MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

KOPPERS INC. 
436 SEVENTH AVENUE 
PITTSBURGH, PA 15219-1800 
naorgmsds@koppers.com 

MEDICAL EMERGENCIES: 877-737-9047 
MEDICAL EMERGENCIES OUTSIDE U.S.A.: 651-632-9269 
TECHNICAL ASSISTANCE: 412-227-2001 
MSDS REQUESTS: 866-852-5239 
CHEMTREC ASSISTANCE: 800-424-9300 
CANUTEC: 613-996-6666

MSDS NUMBER: 00228311

SUBSTANCE: COAL TAR DISTILLATE

TRADE NAMES/SYNONYMS:
HEAVY OIL; MIDDLE OIL; FUEL OIL

CHEMICAL FAMILY: hydrocarbons, coal-tar

PRODUCT USE: process chemical, solvent, fuel

REVISION DATE: Jun 14 2007

2. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=2  FIRE=1  REACTIVITY=0

EMERGENCY OVERVIEW:
COLOR: brown to black
PHYSICAL FORM: liquid
ODOR: coal tar odor
SIGNAL WORD: WARNING!
MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, central nervous system depression, lung cancer, skin cancer, (See Section 11 for additional information on potential hazards of constituents of the product.)
PHYSICAL HAZARDS: Containers may rupture or explode if exposed to heat. Contact with heat may generate toxic and/or flammable gases.
PRECAUTIONARY STATEMENTS: Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Keep container tightly closed. Use only with adequate ventilation. Wash thoroughly after handling. Contaminated clothing should be removed and laundered before reuse. Observe good hygiene and safety practices when handling this product. Do not use this product until the MSDS has been read and understood.

POTENTIAL HEALTH EFFECTS:
INHALATION:
SHORT TERM EXPOSURE: irritation, difficulty breathing, headache, dizziness, drowsiness, loss of coordination, weakness, coma
LONG TERM EXPOSURE: irritation

SKIN CONTACT:
SHORT TERM EXPOSURE: irritation, sensitivity to sunlight
LONG TERM EXPOSURE: irritation, sensitivity to sunlight, lung cancer, skin cancer

EYE CONTACT:
SHORT TERM EXPOSURE: irritation, sensitivity to sunlight
LONG TERM EXPOSURE: irritation, sensitivity to sunlight

INGESTION:
SHORT TERM EXPOSURE: irritation, nausea, vomiting, stomach pain, headache, dizziness, drowsiness, loss of coordination, coma
LONG TERM EXPOSURE: headache, dizziness, drowsiness, loss of coordination

3. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: COAL TAR DISTILLATE
CAS NUMBER: 65996-92-1
PERCENTAGE: 100

COMPONENT: PHENANTHRENE
CAS NUMBER: 85-01-8
PERCENTAGE: 15-22

COMPONENT: NAPHTHALENE
CAS NUMBER: 91-20-3
PERCENTAGE: 1.2-14

COMPONENT: FLUORANTHENE
CAS NUMBER: 206-44-0
PERCENTAGE: 7.1-14

COMPONENT: PYRENE
CAS NUMBER: 129-00-0
PERCENTAGE: 4.3-8.6

COMPONENT: ACENAPHTHENE
CAS NUMBER: 83-32-9
PERCENTAGE: 2.8-5.8

COMPONENT: ANTHRACENE
<table>
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<tr>
<th>COMPONENT</th>
<th>CAS NUMBER</th>
<th>PERCENTAGE</th>
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<tbody>
<tr>
<td>FLUORENE</td>
<td>120-12-7</td>
<td>3.7-4.9</td>
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<td>DIBENZOFURAN</td>
<td>86-73-7</td>
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<td>218-01-9</td>
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<td>1,2-BENZANTHRACENE</td>
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<td>205-82-3</td>
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<td>BENZO(K)FLUORANTHENE</td>
<td>207-08-9</td>
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<td>BENZO(A)PYRENE</td>
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<td>DIPHENYL</td>
<td>92-52-4</td>
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<td>QUINOLINE</td>
<td>91-22-5</td>
<td>0.05-0.39</td>
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<td>ETHYL BENZENE</td>
<td>100-41-4</td>
<td>0.01-0.04</td>
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<td>P-XYLENE</td>
<td>106-42-3</td>
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PERCENTAGE: 0.00-0.04

COMPONENT: TOLUENE
CAS NUMBER: 108-88-3
PERCENTAGE: 0.01-0.03

COMPONENT: BENZENE
CAS NUMBER: 71-43-2
PERCENTAGE: 0.00-0.02

4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

SKIN CONTACT: Wash skin with soap and water for at least 15 minutes, or use a waterless handcleaner, while removing contaminated clothing and shoes. Get immediate medical attention.

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: DO NOT induce vomiting. If vomiting occurs, keep head lower than hips to help prevent aspiration. Do not give anything by mouth to unconscious or convulsive person. Get medical attention.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Contact with heat may generate toxic and/or flammable gases. Containers may rupture or explode if exposed to heat.

EXTINGUISHING MEDIA: regular dry chemical, carbon dioxide, regular foam, water spray

FIRE FIGHTING: Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Use extinguishing agents appropriate for surrounding fire. Flood with fine water spray. Directly spraying water or foam onto hot burning product may cause frothing. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire.

FIRE FIGHTING PROTECTIVE EQUIPMENT: Full fire fighting turn-out gear (bunker gear).

SENSITIVITY TO MECHANICAL IMPACT: Not available

SENSITIVITY TO STATIC DISCHARGE: Not available
6. ACCIDENTAL RELEASE MEASURES

WATER RELEASE:
Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers.

OCCUPATIONAL RELEASE:
Stop leak if possible without personal risk. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. In Canada, report releases to provincial authorities, municipal authorities, or both, as required. Due to the concentration of Benzo(b)fluoranthene and the CERCLA (40 CFR 302.4) reportable quantity of 1 pound, the release of 62 pounds (7 gallons) of this product requires National Response Center notification.

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Keep in a closed, properly labeled container in a cool (shaded), dry, well-ventilated area. Keep separated from incompatible substances. Notify State Emergency Response Commission for storage or use at amounts greater than or equal to the TPQ (U.S. EPA SARA Section 302). SARA Section 303 requires facilities storing a material with a TPQ to participate in local emergency response planning (U.S. EPA 40 CFR 355.30).

HANDLING: Avoid repeated or prolonged breathing of vapor, mist or fume. Use only with adequate ventilation. Avoid prolonged or repeated contact with skin or eyes. When using, do not eat, drink or smoke. Wash exposed areas thoroughly with soap and water, or a waterless handcleaner, after skin contact and before eating, drinking, using tobacco products, or restrooms. To reduce sun sensitivity a sun-blocking lotion (SPF 15+) can also be applied prior to application of a protective cream. Contaminated clothing should be removed and laundered before reuse.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:
COAL TAR DISTILLATE:
COAL TAR PITCH VOLATILES:
0.2 mg/m³ OSHA TWA (benzene soluble fraction)
0.2 mg/m³ ACGIH TWA (benzene soluble fraction)
0.1 mg/m³ NIOSH recommended TWA 10 hour(s) (cyclohexane extractable fraction)

VENTILATION: Ensure adequate ventilation. Ensure compliance with applicable exposure limits.

EYE PROTECTION: ANSI Z87.1-1989 approved safety glasses with side shields. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.
CLOTHING: Wear appropriate clothing. Use protective skin cream on exposed skin before and during work shift. Remove any chemical soaked clothing immediately.

GLOVES: Wear appropriate gloves.

PROTECTIVE MATERIAL TYPES: protective skin cream, chemical resistant material

RESPIRATOR: If the applicable TLVs and/or PELs are exceeded, use canister or cartridge respirators, which are MSHA/NIOSH-approved, with organic vapor cartridges.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: liquid
COLOR: brown to black
ODOR: coal tar odor
BOILING POINT: >356 F (>180 C)
FREEZING POINT: Not available
VAPOR PRESSURE: 1 mmHg @ 30 C
VAPOR DENSITY (air=1): >1
SPECIFIC GRAVITY (water=1): >=1.05
WATER SOLUBILITY: slightly soluble
PH: Not available
VOLATILITY: Not available
ODOR THRESHOLD: Not available
EVAPORATION RATE: Not available
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

INCOMPATIBILITIES: oxidizing materials

HAZARDOUS DECOMPOSITION:
Thermal decomposition products: carbon monoxide, carbon dioxide

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

COAL TAR DISTILLATE:
CARCINOGEN STATUS: OSHA: No, NTP: No, IARC: Yes, (See below for additional information on
component carcinogen status)

**TARGET ORGANS:** respiratory system, skin, central nervous system

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** respiratory disorders, skin disorders, central nervous system disorders (i.e. headache, drowsiness, dizziness, loss of coordination)

**ADDITIONAL DATA:** This product is compositionally similar to creosote. IARC monograph (Vol. 35) states that there is sufficient evidence for carcinogenicity in experimental animals of coal-tars, creosotes, creosote oils, anthracene oils, and coal-tar pitches. Skin tumors and lung tumors were observed after skin application in animals. There is limited evidence that coal-tar-derived creosotes are carcinogenic in humans. Taken together, IARC concluded that the data indicate that coal-tars are causally associated with cancer in humans and that creosotes derived from coal-tars are probably carcinogenic in humans (IARC Group 2A).

In addition to containing information about the product as a whole, this data sheet also contains information about individual components of the product. Information of this nature may not have been derived from studies or data relating to this product and/or may have been derived from studies or data that did not involve human exposure and involved animal exposure only.

**COAL TAR DISTILLATE:**

**CARCINOGEN STATUS:** IARC: Human Limited Evidence, Animal Sufficient Evidence, Group 2A (Creosotes)

**LOCAL EFFECTS:**
Irritant: inhalation, skin

**POLYCYCLIC AROMATIC HYDROCARBONS:**

**ADDITIONAL DATA:** Some polycyclic aromatic hydrocarbons (PAHs), found in coal tar complex substances, have been reported to cause lung and skin cancer in humans under conditions of poor personal hygiene, prolonged/repeated contact, and exposure to sunlight. The National Toxicology Program (NTP) and IARC have independently classified various PAH compounds present in coal tar substances as reasonably anticipated to be human carcinogens (NTP), probably carcinogenic to humans (IARC Group 2A), possibly carcinogenic to humans (IARC Group 2B), and not classifiable as to carcinogenicity to humans (IARC Group 3). The cancers reported in the studies upon which IARC based its conclusions involved lung, skin, liver, stomach, kidney and blood cancers in animals. Based on the results of animal experiments PAHs may cause injury to the liver, kidneys, lungs, blood and lymph systems. Some PAH's have also been associated with impaired fertility, heritable genetic damage and birth defects in mice.

**NAPHTHALENE:**

**IRRITATION DATA:** 495 mg open skin-rabbit mild; 100 mg eyes-rabbit mild; 0.05 ml/24 hour(s) skin-rabbit severe

**TOXICITY DATA:** >340 mg/m3/1 hour(s) inhalation-rat LC50; >20 gm/kg skin-rabbit LD50; 490 mg/kg oral-rat LD50

**CARCINOGEN STATUS:** NTP: Anticipated Human Carcinogen; IARC: Human Inadequate Evidence, Animal Sufficient Evidence, Group 2B; ACGIH: A4 -Not Classifiable as a Human Carcinogen

**LOCAL EFFECTS:**
Irritant: inhalation, skin, eye

**ACUTE TOXICITY LEVEL:**
Toxic: ingestion

**TARGET ORGANS:** blood

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** metabolic disorders

**ADDITIONAL DATA:** May cross the placenta.
12. ECOLOGICAL INFORMATION

Not available

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:
PROPER SHIPPING NAME: Other regulated substances, liquid, n.o.s. RQ
ID NUMBER: NA3082
HAZARD CLASS OR DIVISION: 9
PACKING GROUP: III
LABELING REQUIREMENTS: 9
DOT HAZARDOUS SUBSTANCE(S):
Phenanthrene 5000 lb(s) (2270 kg(s))
Naphthalene 100 lb(s) (45.4 kg(s))
Fluoranthene 100 lb(s) (45.4 kg(s))
Acenaphthene 100 lb(s) (45.4 kg(s))
Dibenzofuran 100 lb(s) (45.4 kg(s))
1,2-Benzanthracene 10 lb(s) (4.54 kg(s))
Benzo(b)fluoranthene 1 lb(s) (0.454 kg(s))
Benzo(a)pyrene 1 lb(s) (0.454 kg(s))
Biphenyl 100 lb(s) (45.4 kg(s))
Benzene 10 lb(s) (4.54 kg(s))

OTHER INFORMATION: 'Other regulated substances, liquid, n.o.s.' applies for all container sizes.

CANADIAN TRANSPORTATION OF DANGEROUS GOODS: No classification assigned.

15. REGULATORY INFORMATION

U.S. REGULATIONS:
SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):
PYRENE: 1000/10000 LBS TPQ

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40):
PYRENE: 5000 LBS RQ

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):
ACUTE: Yes
CHRONIC: Yes
FIRE: No
REACTIVE: No
SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65):
PHENANTHRENE
NAPHTHALENE
FLUORANTHRENE
ANTHRACENE
DIBENZOFURAN
1,2-Benzphenanthrene (Chrysene)
1,2-Benzanthracene
BENZO(B)FLUORANTHRENE
BENZO(J)FLUORANTHRENE
BENZO(K)FLUORANTHRENE
Benzo(a)pyrene

STATE REGULATIONS:
California Proposition 65:
Known to the state of California to cause the following:
Soots, tars, and mineral oils (untreated and mildly treated oils and used engine oils)
Cancer (Feb 27, 1987)
NAPHTHALENE
Cancer (Apr 19, 2002)
1,2-Benzphenanthrene (Chrysene)
Cancer (Jan 01, 1990)
1,2-Benzanthracene
Cancer (Jul 01, 1987)
BENZO(B)FLUORANTHRENE
Cancer (Jul 01, 1987)
BENZO(J)FLUORANTHRENE
Cancer (Jul 01, 1987)
BENZO(K)FLUORANTHRENE
Cancer (Jul 01, 1987)
Benzo(a)pyrene
Cancer (Jul 01, 1987)
Quinoline and its strong acid salts
Cancer (Oct 24, 1997)
ETHYL BENZENE
Cancer (Jun 11, 2004)
TOLUENE
Developmental toxicity (Jan 01, 1991)
Benzene
Cancer (Feb 27, 1987)
Developmental toxicity (Dec 26, 1997)
Male reproductive toxicity (Dec 26, 1997)

CANADIAN REGULATIONS:
WHMIS CLASSIFICATION: D2A.
**NATIONAL INVENTORY STATUS:**
**U.S. INVENTORY (TSCA):** Listed on inventory.

**TSCA 12(b) EXPORT NOTIFICATION:**

**NAPHTHALENE**  
**CAS NUMBER:** 91-20-3  
**SECTION 4**

**DIPHENYL**  
**CAS NUMBER:** 92-52-4  
**SECTION 4**

**P-XYLENE**  
**CAS NUMBER:** 106-42-3  
**SECTION 4**

**CANADA INVENTORY (DSL/NDSL):** All components of this product are listed on either the DSL or the NDSL.

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**16. OTHER INFORMATION**

**MSDS SUMMARY OF CHANGES**

2. HAZARDS IDENTIFICATION  
3. COMPOSITION, INFORMATION ON INGREDIENTS  
11. TOXICOLOGICAL INFORMATION

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