



SAFETY DATA SHEET

Section 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Purple K Dry Chemical Fire Extinguisher
 Other Identifiers: Potassium Bicarbonate, KDC, PK
 Product Code(s): CH 515, 517, 542, 553
 Model Code(s) for Extinguishers: 410, 413, 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, 759, 762, 764, 783, A413, V10PK, V13PK, V25PK, VH25PK, V50PK, VS50PK

Recommended Use: Fire suppression, agriculture, medical
 Not for human or animal drug use.

Manufacturer: SAVA FIRE EQUIPMENT INC.
 Internet Address: www.amerex-fire.com
 Address: 1085 Stacey Court
 Mississauga, ON L4W 2X7
 Company Telephone: (905) 238-6400
 E-mail Address: info@savafire.ca
 Emergency Contacts: Chemtrec 1(800) 424-9300 or (703) 527-3887

Revised: December 1, 2021; Revision K

Section 2. HAZARDS IDENTIFICATION

GHS – Classification

Health	Environmental	Physical
Acute Toxicity: Category 5	None	None
Skin Corrosion/Irritation: Category 2	None	Warning
Skin Sensitization: NO	None	None
Eye Irritation: Category 2A	None	Warning
Eye Damage: Category 1	None	Danger
STOT – Category 3	None	Warning
Carcinogen: Category None	None	None

GHS – Label Symbol(s):



If Pressurized: Gas Under Pressure



GHS – Signal Word(s):

Danger

Other Hazards Not Resulting in Classification: Mica may contain small quantities of quartz (crystalline silica). 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. In the case of normal use of this product, exposure to silica should be nil.

The attapulgite clay used in this product is not considered to be carcinogenic to animals or humans.

GHS – Hazard Phrases

GHS Hazard	GHS Codes	Code Phrases
Physical	H229	*- Contents under pressure; may explode if heated.
Health	H315 318 319 335	Causes skin irritation. Causes serious eye damage. Causes serious eye irritation. May cause respiratory irritation.
Environmental	None	
Precautionary:		
General	P101	If medical advice is needed, have product container or label at hand.
Prevention	P251 261 264 270 271 280	Do not pierce or burn, even after use. Avoid breathing dust/fumes/gas/mist/vapours/spray. Wash exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use Only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	P312 321 302+352 304+340 305+351+338 332+313 342+311 337+313 362	Call a doctor if you feel unwell. Specific treatment (see Section 4. First Aid Measures). IF ON SKIN: Wash with plenty of water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. If skin irritation occurs: Get medical advice/attention. If experiencing respiratory symptoms: Call a doctor. If eye irritation persists get medical advice/attention. If exposed or concerned, get medical advice/attention.
Storage	P403+233 405 410+403	Store in a well-ventilated place. Keep container tightly closed. Store locked up. *- Protect from sunlight. Store in well-ventilated place.
Disposal	P501	Dispose of contents through a licensed disposal company. Contaminated container should be disposed of as unused product.

*- If under pressure

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	>35
Calcium Carbonate	215-279-6	Not Available	1317-65-3	>40
Attapulgite clay	601-805-5	Not Available	12174-11-7	>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

Adverse health effects and symptoms: 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.

Section 4. FIRST AID MEASURES

Eye Exposure: Causes irritation. Can cause damage. Irrigate eyes with water and repeat until pain free. Seek medical attention if irritation continues, 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:	Calcium and 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 and calcium, potassium and nitrogen, and CO ₂ . Ignites when in contact with fluorine. (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, acids, aluminum, ammonium salts, fluorine and magnesium. Do not store in high humidity.

Hazardous Decomposition Products:

Gaseous CO₂ and calcium oxide.

Hazardous Polymerization:

Will not occur

Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name	OSHA PEL	ACGIH TLV	DFG MAK *	EU BLV
Potassium Bicarbonate (potassium hydrogen carbonate)-may contain minor 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	PNOC** Total dust, 4 mg/m ³ Respirable fraction, 1.5 mg/m ³	NA
Attapulgate clay	PNOC** Total dust, 15 mg/m ³ 50 ug/m ³ Silica	PNOC** Total dust, 15 mg/m ³ 25 ug/m ³ Silica	PNOC** Total dust, 4 mg/m ³ Respirable fraction, 1.5 mg/m ³	NA
Calcium Carbonate	PNOC** Total dust, 15 mg/m ³ Respirable fraction, 5 mg/m ³	PNOC** Total dust, 10 mg/m ³	NR***	NA
Mica- potassium aluminum silicate	PNOC** Total dust, 15 mg/m ³ Respirable fraction, 50 ug/m ³ Silica	PNOC** Total dust, 10 mg/m ³ Respirable fraction, 25 ug/m ³ Silica	PNOC** Total dust, 4 mg/m ³ Respirable fraction, 1.5 mg/m ³	NA
Silicone oil methyl hydrogen polysiloxane	NR***	NR***	NR***	NA
Violet 23 pigment oxazine dye	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:	Tightly fitting safety goggles
Skin and Body Protection:	Wear protective gloves/coveralls
Respiratory Protection:	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.
Hygiene Measures:	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:	Light purple powder, odorless
Molecular Weight:	KHCO ₃ : 100.11 g/mol; CaCO ₃ : 100.09 g/mol
Odor:	KHCO ₃ : No information available; CaCO ₃ : None
Odor Threshold:	No information available
Decomposition Temperature °C:	KHCO ₃ : 100 – 110; CaCO ₃ : 825
Freezing Point °C:	No information available
Initial Boiling Point °C:	KHCO ₃ : No information available; CaCO ₃ : 2850
Physical State:	Crystalline Powder
pH:	KHCO ₃ : Approximately 8.2; CaCO ₃ : 8-9
Flash Point °C:	None
Autoignition Temperature °C:	None
Boiling Point/Range °C:	KHCO ₃ : Not Applicable; CaCO ₃ : 2850
Melting Point/Range °C:	KHCO ₃ : 100 – 110; CaCO ₃ : 825
Flammability:	Not Flammable
Flammability Limits in Air °C:	Upper – Not Flammable; Lower-Not Flammable
Explosive Properties:	KHCO ₃ : None; CaCO ₃ : If heated with a mixture of magnesium and hydrogen, a violent explosion can occur.
Oxidizing Properties:	KHCO ₃ : None; CaCO ₃ : No data available
Volatile Component (%vol)	Not Applicable
Evaporation Rate:	Not Applicable
MMHG @ 37.8 C:	Not Applicable
Vapor Density:	Not Applicable
Vapor Pressure 20 °C:	KHCO ₃ : < 1 mm Hg; CaCO ₃ : appr. 0 mm Hg

Specific gravity: KHCO₃: Approximately 2.17; 0.88 in aerated condition
CaCO₃: 2.7

Solubility: KHCO₃: Product is coated, not immediately soluble in water; CaCO₃: 0.013 g/L at 25° C

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; Acids and acid salts; Ammonium phosphate, ammonium salts, lithium, aluminum, fluorine, magnesium. Protect from moisture

Conditions to Avoid: Storage or handling near incompatibles.

Hazardous Decomposition Products: Carbon, nitrogen, and potassium oxides, CO₂. Heat of fire may release carbon monoxide.

Possibility of Hazardous Reactions: KHCO₃: None; CaCO₃: ignites in contact with fluorine

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, perhaps severe.

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
Calcium Carbonate	6450 mg/kg (rat)	500 mg/kg 24 hr (rabbit)	None
Attapulgate clay	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 ¹²	None	None	None	Cat 3	None	None
Attapulgitte clay	None	None	None	None	Kidney	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); CaCO₃: (Rapid)

Anaerobic biodegradation probability:

KHCO₃ Est: 0.836 (Rapid); CaCO₃: (Rapid)

Bioconcentration factor:

KHCO₃: 3.16 L/kg; CaCO₃: 3.162 L/kg

Bioaccumulation potential:

KHCO₃: Low. Est biotransformation half-like 0.012 days

CaCO₃: Low. Est biotransformation half-like 0.004 days

Mobility in soil:

KHCO₃: Log Koc: Est -2.062;

CaCO₃: Log Koc: Est -0.478

Log Koa:

Not applicable

Log Kaw:

Not applicable

Fraction sorbed to airborne particulates: KHCO₃: 0.886; CaCO₃: 0.052

Atmospheric oxidation half-life:

KHCO₃: 20.6 days; CaCO₃: Not Applicable

Level III Fugacity Model:

KHCO₃: 62% soil, 37% water, <0.1% sediment, air

CaCO₃: 93% soil, 37.69% water, <0.1% sediment air

NOTE: KHCO₃ - Potassium bicarbonate; CaCO₃ – Calcium carbonate

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. 630 mg/l (water flea) 48 hr., mortality min. at 94 mg/l 260 mg/l (flathead minnow), mortality min. dose	N/A
Mica	N/A	N/A
Calcium carbonate	N/A	N/A
Attapulgate clay	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
Calcium carbonate	N/A	N/A
Attapulgate clay	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

See current applicable transport regulations (DOT - Ground, IATA – Air, IMDG – Maritime) prior to shipping.

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:

The transportation information above covers the Purple K dry chemical extinguisher agent as shipped in bulk containers and not when contained in fire extinguishers or fire extinguisher systems. 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/division is LIMITED QUANTITY when pressurized to less than 241 psig and when shipped via highway or rail. UN Class 2.2. Non-Flammable Gas when shipping via air. Packing Group – N/A

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
Calcium Carbonate	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 (>35)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Attapulgite clay 298-14-6 (>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 1317-65-3 (>40)	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:	Xi	Irritant
R Phrases:	20	Harmful by inhalation.
	36/37	Irritating to eyes, respiratory system.
	38	Irritating to skin.
	39	Danger of very serious irreversible effects.
	40	Limited evidence of carcinogenic effect.
	41	Risk of serious damage to eyes.
S Phrases:	22	Do not breath dust.
	24/25	Avoid contact with skin and eyes.
	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	36/37/39	Wear suitable protective clothing, gloves and eye/face protection.

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: 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 list.

Other:

Mexico – Grade No component listed

Canada – WHMIS Hazard Class No component listed

Section 16. OTHER INFORMATION

This Information Sheet complies with the requirements of US, UK, Canadian, Australian and European regulations or standards, and conforms to the proposed format, ANSI Z400.1, 2003. No modification of this safety data sheet is permitted by AMEREX Corporation. Questions or comments should be directed to AMEREX Corporation (see section 1).

Issuing Date	17-June-2012
Revision Date	1-December-2021; Revision K
Revision Notes	None

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