



SAFETY DATA SHEET

Section 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Graphite Dry Powder
 Other Identifiers: G Plus, G-1, graphite
 Product Codes: CH 543, CH532
 Model Code(s) for Fire Extinguishers: None
 Recommended Use: Fire extinguishant for metal fires, 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: March 20, 2018

Section 2. HAZARDS IDENTIFICATION

GHS – Classification

Health	Environmental	Physical
Acute Toxicity: Category 5	None	None
Skin Corrosion/Irritation:	None	None
Skin Sensitization:	None	None
Eye: Category 2A	None	Warning
STOT – Category 3 (Single Exposure- Resp)	None	Warning
Carcinogen: Category None	None	None

GHS – Label Symbol(s):



If Pressurized: Gas Under Pressure

GHS – Signal Word(s):

Warning

Other Hazards Not Resulting in Classification: May create hazardous dust during shipping, handling, and use. May form combustible dust concentrations in air. The dust is a conductor of electricity. This dust may cause slippery conditions if on floor.

GHS – Hazard Phrases

GHS Hazard	GHS Codes(s)	Code Phrase(s)
Physical	H229	*- Pressurized container: may burst if heated
Health	H315 319 335	May be harmful if swallowed 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 261 264 280	Do not pierce or burn, even after use. Avoid breathing dust/fumes/gas/mists/vapours/spray. Wash exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.
Response	P312 321 373 302+352 304+340 305+351+338 332+313 337+313 342+311	Call a doctor if you feel unwell. Specific treatment (see Section 4. First Aid Measures) May cause damage to organs through prolonged or repeated exposure. 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 eye irritation persists get medical advice/attention. If experiencing respiratory symptoms: Call a doctor.
Storage	P410+403	*- Protect from sunlight. Store in a 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 %	Classification
Graphite	231-955-3	NA	7782-42-5	>99	NA

Adverse health effects and symptoms:

Serious irritant to the eyes; may cause respiratory irritation; mild irritant to mucous membranes and skin. Symptoms of inhalation include coughing, shortness of breath, and production of black sputum. Chronic exposure may cause pneumoconiosis, fibrotic disease, or aggravate existing pulmonary disease.

Section 4. FIRST AID MEASURES

Eye Exposure:

Causes irritation. Irrigate eyes with water and repeat until pain free. Remove contact lenses if present and easy to do – continue rinsing. Seek medical attention if irritation persists, or if visual 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 and appearance of black sputum. If respiratory irritation or distress occurs, remove victim to fresh air. Seek medical attention if irritation persists.
Ingestion:	Overdose symptoms may include breathing difficulty and coughing up black sputum. 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.
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
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Flammable Properties:	Not flammable
Flash Point:	Not determined
Suitable Extinguishing Media:	CO2, water spray, dry chemical powder or foam. Do not use water jet if dust is present
Hazardous Combustion Products:	May release CO or CO2.
<u>Explosion Data:</u>	
Sensitivity to Mechanical Impact:	Not sensitive
Sensitivity to Static Discharge:	Can conduct electricity or static charge
Unusual fire/explosion hazards:	Airborne dust could be explosive at high concentrations. Fire can produce irritating and toxic gases which can cause burns to the skin and eyes.
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. This is a slip hazard; do not walk through spilled material. Graphite can become a combustible dust if allowed to become airborne. Minimize airborne dust.
Personal Protective Equipment:	Wear PPE as specified in Section 8. Sweep up and containerize for disposal or reclamation. Vacuuming or wet sweeping is suggested to avoid dust dispersion.
Emergency Procedures:	Graphite can become a combustible dust if allowed to become airborne.
Methods for Containment:	Prevent further leakage or spillage if safe to do so. Material should be collected mechanically and disposed of in suitable containers.
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 drum for disposal in properly label containers.
Environmental Precautions:	Prevent material from entering storm sewers or conveyances to 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. Prevent falling. Do not allow near heat sources.
Incompatible Products:	Do not mix with other extinguishing agents. Store away from ignition sources and direct sunlight.
Hazardous Decomposition Products:	Carbon oxides, Potassium oxides
Hazardous Polymerization:	Will not occur

Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name	OSHA PEL	ACGIH TLV	DFG MAK *	EU BLV
Graphite	15 mg/m ³ (total) 5 mg/m ³ (respirable)	2 mg/m ³ (respirable)	4 mg/m ³ (inhalable) 1.5 mg/m ³ (respirable)	NA

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:

Chemical goggles
Wear nitrile or similar 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:	Dark gray to black, odorless, fine powder. Feels slippery.
Molecular Weight:	12.01gm
Odor:	Odorless
Odor Threshold:	No information available
Decomposition Temperature °C:	No information available
Freezing Point °C:	Not applicable

Initial Boiling Point °C:	> 4000
Physical State:	Crystalline powder
pH:	Not applicable
Flash Point °C:	Information not available
Autoignition Temperature °C:	452 – 518
Boiling Point/Range °C:	Not Applicable
Melting Point/Range °C:	Approximately 3600° C
Flammability:	No, unless as combustible airborne dust
Flammability Limits in Air °C:	Upper – Not Flammable; Lower-Not Flammable
Explosive Properties:	Explosive as a dust
Oxidizing Properties:	None
Volatile Component (%vol)	Not Applicable
Evaporation Rate:	Not Applicable
Vapor Density:	Not Applicable
Vapor Pressure:	1 mm HG at 3586 °C
Specific gravity:	Approximately 2.26 at 25 °C
Solubility:	Insoluble in water
Partition coefficient, K _{ow}	Unknown
Viscosity:	Not Applicable

Section 10. STABILITY AND REACTIVITY

Stability:	Stable
Incompatibles:	Strong oxidizers such as chlorates and nitrates, liquid potassium, peroxides, fluorine, and chlorine trifluoride.
Conditions to Avoid:	Storage or handling near incompatibles. Graphite is a good conductor of electricity; do not allow situations where electrical accidents can occur. Minimize airborne dust generation.
Hazardous Decomposition Products:	None known
Possibility of Hazardous Reactions:	Reacts violently with oxides
Hazardous Polymerization	Does not occur

Section 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure:	Inhalation and eye contact.
Symptoms:	
Immediate:	
Inhalation:	Irritation, coughing.
Eyes:	Possibly serious irritation.
Skin:	Mild 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	
Graphite	>2g/kg (rat)	Non-irritant, rabbit, 4 hour exposure	NA

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
Graphite	None	None	None	Category 3	Category 2	None

Section 12. ECOLOGICAL INFORMATION

Ecotoxicity: Non-toxic; however, as a silt it may degrade aquatic habitat.
 Persistence/Degradability: Insoluble in water
 Probability of rapid biodegradation: Est: 0.74 (Rapid)
 Anaerobic biodegradation probability: Est: 0.76 (Rapid)
 Bioaccumulation potential: Low.
 Bioconcentration factor: Est: 2.43 (wet weight)
 Bioaccumulation: Little. Non-soluble.
 Mobility in soil: Poor
 Log Koc: Est: 0.946
 Log Koa: Est: -0.45
 Log Kaw: Est: 1.43

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

Aquatic Toxicity Values – Environment – Research

Chemical Name	Acute (LC50)	Chronic (LC50)
Graphite	N/A	N/A

Aquatic Toxicity Values – Environment – Estimates

Chemical Name	Acute (LC50)	Chronic (LC50)
Graphite	165.54 mg/L Fish 96 hr; 83.95 mg/l Daphnid 48 hr;	39.20 mg/L Gr. Algae 96 hr

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:

The transportation information above covers the Graphite Dry Powder 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
Japan	MITI	No
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
Graphite	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
Graphite	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 23/24/25 26 36 38	Do not breath dust. Avoid inhalation and 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. Where ventilation is insufficient, wear suitable respiratory equipment.

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: None
Illinois – Toxic Substance List: None
Kansas – Section 302/303 List: None
Massachusetts – Substance List: None
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: None
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 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

20-March-2018

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.