Safety Data Sheet

Graphokote 450

Revision Date August 16, 2016

1. Product and Company Identification

Product Information	
Trade Name	Graphokote 450
Product Description	Solvent-based graphite coating
Recommended Uses	Lubricant, protective coating
Company	Southwestern Graphite, Inc. (a division of Asbury Carbons Inc.) 2564 Highway 12 DeQuincy, LA 70633
Emergency Telephone	US: 1-800-255-3924; International: +01-813-248-0585; China: 400-120-0751; Brazil: 0-800-591-6042; India: 000-800-100-4086; Mexico: 01-800-099-0731 ChemTel contract number: MIS0001931 (collect calls accepted)
Information Phone	1-908-537-2155
Website	www.asbury.com

2. Hazards Identification

Classification

Physical Hazards

Flammable liquids – Category 2

Health Hazards

Aspiration hazard – Category 1
Skin irritation – Category 2
Specific target organ toxicant, single exposure - Category 3 (respiratory tract)
Specific target organ toxicant, single exposure - Category 3 (narcotic effects)
Reproductive toxicity – Category 2
Specific target organ toxicant, repeated exposure - Category 2 (central nervous system, peripheral nervous system)
Chronic aquatic toxicity – Category 2

Labeling

Hazard Pictogram(s)

Signal Word Danger

Hazard Statements

Physical:	H225:	Highly flammable liquid and vapor.
Health:	H304:	May be fatal if swallowed and enters airways.
	H315:	Causes skin irritation.
	H335:	May cause respiratory irritation.
	H336:	May cause drowsiness or dizziness.
	H361:	Suspected of damaging fertility or the unborn child.
	H373:	May cause damage to organs through prolonged or repeated exposure.
Environmental:	H411:	Toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention:	P210:	Keep away from heat/sparks/open flames - no smoking.
	P271:	Use only outdoors or in a well-ventilated area.
	P233:	Keep container tightly closed.
	P240:	Ground/bond container and receiving equipment.

	P241: Use explosion-proof electrical / ventilating / lighting / equipment. P242: Use only non-sparking tools. P243: Take precautionary measures against static discharge. P260: Do not breathe dusts / fume / gas / mist / vapors / spray. P264: Wash hands thoroughly after handling. P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P273: Avoid release to the environment. P280: Wear protective gloves / protective clothing / eye protection / face protection.
Response:	P370+P378: In case of fire: Use appropriate media for extinction. P303 + P361 + P353: IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water / shower. P352 + P332 + P313: Wash with plenty of soap and water. If skin irritation occurs: Get medical attention. P362: Take off contaminated clothing and wash before reuse. P304 + P340 +P312: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell. P301 + P310 +331: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Do NOT induce vomiting. P308 + P313: IF exposed or concerned: Get medical attention. P391: Collect spillage.
Storage:	P403 + P233: Store in a well-ventilated place. Keep container tightly closed. P235: Keep cool. P405: Store locked up.
Disposal:	P501: Dispose of contents and container in accordance with local regulations.

3. Composition / Information on Ingredients

Components	CAS No.	Weight %	Hazard Code(s)
Solvent naphtha (petroleum), light aliphatic	64742-89-8	46-55%	H225, H304, H315, H336, H361, H373, H411
Graphite	7782-42-5	24-44%	--
solvent naphtha (petroleum), light aromatic	64742-95-6	1-10%	H226, H304, H335, H336, H411

4. First Aid Measures

Inhalation	Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.
Skin Contact	Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention.
Eye contact	Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.
Ingestion	If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing.
Symptoms and effects (acute and delayed)	If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever. Auditory system effects may include temporary hearing loss and/or ringing in the ears. Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing. Defatting dermatitis signs and symptoms may include a burning sensation and/or a dried/cracked appearance. Skin irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blisters.
Note to Physician	Potential for chemical pneumonitis.

5. Fire Fighting Measures

Suitable extinguishing media	Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable extinguishing media	Do not use water in a jet.
Special fire hazards	Flammable vapors may be present even at temperatures below the flash point. The vapor is heavier than air, spreads along the ground and distant ignition is possible. Will float and can be reignited on surface water.
Products of Combustion	Smoke, fume, incomplete combustion products, carbon dioxide (CO2), carbon monoxide (CO).
Advice for Fire Fighters	Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space.
NFP Rating	130

6. Accidental Release Measures

Personal precautions	Observe all relevant local and international regulations. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Local authorities should be advised if significant spillages cannot be contained. Avoid contact with skin, eyes and clothing. Isolate hazard area and deny entry to unnecessary or unprotected personnel. Do not breathe fumes, vapor. Do not operate electrical equipment.
Environmental precautions	Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapor or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas indicator.
Methods for cleaning up	For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely Ventilate contaminated area thoroughly. If contamination of site occurs remediation may require specialist advice.

7. Handling and Storage

Precautions for safe handling	Avoid inhaling vapor and/or mists. Avoid contact with skin, eyes and clothing. Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. Use local exhaust ventilation if there is risk of inhalation of vapors, mists or aerosols. Bulk storage tanks should be diked (bunded). When using do not eat or drink. The vapor is heavier than air, spreads along the ground and distant ignition is possible. Even with proper grounding and bonding, this material can still accumulate an electrostatic charge. If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapor mixtures can occur. Be aware of handling operations that may give rise to additional hazards that result from the accumulation of static charges. These include but are not limited to pumping (especially turbulent flow), mixing, filtering, splash filling, cleaning and filling of tanks and containers, sampling, switch loading, gauging, vacuum truck operations, and mechanical movements. These activities may lead to static discharge e.g. spark formation. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (≤ 1 m/s until fill pipe submerged to twice its diameter, then ≤ 7 m/s).

	Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations.
Storage precautions	Bulk storage tanks should be diked (bunded). Locate tanks away from heat and other sources of ignition. Cleaning, inspection and maintenance of storage tanks is a specialist operation, which requires the implementation of strict procedures and precautions. Must be stored in a diked (bunded) well- ventilated area, away from sunlight, ignition sources and other sources of heat. Keep away from aerosols, flammables, oxidizing agents, corrosives and from other flammable products which are not harmful or toxic to man or to the environment. Electrostatic charges will be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment to reduce the risk. The vapors in the head space of the storage vessel may lie in the flammable/explosive range and hence may be flammable. Suitable packaging material: For containers, or container linings use mild steel, stainless steel. For container paints, use epoxy paint, zinc silicate paint. Unsuitable packaging material: Avoid prolonged contact with natural, butyl or nitrile rubbers. Do not cut, drill, grind, weld or perform similar operations on or near containers.

8. Exposure Controls/ Personal Protection

Ingredients with control parameters / occupational exposure limits

Component	CAS No.	TWA	Control Reference
Solvent naphtha (petroleum), light aliphatic	64742-89-8	2000 mg/m^3	OSHA Z-1
Graphite	7782-42-5	2.0 mg/m^3	Respirable dust, ACGIH
solvent naphtha (petroleum), light aromatic	64742-95-6	200 mg/m^3	ACGIH

Engineering controls	Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits. Local exhaust ventilation is recommended. Firewater monitors and deluge systems are recommended. Eye washes and showers for emergency use. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.
Respiratory Protection	If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. If air-filtering respirators are suitable for conditions of use, select a filter suitable for organic gases and vapors [Type A boiling point >65°C (149°F)]. Respirator selection, use and maintenance should be in accordance with the requirements of the OSHA Respiratory Protection Standard, 29 CFR 1910.134.
Eye Protection	If material is handled such that it could be splashed into eyes, protective eyewear is recommended.
Skin Protection	Where hand contact may occur, gloves made from the following materials may provide suitable chemical protection. Longer term protection: Nitrile rubber gloves. Incidental contact/Splash protection: PVC, neoprene or nitrile rubber gloves. Contaminated gloves should be replaced. Skin protection is not required under normal conditions of use. For prolonged or repeated exposures use impervious clothing over parts of the body subject to exposure. If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to relevant Standard, and provide employee skin care programs. Wear antistatic and flame retardant clothing, if a local risk assessment deems it so.
Hygiene measures	Wash hands before eating, drinking, smoking and using the toilet. Launder contaminated clothing before re-use.

9. Physical and Chemical Properties

Appearance	Gray to black liquid	**Lower explosion limit**	0.9% (V)
Odor	Hydrocarbon	**Upper explosion limit**	7.0% (V)
pH	n/a	**Vapor pressure**	1.5 - 2 kPa (20 °C / 68 °F)
Freezing point	Not determined	**Vapor density**	0.74 - 0.76 (15.6 °C / 60.1 °F)
Boiling point	118 - 150 °C / 244 - 302 °F	**Water solubility**	0.05 g/l negligible
Flash point	14 - 18 °C / 57 - 64 °F Method: Tagliabue Closed Cup	**Partition coefficient: n-octanol/water**	Not available
Evaporation rate	1.0 (n-butyl acetate = 1)	**Autoignition temperature**	320 °C / 608 °F
Specific gravity	0.97 g/ml	**% volatile by weight**	56%

10. Stability and Reactivity

Chemical stability	Stable under normal conditions of use.
Possibility of hazardous reactions	Hazardous polymerization will not occur.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources.
Materials to avoid	Strong oxidizers
Hazardous decomposition products	Hazardous decomposition products are not expected to form during normal storage.

11. Toxicological Information

Acute oral toxicity	LD50 (rat): 2000 - 5000 mg/kg. May be harmful if swallowed.
Acute inhalation toxicity	LC50 (rat, 4 hours): > 20 mg/l. Low toxicity by inhalation.
Acute dermal toxicity	LD50 (rabbit): > 2000 mg/kg. Low toxicity.
Skin corrosion/irritation	Causes skin irritation. Repeated exposure may cause skin dryness or cracking.
Eye damage/irritation	Not irritating to eye. Vapors may be irritating to the eye.
Respiratory or skin sensitization	Not expected to be a sensitizer.
Mutagenicity	Not mutagenic.
Carcinogenicity	Not expected to be carcinogenic. Tumors produced in animals are not considered relevant to humans. **IARC:** No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. **ACGIH:** Confirmed animal carcinogen with unknown relevance to humans solvent naphtha (petroleum), light aromatic (64742-95-6) **OSHA:** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. **NTP:** No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
Reproductive toxicity	Suspected of damaging fertility or the unborn child. Causes fetotoxicity in animals at doses which are maternally toxic. Affects reproductive system in animals at doses which produce other toxic effects.
STOT - single exposure	May cause respiratory irritation. May cause drowsiness and dizziness.
STOT - repeated exposure	Auditory system: prolonged and repeated exposures to high concentrations have resulted in hearing loss in rats. , Kidney: caused kidney effects in male rats which are not considered relevant to humans
Aspiration toxicity	Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

12. Ecological Information

Aquatic toxicity	Expected to be toxic.
Acute toxicity to fish	LC/EC/IC50 1 - 10 mg/l. Expected to be toxic.
Acute toxicity to aquatic	LC/EC/IC50 1 - 10 mg/l. Expected to be toxic.

invertebrates	
Acute toxicity to algae	LC/EC/IC50 1 - 10 mg/l. Expected to be toxic.
Chronic toxicity to fish	No data available
Chronic toxicity to aquatic invertebrates	No data available
Biodegradation	Expected to be readily biodegradable. Oxidizes rapidly by photo-chemical reactions in air.
Bioaccumulation	Has the potential to bioaccumulate.
Mobility	Floats on water. Adsorbs to soil and has low mobility.

13. Disposal Considerations

Material Disposal	Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses. Waste product should not be allowed to contaminate soil or water.
Regulatory Information	Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.
Packaging Disposal	Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard. Do not puncture, cut or weld uncleaned drums. Send to drum recycler or metal reclaimer. Comply with any local recovery or waste disposal regulations.

14. Transport Information

UN number	1268
Proper shipping name	Petroleum distillates, n.o.s.
Transport hazard class	3
Packing group	III (note: packages over 30 liters / 7.8 gallons must ship as PG II)
Marine pollutant?	Yes

15. Regulatory Information

Listed / complies with the following chemical inventories:	DSL, IECSC, TSCA, EINECS, KECI, PICCS
SARA (311/312) Hazard Classifications	Fire. Acute health. Chronic health.
SARA (313) Toxic Release Inventory:	This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
Solvent naphtha (petroleum), light aliphatic	64742-89-8	4, 17, 18
Graphite	7782-42-5	1, 12, 16, 17, 18
solvent naphtha (petroleum), light aromatic	64742-95-6	1, 18

Regulatory lists searched:

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	20 = MA RTK

16. Other Information

The information contained herein is accurate to the best of our knowledge. Asbury Carbons makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances.

NFPA Classification	Health Hazard:	1
	Fire Hazard:	3

Reactivity Hazard: 0