Pack Logix Inc.
2501 West Hampton Avenue
Milwaukee, WI 53209

Safety Data Sheet
L-300 (3224)

Section 1 – Identification of the Substance / Preparation, and of the Company

1.1: Product Identifier

Trade Name:	Natural Graphite 95%+ Carbon	Grade: **3224**
REACH Registration Number:	Exempt	
Substance Name:	Graphite, CAS 7782-42-5	EC Number: **231-955-3**

1.2: Indentified uses of the substance or mixtures

1.2.1 Uses: Inorganic source of carbon, filler, thermal additive, re-carburizer, casting powders, drilling fluids, plastic additive, rubber additive, tint/pigment, lubricant, chemically resistant additive, EMF absorber, , general inert filler-additive.

1.2.2 Uses Advised Against: For industrial use only, not for food, drug, or cosmetic applications.

1.3: Supplier Information Distributor:	Pack Logix Inc. 2501 West Hampton Avenue Milwaukee, WI 53209	Telephone: (414) 464-7200 Fax: (414) 462-0980 Preparer: AVT Email Address: info@pack-logix.com

Date Prepared: 12/12/2016

1.4: **Emergency Telephone Number 800-535-5053**

Section 2: Hazards Identification

2.1: Classification of substance
Natural Graphite is not a hazardous substance
2.2: Label Elements
Natural Graphite is not a hazardous substance, no label elements are required
2.3: Other hazards
None known

Section 3 – Composition/Information on Ingredients:
Chemical Composition: Carbon variety Graphite 90+% (balance is inert ash)
CAS # 7782-42-5
EC # 231-955-3
Molecular Weight: 12.0

Section 4 – First Aid Measures

4.1.1 Inhalation	Remove patient to particulate-free environment. Wear approved dust mask to avoid breathing dust. Seek medical attention if irritation persists.
4.1.2 Skin Contact	Wash with mild soap and warm water: Graphite is non-staining to skin and is not a chemical irritant.
4.1.3 Eye Contact	Rinse with tepid water until eyes are clear of particulates. Seek medical attention if irritation persists.
4.1.4 Ingestion	Get immediate medical attention. Do not induce vomiting unless directed by medical personnel. Natural graphite is not known to be toxic by ingestion. However, ingestion may cause digestive system blockage.
4.2 Most important symptoms and effects, both acute and delayed: No Data Available	
4.3 Indication of any immediate medical attention and special treatment needed: If patient exhibits shortness of breath, choking, powder inundated eyes or mouth; immediate medical attention may be required.	

Section 5 – Fire Fighting Measures

Graphite is not flammable under normal conditions	
5.1 Extinguishing Media	Dry chemical extinguisher, water, sand, limestone powder,
5.2 Special Hazards	At temperatures above 1500 C, graphite reacts with substances containing oxygen, including water and carbon dioxide. In case of intensely hot fire events, use sand to cover and isolate graphite.
Products of Combustion:	Carbon dioxide, CO2, carbon monoxide, CO.
5.3 Advice for Fire Fighters: Use self contained air pack, gloves, safety goggles	
5.4 Additional Information: USA NFP Rating 110	

Section 6 – Accidental Release Measures

	Wear approved dust mask, safety goggles, and conventional work gloves.
Methods for Cleaning Up:	Conventional Sweep or vacuum. Avoid creating dusting conditions
6.1 Personal precautions , protective equipment and emergency procedures	
6.1.1 For non-emergency personnel: Wear approved dust mask, safety goggles, and conventional work gloves. Use conventional cleanup techniques and avoid creating dust. Vacuum is preferred over sweeping. Be cautious of slip hazard on wet or dry pedestrian surfaces. Wear a dust mask/respirator to reduce the change of inhaled dust. Graphite is electrically conductive and any cleanup methods should avoid contacting graphite with electrical circuitry.	
6.1.2 For emergency responders: Wear approved dust mask, safety goggles, and conventional work gloves. Same methodology as for non-emergency personnel(sec 6.1.1)	
6.2 Environmental Precautions: Natural graphite is inert and insoluble and will not pose any soluble ion hazards to the environment. However, good housekeeping practices should be followed and spilled material should be cleaned up, and disposed of in an appropriate manner.	
6.3 Methods and material for containment and clean up: No special containment needed other than conventional vacuuming and waste containment. Avoid creating dust. Graphite is electrically conductive and any cleanup methods should avoid contacting graphite with electrical circuitry.	
6.4 Reference to other sections: Not needed 6.5 Additional information: Not needed	

Section 7 – Handling and Storage

7.1 Precautions for safe handling

7.1.1 Handling Use conventional methods, but avoid dusting conditions. Provide sufficient exhaust ventilation in areas where dust is created. Wear suitable respiratory protection. Keep powder from contacting eyes. Natural graphite is a good conductor of electricity. Avoid contact between natural graphite and electrical circuitry. Slip Hazard: Graphite is a highly lubricious material and may present a slip hazard if spilled on wet or dry pedestrian surfaces.
7.2 Conditions for safe storage, including any incompatibilities.
Storage: Store all carbonaceous materials in a dry location. Keep packaging closed or covered
Incompatibilities: Graphite is incompatible with all oxidizing agents.
Dust Explosibility Hazards: Very finely divided graphite powder poses a very slight risk of dust explosion hazard: Dust class ST1, MIE greater that 10 J (very low hazard of spark ignition)

Section 8 – Exposure Controls/ Personal Protection

8.1 Control parameters

8.1.1 Occupational exposure limits

Component	CAS No.	%	ACGIH TWA	Control Reference
Natural Mineral Graphite	7782-42-5	95+	2.0 mg/m^3 Respirable dust 10.0 mg/m^3 Inhalable dust	2014 ACGIH TLV Handbook
Silica (quartz)	14808-60-7	<0.5	0.025 mg/m^3 Respirable dust	2014 ACGIH TLV Handbook
Naturally occurring mineral(inert ash)	999999-99-4	<5	2.0 mg/m^3 Respirable dust	2014 ACGIH TLV Handbook
Engineering Measures	Use adequate dust collection to maintain dust levels below the control or recommended values.			
Respiratory Protection	Approved dust mask, type N95 recommended.			
Eye Protection	Conventional safety glasses or goggles.			
Skin Protection	Conventional work gloves and clothing.			
Additional	Graphite spilled on pedestrian surfaces may pose a significant slip hazard.			

8.2 Exposure controls

8.2.1 Appropriate engineering controls: Use adequate dust collection to maintain dust levels below the control or recommended values.
8.2.2 Personal protective equipment 8.2.2.1 Eye/Face Protection: Wear laboratory goggles, or full side shielded safety glasses. 8.2.2.2 Skin Protection: Conventional work gloves and clothing. 8.2.2.3 Respiratory Protection: Approved dust mask, type N95 recommended.
8.2.3 Environmental exposure controls: Natural graphite is inert and insoluble. To the best of our knowledge, Natural graphite should not present any environmental hazards. No special environmental exposure controls, other than standard practices for dust and spill control, are required.

Section 9 – Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Color:	Gray to Black	Material State	Solid, granular or powder
Odor	None		
Boiling Point:	NA	Melting Point	Sublimates at 3652C
Specific Gravity	2.26	Vapor Density	Not applicable
Vapor Pressure (mm Hg)	NA	% Volatile (By Wt.)	0-1%
Solubility in Water	Insoluble	Evaporation Rate:	Not applicable
pH	NA	Auto Ignition	Above 500 ˚C
Decomposition Temp	Oxidizes above 450C	Dust Explosion class	ST1=KST>0-200 bar m/s, MIE above 10 J.
Flash Point	NA Solid substance with very high melting point.		

Section 10 – Stability and Reactivity

10.1 Reactivity	Graphite is non-reactive under ambient conditions.
10.2 .Stability	Stable. Will not polymerize or self react spontaneously.
10.3 Possibility of hazardous reactions	None known
10.4 Conditions to Avoid	Avoid contact with oxidizing agents. Graphite will begin to oxidize at temperatures above 450 C.
10.5 Incompatible materials	Oxidizing agents
10.6 Hazardous products of decomposition	Carbon Dioxide (CO_2), Carbon Monoxide (CO)
Flammable Limits (% by Vol.)	LEL and UEL values not available: Minimum Ignition Energy (MIE) greater than 10 joules. When exposed to extremely high energy ignition sources very finely divided graphite powder can form explosive mixtures with air. Avoid contact between graphite dust clouds and high energy ignition sources. Classified as combustible but not flammable.

Section 11 – Toxicological Information

11.1 Information on toxicological effects: Acute toxicity

	Effect dose	Species	Method	Remarks
Acute oral toxicity	LD50 > 2000 mg/kg bw	Rat	OECD 423	
Acute inhalation toxicity	LC50 > 2000 mg/m3	Rat	OECD 403	Limit dose acc. to CLP.

	Species	Method	Result
Skin corrosion/irritation	Rabbit	OECD 404	Not irritating
Serious eye damage/irritation	Rabbit	OECD 405	Not irritating
Respiratory or skin sensitization	Mouse	OECD 429	Not sensitizing

	Species	Method	Result of effect dose	Remarks
Genotoxicity	In vitro	OECD 471	Negative	Bacterial reverse mutation assay.
Genotoxicity	In vitro	OECD 473	Negative	Mammalian chromosome aberration test.
Genotoxicity	In vitro	OECT476	Negative	Mammalian cell gene mutation test (gene mutation).
Carcinogenicity		Literature	Not carcinogenic (DFG, 2002).	Based on available data the classification criteria are not met.
Reproductive toxicity	Rat	OECD 422	NOAEL > 1000 mg/kg bw	Dose as nominal food intake, corresponding to limit dose according to OECD 422. Based on available data the classification criteria are not met

11.1 Information on toxicological effects: continued

STOT-single exposure

Single exposure	Specific effect	Affected organs	Remark
Acute oral toxicity OECD 423 (rat)	No specific effects.	Not applicable.	Based on available data the classification criteria are not met.
Acute inhalation toxicity OECD 403 (rat)	Only usual signs of discomfort after the end of exposure were observed.	Not applicable.	Based on available data the classification criteria are not met.

STOT-repeated exposure: Not available

Aspiration hazard: Solid substance. Based on available data the classification criteria are not met.

Symptoms related to the physical, chemical and toxicological characteristics

In case of ingestion: No signs of systemic toxicity found in studies acc. to OECD 423 and OECD 422.
No human data on effects after ingestion. See section 4 for first aid measures.
In case of skin contact: No irritation or corrosion found in a study acc. to OECD 404. No human data on effects after skin contact. See section 4 for first aid measures.
In case of inhalation: No signs of systemic toxicity found in studies acc. to OECD 403 and OECD 412.
Usual signs after inhalation of poorly soluble dusts with low toxicity were found in these studies. No symptoms are expected if relevant occupational exposure levels and derived no effect levels are complied with. In situations of repeated excessive lung overload due to a high airborne concentration of particles of respirable size for extended periods of time pneumoconiosis may develop. See section 4 for first aid measures.
In case of eye contact: No irritation or corrosion found in a study acc. to OECD 405. No human data on effects after eye contact. See section 4 for first aid measures.

Section 12 – Ecological Information

12.1 Toxicity:	Natural graphite is inert and insoluble. To the best of our knowledge, natural graphite does not present any significant environmental hazards.			
12.1.1 Aquatic Toxicity: Graphite is not water soluble and does not present a soluble-ion hazard. Fine graphite particles suspended in natural water bodies may be harmful to organisms sensitive to suspended solids.				
Aquatic toxicity	Effect dose	Exposure time	Method	Remarks
Acute fish toxicity	LC50 > 100 mg/l	96 hour	OECD 203 (EU method C.1)	No adverse reaction up to the tested concentration could be observed.
Acute daphnia toxicity	EC50 > 100 mg/l	48 hour	OECD 202 (EU method C.2)	No adverse reaction up to the tested concentration could be observed.
Acute algae toxicity	EC50 > 100 mg/l	72 hour	OECD 201 (EU method C.3)	No adverse reaction up to the tested concentration could be observed.
12.1.2 Sediment toxicity: None known.				
12.1.3 Terrestrial toxicity: None known.				
12.2 Persistence and degradability: Graphite is a reduced form of carbon and will not degrade further under normal conditions. This form of carbon is stable, unreactive in water under ambient conditions, and is insoluble.				
12.3 Bioaccumulation potential: There is no evidence indicating that graphite is bioaccumulative.				
12.4 Soil Mobility: Graphite is not expected to have mobility in soil as it is an insoluble, inorganic substance.				
12.5 PBT and vPvB assessment: Graphite is not a persistent bioaccumulative and toxic substance.				
12.6 Other adverse effects: None known. Graphite has no ozone depleting potential.				

Section 13 – Disposal Considerations

Dispose of in a manner which conforms to local, state and Federal regulations.

Graphite is a reduced form of carbon. Graphite is non-hazardous but disposal of graphite waste should be handled in a responsible matter. .

Graphite is a form of elemental carbon so it is not biodegradable.

Provision of a European Waste Catalog, waste code number, should be handled in agreement with the regional waste disposal company.

Packaging should be completely emptied of contents and disposed of in a manner specified by the recycler/regional disposal contractor. Dust formation from packaging residues should be avoided. Store empty packaging in a suitable receptacle

Section 14 – Transport Information

14.1 UN Number	Not applicable
14.2 UN Proper shipping name	Not applicable
14.3 Transport hazard class	Not applicable
14. 4 Packing Group	Not applicable
14.5 Environmental hazards	None known
Marine Transport	Not classified as a hazardous material
Land Transport	Not classified as a hazardous material
Air Transport	Not classified as a hazardous material
Transport Label Required	No label required

Section 15 – Regulatory Information

15.1 Regulatory Status and Inventories

Not Classified	
Inventory Information:	
EEC EINECS	#231-955-3
US TSCA	Yes
Canada DSL	Yes
Canada NDSL	No
Australian AICS	Yes
Korean ECL	Yes
Asia PAC	Yes
Swiss Giftliste 1	Yes #G8422
IECSC	Yes
PICCS	Yes
New Zealand NZLoC	Yes
REACH: Natural graphite is exempt from REACH registration per Annex V, Paragraph VII.	
RoHS: Natural graphite is compliant with the EU RoHS directive	
WEEE: Natural graphite is compliant with the EU waste electrical and electronic equipment directive	
15.2 Chemical Safety Assessment: For this substance a chemical safety assessment is not required	

Section 16 – Other Information

Abbreviations Used:

ACGIH TWA	American Council of Government and Industrial Hygienists Time Weighted Average value.
CAS	Chemical Abstracts Service
NA	Not applicable
N.O.S.	Not otherwise specified
BW	Body weight