Material Safety Data Sheet

CREOSOTE/COAL TAR SOLUTION
and
CREOSOTE OIL

Version: 1 Date Issued: 03/24/05 MSDS No. US 614838

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

COMPANY:	KMG- Bernuth, Inc. 10611 Harwin, Suite 402 Houston, Texas 77036	
PHONE NUMBER:	713-988-9252	
EMERGENCY PHONE:	CHEMTREC: 1-800-424-9300	
NAME USED ON LABEL:	Creosote/Coal Tar Solution	Creosote Oil
PRODUCT USE:	Wood Preservative	
U. S. EPA REG. NO.	61483-8	61483-9

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

IDENTITY	CAS NUMBER	TYPICAL %	OTHER INFORMATION
Coal Tar Creosote (AWPA P2)	8001-58-9	98.0 %	Complex mixture of aromatic and heterocyclic hydrocarbons

Trace impurities and additional material names not listed above appear in Section 8. These materials may be listed for local "Right-To-Know" compliance and for other reasons.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Creosote is a brown to black oily liquid with a penetrating smoky odor. Vapor causes moderate to severe irritation of eyes, nose, throat and respiratory tract. Liquid can cause burning and itching with reddening of the skin, which is accentuated by sunlight.

HEALTH HAZARDS:

EYES: Overexposure to product vapors can result in irritation. Eye contact with product may cause moderate irritation, which in the absence of recommended first aid can result in effects from minor burns to severe corneal injury, including keratitis, conjunctivitis and corneal abrasion.

SKIN: Contact with skin can result in irritation, which if not washed off or when accentuated by sunlight, can result in minor burns.

INHALATION: Overexposure to vapor may result in irritation to respiratory tract. Prolonged exposure can result in acute toxic effects such as dizziness, respiratory difficulty, convulsions and possible cardiovascular collapse.

INGESTION: Irritation of the gastrointestinal tract followed by nausea and vomiting, abdominal discomfort, rapid pulse, etc. Cardiovascular collapse may occur.

DELAYED EFFECTS: Prolonged and repeated skin exposure over many years in the absence of recommended hygiene practices may lead to changes in skin pigmentation, benign skin growths and may in some case, result in skin cancer. Additionally, inhalation may present a lung cancer hazard. Creosote is listed as and NTB carcinogen, an IRC probable carcinogen and is not on the OSHA list.

SECTION 4: FIRST AID MEASURES

IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not give anything by mouth to an unconscious person. Do not induce vomiting unless told to by a poison control center or doctor.
IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Call a poison control center or doctor for treatment advice.
IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
NOTE TO PHYSCIAN: Contains petroleum distillate – vomiting may cause aspiration pneumonia. Cardiorespiratory equipment should be available.

SECTION 5: FIREFIGHTING MEASURERS

FLASH POINT: > 93º C (> 200º F) Closed Cup

AUTOIGNITION TEMPERATURE: 336º C (637º F)

FLAMMABLE LIMITS (STP): Not Determined

EXTINGUISHING MEDIA: Use water/fog, carbon dioxide, foam, dry chemicals, sand or steam.

PROTECTIVE EQUIPMENT: Self-contained breathing apparatus with full facepiece and full protective clothing should be worn when fumes and/or smoke are present.

HMIS RATING: Health 2 Fire 1 Reactivity 1

NFPA RATING: Health 2 Fire 1 Reactivity 1

SPECIAL HAZARDS: Unusual Fire and Explosion Hazards – Water/fog is recommended for control of unconfined oil fires. Water may cause frothing or eruption in closed tank

SECTION 6: ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE: Always wear recommended personal protective equipment. Avoid breathing vapors and contact with skin and eyes. Avoid sources of ignition (sparks or open flame). Contain the spill or leak with solids, such as sand, earth, etc. Contaminated materials must be handled and managed as RCRA Hazardous Waste and treated before disposal in approved facilities. Do not allow product to enter into sewers or waterways.

The CERCLA RQ is 1 pound.

SECTION 7: HANDLING AND STORAGE

NORMAL HANDLING: Always wear recommended personal protective equipment. Wear clothing closed at the neck, long sleeves and non-porous type gloves such as neoprene, butyl rubber, nitrile, polyvinyl alcohol (PVA) or polyvinyl chloride (PVC).

STORAGE RECOMMENDATIONS: Store in closed containers. Keep away from children and food. Avoid exposure to sources of extreme heat (fire). Closed containers may explode when exposed to extreme heat (fire).

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

VENTILATION: Use in areas of adequate natural ventilation or provide exhaust ventilation or other engineering controls to keep the airborne concentration of vapors below their respective threshold limit value.

EYE PROTECTION: Use safety glasses, goggles and/or face shield.

BODY PROTECTION: Avoid skin contact whenever possible. For outdoor work, use a waterproof sunscreen (SPF 25 or greater). Reapply every 90 minutes while in direct sun. For exposed skin, use protective creams (for example: MSA's Fend AE-2, Kerodex 51, Jergens SBS-46). Applicators and other handlers must wear long-sleeved shirt and long pants, non-porous gloves such as neoprene, butyl rubber, nitrile, polyvinyl alcohol (PVA) or polyvinyl chloride (PVC), and chemical resistant footwear plus socks. Do not take contaminated work clothing home. It is recommended that a complete soap and water shower and/or steam bath be taken at the end of each work day.

RESPIRATORY PROTECTION: Use MSHA-NIOSH approved respirator for organic vapors, dusts and mists as necessary to control exposures above the recommended exposure levels.

OTHER PROTECTIVE EQUIPMENT: Eyewash station and safety shower in work area.

EXPOSURE GUIDELINES:

HAZARADOUS INGREDIENTS	CAS NUMBER	WT %	EXPOSURE LIMIT (PPM;MG/M^3)		
Creosote	8001-58-9	100	OSHA-TWA		0.2*
Phenanthrene	85-01-8	14.13	OSHA-TWA		0.2*
Flouranthene	206-44-0	7.41	None		
Pyrene	129-00-0	5.14	OSHA-TWA		0.2*
Acenaphthene	83-32-9	6.00	None		
Fluorene	86-73-7	4.39	None		
Naphthalene	91-20-3	16.11	OSHA-TWA	10	50
Dibenzofuran	132-64-9	3.13	None		
Anthracene	120-12-7	3.76	OSHA-TWA		0.2*
Benzo (a) anthracene	56-55-3	1.40	None		
Chrysene	218-01-9	1.22	OSHA-TWA		0.2*
Biphenyl	95-52-4	1.03	OSHA-TWA	0.2	1
Indeno (1,2,3-c,d) pyrene	193-39-5	0.12	None		

SECTION 8: EXPOSURE CONTOLS/PERSONAL PROTECTION - CONTINUED

Quinoline	91-22-5	0.90	None		
Benzo (a) pyrene	50-32-8	0.39	OSHA-TWA		0.2*
Benzene	71-43-2	0.13	OSHA-TWA	1	3***
			OSHA-STEL	5	15
Benzo (g, h, i) perylene	191-24-2	0.17	None		
m- & p-Xylene mixture	108-38-3 & 106-42-3	0.13	OSHA-TWA	100	435
Styrene	100-42-5	0.06	OSHA-TWA	100	
			OSHA-STEL	200	
Dibenzo (a,h) anthracene	53-70-3	0.04	None		
Phenol	108-95-2	0.06	OSHA-TWA	5	19**
Toluene	108-88-3	0.15	OSHA-TWA	100	
			OSHA-STEL	150	
Benzofuran (Coumarone)	271-89-6	0.19	None		
Ethylbenzene	100-41-4	0.04	OSHA-TWA	100	435
o-Xylene	95-47-6	0.04	OSHA-TWA	100	435
Indene	95-13-6	1.02	None		
2-Methylnaphthalene	91-57-6	4.84	None		
1-Methylnaphthalene	90-12-0	1.80	None		
Indene	95-13-6	1.02	None		
Benzo (b) fluoranthene	205-99-2	0.42	None		
Benzo (j) fluoranthene	205-82-3	0.30	None		
Benzo (k) fluoranthene	207-08-9	0.28	None		

EXPOSURE LIMIT (PRODUCT):

* For coal tar pitch volatiles, OSHA-PEL is 0.2 mg/m^3 averaged over an 8 hour work shift, benzene soluble fraction of total particulate including dust, fumes and mists.
** Skin
*** OSHA: Action Level – 0.5 ppm 8 hour TWA
# Suspected Human Carcinogen

NOTE: Percentages by weight are the maximum levels of constituents.

----------SARA TITLE III SECTION 313 CHEMICALS----------
(SEE ABOVE FOR CAS NUMBERS AND PERCENTAGES)

Creosote	Chrysene
Benzene	Dibenzofuran
Tolune	Benzo (a) pyrene
Ethylbenzene	Indol (1,2,3-c,d) pyrene
Styrene	Dibenzo (a, h) anthracene
Phenol	Benzo (g,h,i) perylene
Anthracene	Benzo (b) fluoranthene
Fluoranthene	Benzo (j) fluoranthene
Napthalene	Benzo (k) fluoranthene
Quinoline	Phenanthrene
Benzo (a) anthracene	m-, p- & o-Xylene

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Dark brown to black oily liquid
PHYSICAL STATE:	Viscous liquid
CHEMICAL FORMULA:	Mixture of organic compounds
MOLECULAR WEIGHT:	130 - 210
ODOR:	Penetrating smoky odor
BOILING POINT:	194 – 400º C (381 - 752º F)
MELTING POINT:	Not applicable
VAPOR PRESSURE:	80 mm Hg @ 100º C; 225 mm Hg @ 125º C; 370 mm Hg @ 150º C
VAPOR DENSITY:	>1.0 (air = 1.0)
EVAPORATION RATE:	< 1.0 (Butyl acetate = 1.0)
SPECIFIC GRAVITY:	1.03 – 1.18 (Avg. = 1.09)
BULK DENSITY:	8.60 – 9.85 (Avg. = 9.1 lbs/gal)
SOLUBILITY IN WATER:	Insoluble
pH VALUE:	Not determined
% VOLATILES:	475 g/l (3.96 lbs/gal)
FLASH POINT:	> 93º C (> 200º F) Both closed cup and open cup

SECTION 10: STABILITY AND REACTIVITY

HAZARDOUS REACTIONS (CONDITIONS TO AVOID):

Stability: Stable under normal conditions. Overheating will result in some degradation with oxides of carbon and hydrocarbon emissions. Avoid loading or unloading near open flame.

Incompatibility: Mixing of chlorosulfonic acid and creosote oil in a closed container can cause an increase in temperature and pressure (NFPA 491M, 1991)

Hazardous polymerization: Material is not known to polymerize.

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose under normal conditions of use. When heated to extreme temperatures, creosote emits acrid smoke.

SECTION 11: TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS: Oral LD_{50}: 725 mg/kg (rat)
433 mg/kg (mouse)

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS: Several studies in mice have shown the formation of both local (skin) and distant (lung) tumor formation after dermal exposure to creosote. [Poel & Kammer, 1957, Roe et al, 1958]

OTHER DATA: Creosote has cause mutations in *S. typhimurium* strains TA98, TA100, TA1537, TA1538 and mouse lymphoma cell L5178y, [Fed Reg. 1978; Bos et al 1983]. Death from large doses of creosote appears due primarily to cardiovascular collapse. Fatalities have occurred 14-26 hours after the ingestion of creosote (about 7g for adults; about 1 – 2g for children). [Clayton & Clayton, 3rd ed., 1981]

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY ASSESSMENT: Maybe toxic to aquatic wildlife.

OTHER ECOLOGY INFORMATION: All data for a 60:40 mixture of creosote and coal tar.

Carassius auratus (goldfish):	TL_{50} = 3.51 ppm/24 hours
Lepomis macrochirus (bluegill):	TL_{50} = 4.42 ppm/24 hours
Salnio gairdner (rainbow trout):	TL_{50} = 3.72 ppm/24 hours
Colinus virginianus (bobwhite quail):	LD_{50} = 1,260 ppm/8 days
Anas platyrhynchos (mallard duck):	LD_{50} = 10,388 ppm/8 days

SECTION 13: DISPOSAL CONSIDERATIONS

RCRA DISPOSAL: Unused creosote product or product wastes are classified as an RCRA hazardous waste. The RCRA ID number is: U051

OTHER DISPOSAL CONSIDERATIONS: Other waste code designations for creosote containing wastes appear in the December 6, 1990 *Federal Register* as F034; Wastewater's. process residuals, preservative drippage, and spent formulations from wood preserving processes generate at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol. Please consult with the appropriate state regulatory authorities to determine when the F034 designation is effective in the given state.

Creosote containing waste may also be characteristic hazardous wastes, even if not meeting the U051, K001 or F034 waste code designation.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

SECTION 14: TRANSPORT INFORMATION

U. S. DOT HAZARD CLASS: Environmentally Hazardous Substance, Liquid, N.O.S. (Creosote). 9
U. S. DOT ID NUMBER: UN 3082
U. S. DOT SHIPPING NAME: RQ, Environmentally Hazardous Substance, Liquid, N.O.S. (Creosote), 9, UN 3082, III

SECTION 15: REGULATORY INFORMATION

UNITED STATES EPA: EPA Reg. No. 61483-8
EPA Signal Word – CAUTION

OTHER:
SARA 311 Hazards Classification: Immediate, Delayed, Fire

SARA 313 Inventory Ingredients: See Section 8 for list of chemicals, CAS numbers and % concentration by weight.

SECTION 15: REGULATORY INFORMATION - CONTINUED

REPORTABLE QUANTITY: SARA/CERCLA: Creosote - 1 Lb
DOT: Creosote - 1 Lb
Benzo (b) fluoranthene – 1 Lb
Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center [(800) 424-8802], State Emergency Response Commission and to your Local Emergency Planning Committee.

RCRA HAZARDOUS WASTE: Listed as hazardous waste

TSCA INVENTORY STATUS: Listed on TSCA Inventory. Source of unknown or variable composition.

TOXIC RELEASE INVENTORY: Listed on TRI Inventory

CALIFORNIA PROPOSITION 65 – Contains chemicals known to the state to cause cancer or reproductive toxicity.
ADDITIONAL REGULATORY INFORMATION: For some applications, creosote is also regulated as a "Restricted Use" pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

WHMIS CLASSIFICATION (CANADA): Class D, Division 2, Subdivision A, very toxic material.

FOREIGN INVENTORY STATUS: Listed on the EINECS Inventory – ID# 2322875
Listed on Canadian Inventory Domestic Substance List (DSL)

SECTION 16: OTHER INFORMATION

REFERENCES:
1. ACGIH (1995): *"1995-1996 Threshold Limit Values...."*
2. USDOL/OSHA General Industry 29 CFR 1910.1000 Coal Tar Pitch Volatile (CTPV) Permissible Exposure Limit
3. USEPA 40 CFR Parts 112; 261; 268; 300
4. USDOT 49 CFR Part 172
5. USEPA(1986) *"Evaluation of the Potential Carcinogenicity of Creosote (8001-58-9)"*, Prepared by the Carcinogen Assessment Group, Office of Health and Environmental Assessment, Washington, DC for the Office of Emergency
and Remedial Response and the Office of Solid Waste and Emergency Response, Washington, DC
6. National Fire Prevention Association (1991): *"Fire Protection Guide on Hazardous Materials"*, 10th ed. NFPA:Quincy, MA, pg 325M-29, 491M.
7 USEPA (1980) *"Health and Environmental Effects of Creosote"*, EPA # 53, pg 53-12
8. Clayton & Clayton, eds (1981): *"Patty's Industrial Hygiene & Toxicology, Volume 2A, 2B, 2C Toxicology"*, 3rd ed. John Wiley & Sons, New York, NY
9. NIOSH (1977): *"Criteria for a recommended standard...Occupational Exposure to Coal Tar Products"*, USDHEW/NIOSH Publication # 78-107
10. Poel, W.E. and Kammer, A.G. (1957): *"Experimental carcinogenicity of coal-tar fractions: The carcinogenicity of creosote oils"* J NATL CANCER INST 18(1):41-55
11. Roe, F.J.C., Bosch, D., Boutwell, R.K. (1958): *The carcinogenicity of creosote oil: The induction of lung tumors in mice"*CANCER RES 18:1176-1178

SECTION 16: OTHER INFORMATION - CONTINUED

12. Bos, R.P., Hulshof, C.T.J., Theuws, J.L.G., Hendershon, P.Th. (1983): *"Mutagenicity of creosote in the Salmonella/microsome assay"* MUT RES 119:21-25
13. FEDERAL REGISTER (1978), Vol 43 #200; October 18th, page 48199
14. IARC (1987): *Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man"*, World Health Organization (WHO): Geneva p S7 177
15. NTP (1994): *"National Toxicology Program's 7th Annual Report on Carcinogens 1994 - Summary"*

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