes. Avoid contact with skin. Avoid prolonged exposure. Handle and open container with care.

Storage: Store in cool place. Store in a well-ventilated place. Keep container tightly closed. Keep out of the reach of children. Use care in handling/storage.

Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: Use only in well-ventilated areas.

Personal protection

Respiratory: Use supplied air respiratory protection if required. If respiratory protection is required, follow the requirements of the Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), or equivalent State standard.

Hands: Wear glove protection appropriate to the specific operation for which this gas is used.

Eyes: Safety glasses with side shields.

Skin/Body: Use body protection appropriate for task. Pressurized product may require use of fire retardant clothing. Metal cap safety shoes, are recommended when handling cylinders.



Some applications of this product may require additional or other specific protective clothing. Please consult your supervisor.

Personal protection: Safety glasses with side shields, goggles or face shield. Impervious gloves. Protective clothing. Metal cap safety shoes.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid.
Color: Colorless.
Odor: Mild Odor.
Boiling/condensation point: 110C (230F).
Melting/freezing point: Not available
pH: 8 - 9.
Specific gravity: 1.1 - 1.2
Vapor density: Not available (Air = 1).
Solubility (@20C): Soluble in the following materials: water.

Section 10. STABILITY AND REACTIVITY

Stability and reactivity: This product is stable.
Incompatibility: Strong oxidizing agents.
Hazardous decomposition products: Not known.
Hazardous polymerization: Carbon oxides, potassium oxides

Section 11. TOXICOLOGICAL INFORMATION**Acute Effects**

Inhalation:	None expected.
Skin:	Prolonged contact may cause dryness to skin.
Eyes:	May cause temporary eye irritation.
Ingestion:	No harmful effects expected in amounts likely to be ingested by accident.
Potential chronic health effects:	Carcinogenic effects: Not classified or listed by IARC, NTP, OSHA, EU, ACGIH. Mutagenic effects: Not available Teratogenic effects: Not available

Section 12. ECOLOGICAL INFORMATION

Mobility:	No relevant studies identified
Persistence/Degradability:	No relevant studies identified
Bio-accumulation:	No relevant studies identified
Ecotoxicity:	No relevant studies identified

Section 13. DISPOSAL CONSIDERATION

Disposal:	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.
Waste from residues:	Dispose of in accordance with local regulations.

Section 14. TRANSPORTATION INFORMATION

DOT/TC:	Not regulated
UN Proper Shipping Name:	Not regulated
UN Class:	None
UN Number:	None
UN Packaging Group:	None

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

Section 15. REGULATORY INFORMATION**US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS**

TSCA Listing:	This product contains ingredients that are listed on or exempt from listing on the EPA Toxic Substance Control Act Chemical Substance Inventory.
EINECS Listing:	All ingredients in this product are listed on the European Inventory of Existing Commercial Chemical Substances (EINECS) or are exempt from listing.
DSL/NDSL (Canadian) Listing:	All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.
WHMIS Classification:	D2B This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

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

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

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

California Proposition 65: This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.

SARA Title III Sect. 302 (EHS): This product does not contain any chemicals subject to SARA Title III Section 302.

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

SARA Title III Sect. 311/312 Categorization: - Immediate (Acute) Health Hazard

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

Section 16. OTHER INFORMATION

WHMIS (Canada):
Information System (USA)

HEALTH (BLUE)	1
FIRE HAZARD (RED)	0
REACTIVITY (YELLOW)	0
PERSONAL PROTECTION (WHITE)	G



Consult an Industrial Hygienist or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death.

- Acronyms:**
- ACGIH: American Conference of Governmental Industrial Hygiene.
 - IARC: International Agency for Research on Cancer.
 - NIOSH: National Institute of Occupational Safety and Health.
 - OSHA: Occupational Safety and Health Administration
 - NTP: National Toxicology program.
 - SARA: Superfund Amendments and Reauthorization Act.
 - PEL: Permissible Exposure Limit.
 - IDLH: Immediately Dangerous to Life and Health.
 - NE: Not established.
 - C: Ceiling Limit.
 - DSL: Domestic Substance List.
 - NDSL: Non-Domestic Substance List.
 - CFR: Code of Federal Regulations.
 - TSCA: Toxic Substance Control Act.

Notice to reader
 This Material Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200, American National Standard Institute Z400.1, 2004, the Canadian Workplace Hazardous Material Information Systems (WHMIS). Other government regulations must be reviewed for applicability to this mixture. To the best of Strike First's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this mixture is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.

