

MATERIAL SAFETY DATA SHEET

Section 1. Chemical product and company identification

Product Name: Liquid Foam Concentrate
Synonym: Film Forming Foam Fluoroprotein/
FFFP Concentrate
Manufacturer: AMEREX CORPORATION
Internet Address: www.amerex-fire.com
Address: 7595 Gadsden Highway
P.O. Box 81
Trussville, AL 35173-0081
Telephone: (205) 655-3271
Emergency Contacts: Chemtrec 1(800) 424-9300 or
(703) 527-3887
Revised: August, 2003

Section 2. Hazard identification and emergency overview

Emergency overview: dark brown, viscous liquid with an organic odor.

Adverse health effects and symptoms: Irritating to the eyes and skin, and may cause gastric distress. Symptoms may include eye pain, skin redness, and irritation. Ingestion, although unlikely, may cause cramps, nausea and diarrhea.

Exposure guidelines:

Ingredients	OSHA PEL	ACGIH TLV	DFG MAK *
Water	NR	NR	NR
Hydrolyzed Protein	NR	NR	NR
Hexylene Glycol	25 ppm, ceiling	25 ppm, ceiling	10 ppm, 8 hr.TWA
Preservatives, Fluorosurfactants and Surface Active Agents	NR	NR	NR

*German regulatory limits NR = Not Regulated

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

D2B – Product may irritate skin or mucous membranes

Section 3. Composition/information on ingredients

Name/Compound	Weight %	CAS #
Water	>53%	7732-18-5
Hydrolyzed Protein	<30 %	None
Hexylene Glycol	<10%	107-41-5
Preservatives, Fluorosurfactants and Surface Active Agents	Balance	Proprietary

Section 4. First Aid Measures

Eye Exposure: Irrigate eyes at eye wash station for 15 minutes or until pain free. Seek medical attention if irritation develops or persists, or if visual changes occur.

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

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

Ingestion: If victim is conscious and alert, give 2-3 glasses of water or milk to drink. 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. If vomiting occurs and the victim is conscious, give water to further dilute the chemical.

Medical conditions possibly aggravated by exposure: Skin contact may aggravate existing skin conditions such as dermatitis.

Section 5. Fire fighting measures

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

Unusual fire/explosion hazards: in a fire this concentrate may decompose, releasing oxides of sulfur, nitrogen, and carbon as well as hydrogen cyanide, hydrogen sulfide,

and ammonia (see Section 10). At usage concentrations thermal decomposition does not produce these hazards.

Insensitive to mechanical impact or static discharge.

HMIS Hazard Ranking:

health = 1, flammability = 0, reactivity = 0, personal protective equipment: ½ mask
APR w/organic vapor cartridges, eye and skin protection (see Section 8)

Section 6. Accidental release measures

Large spills (one drum or more) should be addressed by hazardous materials technicians following a site-specific emergency response plan and trained in the appropriate use of PPE. Clean up released concentrate using sorbent socks for containment, followed by sorbent material inside containment. Wear appropriate APR for glycols (Section 8). Bag and drum for disposal. If product is contaminated, for example if mixed with fuel, use PPE and containment appropriate to the nature of the mixture. Prevent concentrate from entering storm sewer. Handle and dispose of as a hazardous waste unless testing indicates otherwise. Decontaminate with detergent and water.

Section 7. Handling and storage

Avoid eye, respiratory, and skin exposure. Use appropriate PPE (personal protective equipment) when handling, and wash thoroughly after handling (Section 8). Keep product in original container until use by trained personnel. Clean used equipment with soap and water before storage. Use this product only in well ventilated areas. Do not mix with other extinguishing agents.

Section 8. Exposure controls/ personal protection

During the application of this product against fires, exhaust gases and the products of incomplete combustion (PICs) are the principal respiratory hazards. In the manufacture of extinguishers, automated systems and point source ventilation controls sufficiently minimize respiratory exposure. Employers and employees must use their collective judgment in determining occupational settings where the use of an air

purifying respirator is prudent. The need for respiratory protection is not likely for short-term use in well ventilated areas.

Respiratory protection: use ½ mask air purifying respirator (APR) with organic vapor or universal cartridges for limited exposure, use powered air-purifying respirator (PAPR) with organic vapor canisters for prolonged exposure.

Eye protection: wear chemical goggles.

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

Section 9. Physical and chemical properties

Appearance: dark brown, viscous liquid with organic vapor.

Specific gravity: ~ 1.1

Solubility: soluble in water

Non –flammable

Flash point: none

Vapor pressure: < 10 mm Hg at room temperature

pH: approximately 6.5 – 7.5

Boiling point: ~100° C

No explosive or oxidizing properties

Section 10. Stability and reactivity

Stability: stable

Incompatibles: strong acids, strong alkalis, and strong oxidizers such as calcium or sodium hypochlorite (bleach).

Decomposition products: heat of fire may release from concentrate carbon monoxide, carbon dioxide, sulfur dioxide, nitrogen oxides, hydrogen cyanide, hydrogen sulfide, and ammonia. Usable, diluted product does not generate these emissions.

Possibility of hazardous reactions: none

Section 11. Toxicological information

Acute toxicity: Hexylene glycol: LD₅₀ oral rat: 3700 mg/kg body weight

Target organs in man: DFG MAK: local irritant to the respiratory system, eyes, and skin.

TCLo (lowest published toxic concentration):

Inhalation – human, 50 ppm/15 minutes -
changes in olfaction, respiration, conjunctiva

Chronic toxicity: This product's ingredients are not considered as "probable" or "suspected" carcinogens by OSHA, IARC, or ACGIH. Product is not known to cause sensitization, however, repeated or prolonged contact with skin may cause dermatitis.

Reproductive
toxicity:

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

Section 12. Ecological information

Ecotoxicity: Discharge of large volumes of product into waterways will have an adverse effect on local aquatic life.

Persistence/

Degradability: degrades rapidly in humid/wet environment

Bioaccumulation: extent unknown

Mobility in soil: Low evaporation rate and water solubility will allow this material to leach into groundwater from a surface release with moderate biodegradation

Section 13. Disposal considerations

This product is not a RCRA characteristically hazardous or listed hazardous waste. Dispose of according to state or local laws, which may be more restrictive than federal

laws or regulations. Used product will be diluted and may be altered or contaminated, creating different disposal considerations.

Section 14. Transportation information

This product is not a hazardous material under U.S. Department of Transportation (DOT) 49 CFR 172, and is not regulated by the DOT.

Section 15. Regulatory information

International Inventory Status

Hexylene glycol (<10% of product) is on the following inventories

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

European Risk and Safety phrases:

Component: Hexylene glycol

EU Classification: Xi Irritant
R Phrases: 36/38 Irritating to eyes, respiratory system, and skin.
S Phrases: 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

U.S. federal regulatory information:

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

State regulatory information:

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

Alaska - Designated Toxic and Hazardous Substances: hexylene glycol
California - Permissible Exposure Limits for Chemical Contaminants: hexylene glycol
Florida - Substance List: hexylene glycol
Illinois - Toxic Substance List: hexylene glycol
Kansas - Section 302/303 List: None
Massachusetts - Substance List: hexylene glycol
Minnesota - List of Hazardous Substances: hexylene glycol
Missouri - Employer Information/Toxic Substance List: hexylene glycol
New Jersey - Right to Know Hazardous Substance List: hexylene glycol
North Dakota - List of Hazardous Chemicals, Reportable Quantities: None
Pennsylvania - Hazardous Substance List: None
Rhode Island - Hazardous Substance List: hexylene glycol
Texas - Hazardous Substance List: None
West Virginia - Hazardous Substance List: None
Wisconsin - Toxic and Hazardous Substances: None

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

Section 16. Other information

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

The information herein is given in good faith but no warranty, expressed or implied, is made.

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

BOC GASES

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: CARBON DIOXIDE, GAS

1. Product and Company Identification

BOC Gases,
Division of,
The BOC Group, Inc.
575 Mountain Avenue
Murray Hill, NJ 07974

BOC Gases
Division of
BOC Canada Limited
5975 Falbourne Street, Unit 2
Mississauga, Ontario L5R 3W6

TELEPHONE NUMBER: (908) 464-8100
24-HOUR EMERGENCY TELEPHONE NUMBER:
CHEMTREC (800) 424-9300

TELEPHONE NUMBER: (905) 501-1700
24-HOUR EMERGENCY TELEPHONE NUMBER:
(905) 501-0802
EMERGENCY RESPONSE PLAN NO: 2-0101

PRODUCT NAME: CARBON DIOXIDE, GAS
CHEMICAL NAME: Carbon Dioxide
COMMON NAMES/SYNONYMS: Carbonic Anhydride
TDG (Canada) CLASSIFICATION: 2.2
WHMIS CLASSIFICATION: A

PREPARED BY: Loss Control (908)464-8100/(905)501-1700
PREPARATION DATE: 6/1/95
REVIEW DATES: 11/18/03

2. Composition, Information on Ingredients

EXPOSURE LIMITS¹:

INGREDIENT	% VOLUME	PEL-OSHA ²	TLV-ACGIH ³	LD ₅₀ or LC ₅₀ Route/Species
Carbon Dioxide FORMULA: CO ₂ CAS: 124-38-9 RTECS #: FF6400000	99.8 TO 99.999	5000 ppm TWA	5000 ppm TWA 30,000 ppm STEL	Not Available

¹ Refer to individual state or provincial regulations, as applicable, for limits which may be more stringent than those listed here.

² As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993)

³ As stated in the ACGIH 2003 Threshold Limit Values for Chemical Substances and Physical Agents.
IDLH (Carbon Dioxide): 40,000 ppm

OSHA Regulatory Status: This material is classified as hazardous under OSHA regulations.

3. Hazards Identification

EMERGENCY OVERVIEW

Odorless, colorless, nonflammable gas. Simple Asphyxiant - This product does not contain oxygen and may cause asphyxia if released in a confined area. Maintain oxygen levels above 19.5%. Carbon dioxide acts as a weak narcotic at high concentrations (30,000 ppm). Inhalation of high concentrations of carbon dioxide can cause reduced hearing acuity, changes in respiration and increased blood pressure and pulse. Contents under pressure. Use and store below 125 °F.

PRODUCT NAME: CARBON DIOXIDE, GAS

ROUTE OF ENTRY:

Skin Contact No	Skin Absorption No	Eye Contact No	Inhalation Yes	Ingestion No
--------------------	-----------------------	-------------------	-------------------	-----------------

HEALTH EFFECTS:

Exposure Limits Yes	Irritant No	Sensitization No
Teratogen No	Reproductive Hazard No	Mutagen No
Synergistic Effects None reported		

Carcinogenicity: -- NTP: No IARC: No OSHA: No

EYE EFFECTS:

Liquid and cold vapor may cause tissue freezing.

SKIN EFFECTS:

May cause frostbite.

INGESTION EFFECTS:

No adverse effects anticipated.

INHALATION EFFECTS:

Depending on concentration and duration of exposure carbon dioxide may cause increased respiration, headache, mild narcotic effects, increased blood pressure and pulse, and asphyxiation. Symptoms of overexposure to carbon dioxide become more apparent when atmospheric oxygen is decreased to 15-17%. Chronic harmful effects are not known from repeated inhalation of concentrations below the PEL/TLV.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

POTENTIAL ENVIRONMENTAL EFFECTS: Not expected to be toxic to fish and wildlife.

4. First Aid Measures

EYES:

For liquid or cold vapor, flush eyes with lukewarm water and obtain immediate medical attention.

SKIN:

For frostbite, immediately warm affected area with lukewarm water (< 105 °F).

INGESTION:

Not anticipated.

INHALATION:

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO CARBON DIOXIDE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given mouth-to-mouth resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.

PRODUCT NAME: CARBON DIOXIDE, GAS

5. Fire Fighting Measures

Conditions of Flammability: Nonflammable		
Flash point: None	Method: Not Applicable	Autoignition Temperature: None
LEL(%): None	UEL(%): None	
Hazardous combustion products: None		
Sensitivity to mechanical shock: None		
Sensitivity to static discharge: None		

FIRE AND EXPLOSION HAZARDS:

Nonflammable. Cylinder may vent rapidly or rupture violently from pressure when involved in a fire situation.

EXTINGUISHING MEDIA:

None required. Use media appropriate for surrounding fire.

FIRE FIGHTING INSTRUCTIONS:

Firefighters should wear respiratory protection (SCBA) and full turnout or Bunker gear. Continue to cool fire-exposed containers until well after flames are extinguished.

6. Accidental Release Measures

Evacuate all personnel from affected area. Use appropriate protective equipment (See Section 8). Stop the flow of gas or remove cylinder to outdoor location if this can be done without risk. Ventilate enclosed areas. If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or container valve, contact the appropriate emergency telephone number listed in Section 1 or call your closest BOC location.

7. Handling and Storage

Electrical Classification: Non-Hazardous

Dry carbon dioxide can be handled in most common structural materials. Moist carbon dioxide is generally corrosive by its formation of carbonic acid. For applications with moist Carbon Dioxide, 316, 309 and 310 stainless steels may be used as well as Hastelloy[®] A, B, & C, and Monel[®]. Ferrous Nickel alloys are slightly susceptible to corrosion. At normal temperatures carbon dioxide is compatible with most plastics and elastomers.

Use only in well-ventilated areas. Carbon dioxide vapor is heavier than air and will accumulate in low areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the system. Do not insert any object (i.e.: screwdriver) into valve cap openings as this can damage the valve causing leakage.

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125°F (52°C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders being stored for excessive periods of time.

PRODUCT NAME: CARBON DIOXIDE, GAS

For additional storage recommendations, consult Compressed Gas Association's Pamphlet P-1, AV-7, G-6, G-6.1, G-6.2, G-6.3, G-6.5, G-6.7, G-6.9, PS-5 and TB-10.

Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid form in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, explosion, asphyxiation or a toxic exposure.

8. Exposure Controls, Personal Protection

ENGINEERING CONTROLS:

Use local exhaust in combination with general ventilation as necessary to control air contaminants to at or below acceptable exposure guidelines.

EYE/FACE PROTECTION: Safety goggles or glasses as appropriate for the job.

SKIN PROTECTION: Protective gloves of any material appropriate for the job.

RESPIRATORY PROTECTION:

For emergency release use a positive pressure NIOSH approved air-supplying respirator systems (SCBA or airline/escape bottle) using at a minimum Grade D air.

OTHER/GENERAL PROTECTION:

Safety shoes.

9. Physical and Chemical Properties

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Gas	
Vapor pressure at 70 °F	: 856	psia
Vapor density at 70 °F, 1 atm (Air = 1)	: 1.53	
Evaporation point	: Not Available	
Boiling point (CO2 Sublimes)	: -109.3	°F
	: -78.5	°C
Freezing point	: -69.8	°F
	: -56.6	°C
pH	: Not Available	
Specific gravity	: Not Available	
Oil/water partition coefficient	: Not Available	
Solubility (H ₂ O)	: High, 0.145	g/ml, @25 °C
Odor threshold	: Not Applicable	
Odor and appearance	: A colorless, odorless gas.	

10. Stability and Reactivity

STABILITY:

Stable

INCOMPATIBLE MATERIALS/CONDITIONS:

Certain reactive metals, hydrides, moist cesium monoxide, or lithium acetylene carbide diammino may ignite. Passing carbon dioxide over a mixture of sodium peroxide and aluminum or magnesium may explode.

PRODUCT NAME: CARBON DIOXIDE, GAS

HAZARDOUS DECOMPOSITION PRODUCTS:

Carbon monoxide and oxygen when heated above 3092 °F (1700°C). Carbonic acid is formed in the presence of moisture.

HAZARDOUS POLYMERIZATION:

Will not occur.

11. Toxicological Information

SKIN AND EYE: Adverse effects are not expected.

INHALATION: Acidosis, adrenal cortical exhaustion, and other metabolic stresses have resulted from prolonged continuous exposure to 1-2% carbon dioxide (10,000 ppm – 20,000 ppm). The ACGIH TLV of 5,000 ppm is expected to provide a good margin of safety from asphyxiation and undue metabolic stress provided sufficient oxygen levels are maintained in the air. Increased physical activity, duration of exposure, and decreased oxygen content can affect systemic and respiratory effects resulting from exposure to carbon dioxide.

OTHER: Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

Exposure of female rats to 60,000 ppm carbon dioxide for 24 hours has produced toxic effects to the embryo and fetus in pregnant rats. Toxic effects to the reproductive system have been observed in other mammalian species at similar concentrations.

Chronic, harmful effects are not known from repeated inhalation of low (3 to 5 molar %) concentrations.

12. Ecological Information

Product does not contain Class I or Class II ozone depleting substances. Not toxic. Will not bioconcentrate.

13. Disposal Considerations

Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED, WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to BOC Gases or authorized distributor for proper disposal.

14. Transport Information

PARAMETER	United States DOT	Canada TDG
PROPER SHIPPING NAME:	Carbon Dioxide	Carbon Dioxide
HAZARD CLASS:	2.2	2.2
IDENTIFICATION NUMBER:	UN 1013	UN 1013
SHIPPING LABEL:	NONFLAMMABLE GAS	NONFLAMMABLE GAS

PRODUCT NAME: CARBON DIOXIDE GAS

15. Regulatory Information

SARA TITLE III NOTIFICATIONS AND INFORMATION

SARA TITLE III HAZARD CLASSES:

Acute Health Hazard.

Sudden Release of Pressure Hazard

SARA TITLE III - SECTION 313 SUPPLIER NOTIFICATION:

This product does not contain toxic chemicals subject to reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372.

U.S. TSCA/Canadian DSL: All ingredients are listed on the U.S. Toxic Substances Control Act (TSCA) inventory or exempt from listing and on the Canadian Domestic Substance List (DSL).

California Proposition 65: This product does not contain ingredient(s) known to the State of California to cause cancer or reproductive toxicity.

Canadian Controlled Products Regulations (CPR): This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

16. Other Information

NFPA HAZARD CODES

Health: 1
Flammability: 0
Instability: 0

HMIS HAZARD CODES

Health: 0
Flammability: 0
Reactivity: 0

RATINGS SYSTEM

0 = No Hazard
1 = Slight Hazard
2 = Moderate Hazard
3 = Serious Hazard
4 = Severe Hazard

Note: The Reactivity Hazard Rating is based on the 2nd Edition of the National Paint and Coatings Association's (NPCA's) Hazardous Materials Identification System (HMIS[®]). Hazard ratings were based on the best available information at the time of the review. Ratings will be reassigned in accordance with Compressed Gas Association (CGA) guidelines as published in the future edition of CGA Pamphlet P-19.

ACGIH	American Conference of Governmental Industrial Hygienists
DOT	Department of Transportation
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
SARA	Superfund Amendments and Reauthorization Act
STEL	Short Term Exposure Limit
TDG	Transportation of Dangerous Goods
TLV	Threshold Limit Value
WHMIS	Workplace Hazardous Materials Information System

Compressed gas cylinders shall not be refilled without the express written permission of the owner. Shipment of a compressed gas cylinder which has not been filled by the owner or with his/her (written) consent is a violation of transportation regulations.

PRODUCT NAME: CARBON DIOXIDE, GAS

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES:

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

MATERIAL SAFETY DATA SHEET

Section 1. Chemical product and company identification

Product Name: ABC Dry Chemical Fire Extinguishant
Synonym: Multi-purpose Dry Chemical
Manufacturer: AMEREX CORPORATION
Internet Address: www.amerex-fire.com
Address: 7595 Gadsden Highway
P.O. Box 81
Trussville, AL 35173-0081
Telephone: (205) 655-3271
Emergency Contacts: Chemtrec 1(800) 424-9300 or
(703) 527-3887
Revised: August, 2003

Section 2. Hazard identification and emergency overview

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

Adverse health effects and symptoms: Irritating 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 cramps, nausea and diarrhea.

Exposure guidelines:

Ingredients	OSHA PEL	ACGIH TLV	DFG MAK *
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
Ammonium sulphate	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
Mica	6 mg/m ³	3 mg/m ³	NR
Attapulgate clay	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

Calcium carbonate	PNO Total dust, 15 mg/m ³ Respirable fraction, 5 mg/m ³	PNO Total dust, 10 mg/m ³ Respirable fraction, 3 mg/m ³	-----
Amorphous silica	143 mg/m ³ <u>80 mg/m³</u> or % SiO ₂	10 mg/m ³	4 mg/m ³
Yellow 14 pigment	NR	NR	NR

*German regulatory limits **PNO = 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.

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

D2B Product may irritate eyes, skin, or mucous membranes

Section 3. Composition/information on ingredients

Name/Compound	Weight %	CAS #
Mono-ammonium phosphate and Ammonium sulphate	94	7722-76-1 7783-20-2
Attapulgitte clay or Fullers earth magnesium aluminum silicate-contains >1% crystalline silica (quartz)	<3	12174-11-7 14808-60-7
Mica potassium aluminum silicate	1-2	12001-26-2
Silicone oil methyl hydrogen polysiloxane	<1	63148-57-2
Calcium carbonate	<1	1317-65-3
Amorphous silica precipitated synthetic zeolite	<1	112926-00-8
Yellow 14 pigment – di-azo dye	<1	5468-75-7

Section 4. First Aid Measures

Eye Exposure: Irrigate eyes at eye wash station and repeat until pain free. Seek medical attention if irritation develops or persists, or if visual changes occur.

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

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

Ingestion: If victim is conscious and alert, give 2-3 glasses of water to drink and 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. If vomiting occurs and the victim is conscious, give water to further dilute the chemical.

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

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

Unusual fire/explosion hazards: in a fire this material may decompose, releasing oxides of sulfur and carbon (see Section 10).

Insensitive to mechanical impact or static discharge.

HMIS Hazard Ranking:

health = 1, flammability = 0, reactivity = 0, personal protective equipment: ½ mask APR w/HEPA cartridges (see Section 8).

Section 6. Accidental release measures

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

Section 7. Handling and storage

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

Section 8. Exposure controls/ personal protection

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

Respiratory protection: use N95 dust mask or air-purifying respirator (APR) with high efficiency particulate air (HEPA) filters.

Eye protection: wear chemical goggles.

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

Section 9. Physical and chemical properties

Appearance: yellow powder, finely divided odorless solid.

Specific gravity: ~ 1.85

Solubility: not soluble in water

Non –flammable

Flash point: none

Vapor pressure: < 1 mm Hg

pH: approximately 4-5

Boiling point: not applicable

No explosive or oxidizing properties

Section 10. Stability and reactivity

Stability: stable

Incompatibles: strong alkalis (bases), magnesium, strong oxidizers such as calcium hypochlorite (pool chlorine) and isocyanuric acids.

Decomposition products: heat of fire may release carbon monoxide, carbon dioxide, and sulfur dioxide. Oxides of phosphorous and ammonia reported.

Possibility of hazardous reactions: none

Section 11. Toxicological information

Acute toxicity: Mono ammonium phosphate LD₅₀ (rat): > 1000mg/kg body weight
Ammonium sulfate LD₅₀ (rat): 2840 mg/kg body weight
Target organs in man: respiratory system, eyes, skin. This product is an irritant to epithelial tissue, and may aggravate dermatitis. No information was found indicating the product causes sensitization.

Chronic toxicity: Pneumoconiosis, or "dusty lung" disease, may result from chronic exposure to any dust.

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

Section 12. Ecological information

Ecotoxicity: negative effects unknown. Provides nutrient nitrogen and phosphorus to plant life.

Persistence/
Degradability: degrades rapidly in humid/wet environment.

Bioaccumulation: extent unknown.

Mobility in soil: slow evaporation rate; water soluble, may leach to groundwater.

Section 13. Disposal considerations

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

Section 14. Transportation information

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

Section 15. Regulatory information

International Inventory Status:

All ingredients are on the following inventories

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

European Risk and Safety phrases:

EU Classification: Harmful.
R Phrases: 22 Harmful if swallowed.
36/37/38 Irritating to eyes, respiratory system, and skin.
S Phrases: 26 In case of contact with eyes, rinse immediately with

36 plenty of water and seek medical advice.
Wear suitable protective clothing.

Components:

Mono ammonium phosphate:

EU Classification: Harmful.

R Phrases: 22 Harmful if swallowed.

36/37/38 Irritating to eyes, respiratory system, and skin.

S Phrases: 26 In case of contact with eyes, rinse immediately with
plenty of water and seek medical advice.

36 Wear suitable protective clothing.

Ammonium sulfate:

EU Classification: Irritant

R Phrases: 22 Harmful if swallowed.

36/37/38 Irritating to eyes, respiratory system, and skin.

S Phrases: 26 In case of contact with eyes, rinse immediately with
plenty of water and seek medical advice.

36 Wear suitable protective clothing.

U.S. federal regulatory information:

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

State regulatory information:

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

Alaska - Designated Toxic and Hazardous Substances: None

California - Permissible Exposure Limits for Chemical Contaminants: None

Florida - Substance List: Mica Dust, Ammonium Sulfate

Illinois - Toxic Substance List: None

Kansas - Section 302/303 List: None

Massachusetts - Substance List: Mica Dust, Ammonium Sulfate

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, Ammonium Sulfate

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.

Section 16. Other information

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

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