Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name
CRUDE COKE OVEN TAR, CRUDE COAL TAR

Synonyms
CENTRIFUGE TAR

Product Use
process chemical.

Restrictions on Use
None known.

Details of the supplier of the safety data sheet
KOPPERS INC.
436 Seventh Avenue
Pittsburgh, PA 15219-1800
Mfg Contact: 412-227-2001 (SDS Requests: 866-852-5239)

CHEMTREC: 800-424-9300 (Outside USA: +1 703-527-3887)
Emergencies: (Medical in USA): 877-737-9047
Emergencies: (Medical Outside of USA): 651-632-9269
E-mail: naorgmsds@koppers.com

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.
Acute Toxicity - Dermal - Category 4
Acute Toxicity - Inhalation - Dust/Mist - Category 3
Skin Corrosion/Irritation - Category 2
Serious Eye Damage/Eye Irritation - Category 2A
Skin Sensitization - Category 1
Germ Cell Mutagenicity - Category 1B
Carcinogenicity - Category 1A
Reproductive Toxicity - Category 1B
Specific target organ toxicity - Single exposure - Category 1 (blood, respiratory system, kidneys, nervous system, heart)
Specific target organ toxicity - Single exposure - Category 2 (eyes)
Specific Target Organ Toxicity - Repeated Exposure - Category 1 (blood, eyes, respiratory system, central nervous system)
Hazardous to the Aquatic Environment - Acute - Category 2
Hazardous to the Aquatic Environment - Chronic - Category 2

GHS Label Elements

Symbol(s)

Signal Word
Danger
Safety Data Sheet

Material Name: CRUDE COKE OVEN TAR, CRUDE COAL TAR

Hazard Statement(s)
Toxic if inhaled.
Harmful in contact with skin.
Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.
May cause genetic defects.
May cause cancer.
May damage fertility or the unborn child.
Causes damage to organs. (blood, respiratory system, kidneys, nervous system, heart)
May cause damage to organs. (eyes)
Causes damage to organs through prolonged or repeated exposure. (blood, eyes, respiratory system, central nervous system)
Toxic to aquatic life with long lasting effects.

Precautionary Statement(s)

Prevention
Do not breathe vapor or mist.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Do not eat, drink or smoke when using this product.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid release to the environment.

Response
IF exposed or concerned: Get medical advice/attention.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/physician.
IF ON SKIN: Wash with plenty of soap and water.
Call a POISON CENTER or doctor/physician if you feel unwell.
If skin irritation or rash occurs: Get medical advice/attention.
Take off contaminated clothing and wash before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
If eye irritation persists: Get medical advice/attention.
Collect spillage.

Storage
Store in a well-ventilated place.
Keep container tightly closed.
Store locked up.

Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations.

Statement(s) of Unknown Acute Toxicity
Dermal 72% of the mixture consists of ingredient(s) of unknown acute toxicity.
Inhalation: 97% of the mixture consists of ingredient(s) of unknown acute toxicity.

Other Hazards
Heated material may cause thermal burns.
Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS</th>
<th>Component Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>65996-89-6</td>
<td>Tar, coal, high-temperature</td>
<td>100</td>
</tr>
<tr>
<td>-</td>
<td>The above listed complex substance contains the following constituents</td>
<td>-</td>
</tr>
<tr>
<td>Not Available</td>
<td>POLYCYCLIC AROMATIC HYDROCARBONS</td>
<td>7.0-31.0</td>
</tr>
<tr>
<td>91-20-3</td>
<td>Naphthalene</td>
<td>3.0-12.0</td>
</tr>
<tr>
<td>85-01-8</td>
<td>Phenanthrene</td>
<td>2.5-7.5</td>
</tr>
<tr>
<td>206-44-0</td>
<td>Fluoranthene</td>
<td>1.5-5.0</td>
</tr>
<tr>
<td>120-12-7</td>
<td>Anthracene</td>
<td>0.7-4.0</td>
</tr>
<tr>
<td>83-32-9</td>
<td>Acenaphthene</td>
<td>0.10-3.0</td>
</tr>
<tr>
<td>205-99-2</td>
<td>Benzo(b)fluoranthene</td>
<td>0.4-2.5</td>
</tr>
<tr>
<td>132-64-9</td>
<td>Dibenzo furan</td>
<td>1.0-2.5</td>
</tr>
<tr>
<td>50-32-8</td>
<td>Benzo[a]pyrene</td>
<td>0.1-2.0</td>
</tr>
<tr>
<td>56-55-3</td>
<td>Benz[a]anthracene</td>
<td>0.5-1.6</td>
</tr>
<tr>
<td>207-08-9</td>
<td>Benzo(k)fluoranthene</td>
<td>0.1-1.5</td>
</tr>
<tr>
<td>218-01-9</td>
<td>Chrysene</td>
<td>0.1-1.5</td>
</tr>
<tr>
<td>193-39-5</td>
<td>Indeno(1,2,3-cd)pyrene</td>
<td>0.1-1.0</td>
</tr>
<tr>
<td>108-88-3</td>
<td>TOLUENE</td>
<td>0.1-1.0</td>
</tr>
<tr>
<td>71-43-2</td>
<td>Benzene</td>
<td>0.1-1.0</td>
</tr>
<tr>
<td>108-95-2</td>
<td>Phenol</td>
<td>0.1-1.0</td>
</tr>
</tbody>
</table>

Component Related Regulatory Information
This product may be regulated, have exposure limits or other information identified as the following: Aromatic hydrocarbons, polycyclic (130489-29-2).

Section 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
Take off immediately all contaminated clothing. Wash all affected skin areas with warm soapy water. Skin contact causes photosensitization which can last for 36-72 hours after exposure. Keep out of direct sunlight for the next two
to three days to avoid sunburn to the photosensitized skin areas. Use a broad spectrum blockout cream to protect against UV alpha ray exposure. Get medical attention, if needed.

**Eyes**
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Then get immediate medical attention.

**Ingestion**
Not a likely route of exposure. Rinse mouth. Do NOT induce vomiting. If a large amount is swallowed, get medical attention. Do not give anything by mouth to unconscious or convulsive person. If vomiting occurs, keep head lower than hips to help prevent aspiration.

**Most Important Symptoms/Effects**
**Acute**
Harmful in contact with skin, toxic if inhaled, skin irritation, eye irritation, thermal burns from heated material, allergic reactions, blood damage, respiratory system damage, kidney damage, nervous system damage, heart damage, eye damage

**Delayed**
allergic reactions, mutagenic effects, Reproductive Effects, blood damage, eye damage, respiratory system damage, central nervous system damage, lung cancer, bladder cancer, skin cancer, scrotal cancer

**Indication of any immediate medical attention and special treatment needed**
Treat symptomatically and supportively.

**Section 5 - FIRE FIGHTING MEASURES**

**Extinguishing Media**

**Suitable Extinguishing Media**
regular dry chemical, carbon dioxide, regular foam, water spray, fog or mist

**Unsuitable Extinguishing Media**
Do not use high-pressure water streams.

**Hazardous Combustion Products**
oxides of carbon

**Advice for firefighters**
Contact with heat may generate toxic and/or flammable gases. Containers may rupture or explode if exposed to heat.

**Fire Fighting Measures**
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.

**Special Protective Equipment and Precautions for Firefighters**
Wear full protective firefighting gear including self-contained breathing apparatus (SCBA) for protection against possible exposure.

**Section 6 - ACCIDENTAL RELEASE MEASURES**

**Personal Precautions, Protective Equipment and Emergency Procedures**
Wear personal protective clothing and equipment, see Section 8. Avoid release to the environment.

**Methods and Materials for Containment and Cleaning Up**
Safety Data Sheet

Material Name: CRUDE COKE OVEN TAR, CRUDE COAL TAR

Stop leak if possible without personal risk. To prevent liquid from flowing into drains, completely contain spilled material with dikes, sandbags, etc. 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 40 pounds (4 gallons) of this product requires National Response Center notification. See Section 13 for waste disposal information.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling
Do not breathe vapor or mist. Avoid breathing vapors of heated materials. Avoid contact with eyes, skin and clothing. Use only outdoors or in a well-ventilated area. When using, do not eat, drink or smoke. Wear protective gloves/clothing and eye/face protection. Wash exposed areas thoroughly with soap and water, or a waterless hand cleaner, after skin contact and before eating, drinking, using tobacco products, or restrooms. Use protective skin cream on exposed skin before and during work shift. To reduce sun sensitivity a sun-blocking lotion can also be applied prior to application of a protective cream. Contaminated clothing should be removed and laundered before reuse. Contaminated work clothing should not be allowed out of the workplace unless laundered or decontaminated. After working with the product use warm soapy water and a wash cloth to thoroughly wash all areas of skin that have been contacted with product. After washing, apply a broad spectrum UV blockout cream on exposed skin areas before going into sunlight. Keep out of strong sunlight for two to three days after being affected by the product. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Conditions for Safe Storage, Including any Incompatibilities
Store in a well-ventilated place.
Keep container tightly closed.
Store locked up.
Store and handle in accordance with all current regulations and standards. Label all containers. Keep in a closed, properly labeled container in a cool (shaded), dry, well-ventilated area. Protect from physical damage. 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 Part B).

Incompatible Materials
oxidizing materials

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

<table>
<thead>
<tr>
<th>Component</th>
<th>Exposure Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tar, coal, high-temperature</strong></td>
<td>65996-89-6</td>
</tr>
<tr>
<td>ACGIH:</td>
<td>0.2 mg/m3 TWA as benzene-soluble aerosol (related to Pitch, coal tar, high-temperature)</td>
</tr>
<tr>
<td>OSHA (US):</td>
<td>0.2 mg/m3 TWA (benzene soluble fraction) (related to Pitch, coal tar, high-temperature)</td>
</tr>
<tr>
<td><strong>Naphthalene</strong></td>
<td>91-20-3</td>
</tr>
<tr>
<td>ACGIH:</td>
<td>10 ppm TWA</td>
</tr>
<tr>
<td>OSHA (US):</td>
<td>Skin - potential significant contribution to overall exposure by the cutaneous route</td>
</tr>
<tr>
<td></td>
<td>10 ppm TWA ; 50 mg/m3 TWA</td>
</tr>
</tbody>
</table>
### Benzene

<table>
<thead>
<tr>
<th>Material Name</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
</tr>
</tbody>
</table>

**ACGIH:**
- 0.5 ppm TWA
- 2.5 ppm STEL

**OSHA (US):**
- 10 ppm TWA applies to industry segments exempt from the benzene standard at 29 CFR 1910.1028; 1 ppm TWA
- 5 ppm STEL (See 29 CFR 1910.1028) 15 min; 0.5 ppm Action Level; 1 ppm TWA
- 5 ppm STEL (see 29 CFR 1910.1028)
- 25 ppm Ceiling

**Phenol**

<table>
<thead>
<tr>
<th>Material Name</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>108-95-2</td>
</tr>
</tbody>
</table>

**ACGIH:**
- 5 ppm TWA

**OSHA (US):**
- 5 ppm TWA; 19 mg/m³ TWA
- 5 ppm TWA; 19 mg/m³ TWA
- prevent or reduce skin absorption

---

**ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)**

**Tar, coal, high-temperature (65996-89-6)**
Medium: urine Time: end of shift at end of workweek Parameter: 1-Hydroxypyrene with hydrolysis (nonquantitative) (related to Pitch, coal tar, high-temperature)

**Naphthalene (91-20-3)**
Time: end of shift Parameter: 1-Naphthol with hydrolysis plus 2-Naphthol with hydrolysis (nonquantitative, nonspecific)

**Benzene (71-43-2)**
25 µg/g creatinine Medium: urine Time: end of shift Parameter: S-Phenylmercapturic acid (background); 500 µg/g creatinine Medium: urine Time: end of shift Parameter: t,t-Muconic acid (background)

**Phenol (108-95-2)**
250 mg/g creatinine Medium: urine Time: end of shift Parameter: Phenol with hydrolysis (background, nonspecific)

**Engineering Controls**
Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

**Individual Protection Measures, such as Personal Protective Equipment**

**Eye/face 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. At elevated temperatures: A face shield is recommended.

**Skin Protection**
Wear protective clothing to prevent contact. Wear long sleeved shirt or overalls fastened at wrists and neck, with long legged trousers with trouser legs worn outside over boot tops, boots, socks, and safety hat plus gloves. Use protective skin cream on exposed skin before and during work shift. Protective clothing must be changed when it shows signs of contamination. Remove and launder contaminated clothing separately from other laundry before reuse. When material is at an elevated temperature, wear appropriate heat resistant clothing.
Safety Data Sheet
Material Name: CRUDE COKE OVEN TAR, CRUDE COAL TAR

**Respiratory Protection**
If the applicable TLVs and/or PELs are exceeded, use NIOSH-approved multipurpose air-purifying cartridge respirators, for organic vapors and P-100 particulate.

**Glove Recommendations**
Wear appropriate chemical resistant gloves. When material is at an elevated temperature, wear appropriate heat resistant gloves.

**Protective Materials**
protective skin cream, chemical resistant material, heat resistant material

### Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>black viscous Liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>aromatic odor</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting Point</td>
<td>16.6 °F</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>410 °F</td>
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<tr>
<td>Boiling Point Range</td>
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</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Lower Explosive Limit</td>
<td>Not available</td>
</tr>
<tr>
<td>Upper Explosive Limit</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Density (air=1)</td>
<td>Not available</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>&gt;20.5 mm2/s</td>
</tr>
<tr>
<td>Solubility (Other)</td>
<td>Not available</td>
</tr>
<tr>
<td>Physical Form</td>
<td>viscous liquid</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>Not available</td>
</tr>
<tr>
<td>Physical State</td>
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</tr>
<tr>
<td>Color</td>
<td>black</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Freezing point</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>&gt;205 °F</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>0.2 - 1 mmHg @ 68 °C</td>
</tr>
<tr>
<td>Specific Gravity (water=1)</td>
<td>1.16</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>Not available</td>
</tr>
<tr>
<td>Density</td>
<td>Not available</td>
</tr>
<tr>
<td>Texture</td>
<td>viscous</td>
</tr>
<tr>
<td>OSHA Flammability Class</td>
<td>4</td>
</tr>
</tbody>
</table>

### Section 10 - STABILITY AND REACTIVITY

**Reactivity**
No reactivity hazard is expected.

**Chemical Stability**
Stable at normal temperatures and pressure.
Possibility of Hazardous Reactions
Will not polymerize.

Conditions to Avoid
Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials. Containers may rupture or explode if exposed to heat. Keep out of water supplies and sewers.

Incompatible Materials
oxidizing materials

Hazardous decomposition products
oxides of carbon

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation
respiratory system damage, central nervous system damage, eye damage, blood damage, kidney damage, lung cancer, bladder cancer

Skin Contact
irritation, sensitivity to sunlight, allergic reactions, thermal burns from heated material, eye damage, Reproductive Effects, central nervous system damage, blood damage, kidney damage, nervous system damage, skin cancer, scrotal cancer

Eye Contact
irritation, sensitivity to sunlight, thermal burns from heated material, eye damage

Ingestion
thermal burns from heated material, eye damage, central nervous system damage, blood damage, nervous system damage, kidney damage

Acute and Chronic Toxicity

Component Analysis - LD50/LC50
The components of this material have been reviewed in various sources and the following selected endpoints are published:

Tar, coal, high-temperature (65996-89-6)
Oral LD50 Rat 3300 mg/kg (related to Pitch, coal tar, high-temperature)
Dermal LD50 Rat >5000 mg/kg (no deaths occurred ) (related to Pitch, coal tar, high-temperature)

Naphthalene (91-20-3)
Oral LD50 Rat 1110 mg/kg
Dermal LD50 Rabbit 1120 mg/kg
Inhalation LC50 Rat >340 mg/m3 1 h

Phenol (108-95-2)
Oral LD50 Rat 340 mg/kg
Dermal LD50 Rabbit 630 mg/kg

Product Toxicity Data

Acute Toxicity Estimate

<table>
<thead>
<tr>
<th>Route</th>
<th>Toxicity Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dermal</td>
<td>1174.01 mg/kg</td>
</tr>
<tr>
<td>Inhalation - Dust and Mist</td>
<td>2.72 mg/L</td>
</tr>
<tr>
<td>Oral</td>
<td>&gt;2000 mg/kg</td>
</tr>
</tbody>
</table>

Immediate Effects
Safety Data Sheet

Material Name: CRUDE COKE OVEN TAR, CRUDE COAL TAR

Harmful in contact with skin, toxic if inhaled, skin irritation, eye irritation, thermal burns from heated material, allergic reactions, blood damage, respiratory system damage, kidney damage, nervous system damage, heart damage, eye damage.

Delayed Effects
allergic reactions, mutagenic effects, Reproductive Effects, blood damage, eye damage, respiratory system damage, central nervous system damage, lung cancer, bladder cancer, skin cancer, scrotal cancer

Irritation/Corrosivity Data
Erythema/eschar score: very slight

Respiratory Sensitization
No evidence that the material can lead to respiratory hypersensitivity.

Dermal Sensitization
Component data indicate the substance is sensitizing.

Component Carcinogenicity

<table>
<thead>
<tr>
<th>Tar, coal, high-temperature</th>
<th>65996-89-6</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH:</td>
<td>A1 - Confirmed Human Carcinogen (related to Pitch, coal tar, high-temperature)</td>
</tr>
<tr>
<td>IARC:</td>
<td>Supplement 7 [1987] (Group 1 (carcinogenic to humans))</td>
</tr>
<tr>
<td>NTP:</td>
<td>Known Human Carcinogen (related to Pitch, coal tar, high-temperature)</td>
</tr>
<tr>
<td>NIOSH:</td>
<td>potential occupational carcinogen (related to Pitch, coal tar, high-temperature)</td>
</tr>
</tbody>
</table>

May cause cancer. NOAEL: 36 mg/kg bw/day - oral.

Germ Cell Mutagenicity
Bacterial Reverse Mutation Test – positive. May cause genetic defects.

Tumorigenic Data
No data available

Reproductive Toxicity
Available data characterizes this substance as a reproductive hazard. May damage fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure
blood, respiratory system, kidneys, nervous system, heart, eyes

Specific Target Organ Toxicity - Repeated Exposure
blood, eyes, respiratory system, central nervous system

Aspiration hazard
Not expected to be an aspiration hazard.

Medical Conditions Aggravated by Exposure
respiratory disorders, skin disorders and allergies, eye disorders, central nervous system disorders (i.e. headache, drowsiness, dizziness, loss of coordination) blood system disorders, metabolic disorders, immune system disorders or allergies

Additional Data
Coal tars are listed in the IARC monographs as carcinogenic to humans (Group 1). IARC’s evaluation is based on evidence from the first half of the 20th century that occupational exposures to coal-tar derived products are associated with skin cancer in humans. There are also case reports and a few other studies on occupational exposures to coal-tars that are consistent with this evaluation. Epidemiological studies provide evidence that certain exposures
in the coke production industry are carcinogenic to humans, giving rise to lung cancer possibly from coal-tar fume. Also, there is evidence for the carcinogenicity in experimental animals of coal-tars. Today, with the use of engineering controls and personal protective equipment, occupational exposure to coal tar derived components is expected to be below permissible limits (measured as CTPVs). 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. 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.

**Section 12 - ECOLOGICAL INFORMATION**

**Ecotoxicity**
Toxic to aquatic life with long lasting effects.

**Component Analysis - Aquatic Toxicity**

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tar, coal, high-temperature</td>
<td>65996-89-6</td>
</tr>
<tr>
<td>Fish:</td>
<td>LC50 96 h Oryzias latipes 7.33 - 235 mg/L [semi-static ]</td>
</tr>
<tr>
<td>Algae:</td>
<td>EC50 72 h Pseudokirchneriella subcapitata 0.015 mg/L IUCLID</td>
</tr>
<tr>
<td>Invertebrate:</td>
<td>LC50 48 h Daphnia magna 4.44 - 11.2 mg/L IUCLID</td>
</tr>
</tbody>
</table>

**Fish Toxicity**
>250 mg/l 96 hour(s) LL50 Brachydanio rerio (Zebra fish)

**Invertebrate Toxicity**
2.8 mg/l 48 hour(s) EL50 Daphnia magna.

**Algal Toxicity**
29 mg/l 72 hour(s) EL50 Desmodesmus subspicatus. 5 mg/l 72 hour(s) NOELR.

**Persistence and Degradability**
Highly insoluble in water.

**Bioaccumulative Potential**
This material is believed not to bioaccumulate due to low water solubility. Highly insoluble in water.

**Mobility**
Highly insoluble in water.

**Other Toxicity**
No data available.

**Section 13 - DISPOSAL CONSIDERATIONS**

**Disposal Methods**
Dispose in accordance with all applicable regulations. Based on the results of the Toxicity Characteristic Leaching Procedure (TCLP): Benzene - D018 (toxicity $\geq 0.5$ ppm). 

**Component Waste Numbers**
The U.S. EPA has not published waste numbers for this product's components.

**Section 14 - TRANSPORT INFORMATION**

**US DOT Information:**
- **Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. , (Contains:
  - BENZO(A)PYRENE , BENZO(B)FLUORANTHENE , NAPHTHALENE ) RQ
- **Hazard Class:** 9
- **UN/NA #:** UN3082
- **Packing Group:** III
- **Required Label(s):** 9
- **Marine pollutant**

**Further information:** For International Shipments: RQ Environmentally hazardous substances, liquid, n.o.s. ID Number UN3082 This material contains reportable quantity (RQ) Hazardous Substances.

**IATA Information:**
- **Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. , (Contains:
  - BENZO(A)PYRENE , BENZO(B)FLUORANTHENE , NAPHTHALENE ) RQ
- **Hazard Class:** 9
- **UN#:** UN3082
- **Packing Group:** III
- **Required Label(s):** 9
- **Marine pollutant**

**Further information:** Passenger & Cargo Aircraft - Ltd. Qty. - (Packing Instruction / Max. Net Qty. per Pkg.):
  - Y964 / 30 kg G
  - Passenger & Cargo Aircraft (Packing Instruction / Max. Net Qty. per Pkg.): 964 / 450 L
  - ERG Code: 9L

**TDG Information:**
- **Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. , (Contains:
  - BENZO(A)PYRENE , BENZO(B)FLUORANTHENE , NAPHTHALENE ) RQ
- **Hazard Class:** 9
- **UN#:** UN3082
- **Packing Group:** III
- **Required Label(s):** 9
- **Marine pollutant**

**International Bulk Chemical Code**
This material contains one or more of the following chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

<table>
<thead>
<tr>
<th>Tar, coal, high-temperature</th>
<th>65996-89-6</th>
</tr>
</thead>
</table>

**Further information**
- **STCC Code:** 2814137; HAZ STCC Code: 4966312, ERG: 171 US DOT Reportable Quantities
- **BENZO(B)FLUORANTHENE (205-99-2) 1 lbs RQ; 0.454 kg RQ**

**Section 15 - REGULATORY INFORMATION**

**U.S. Federal Regulations**
Material Name: CRUDE COKE OVEN TAR, CRUDE COAL TAR

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

<table>
<thead>
<tr>
<th>Chemical</th>
<th>TSCA 12b</th>
<th>SARA 313</th>
<th>CERCLA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>0.1 % de minimis concentration</td>
<td>100 lb final RQ ; 45.4 kg final RQ</td>
</tr>
<tr>
<td>Phenanthrene</td>
<td>85-01-8</td>
<td>1 % de minimis concentration</td>
<td>5000 lb final RQ ; 2270 kg final RQ</td>
</tr>
<tr>
<td>Fluoranthene</td>
<td>206-44-0</td>
<td>1 % Supplier notification limit</td>
<td>100 lb final RQ ; 45.4 kg final RQ</td>
</tr>
<tr>
<td>Anthracene</td>
<td>120-12-7</td>
<td>1 % de minimis concentration</td>
<td>5000 lb final RQ ; 2270 kg final RQ</td>
</tr>
<tr>
<td>Acenaphthene</td>
<td>83-32-9</td>
<td>100 lb final RQ ; 45.4 kg final RQ</td>
<td></td>
</tr>
<tr>
<td>Benzo(b)fluoranthene</td>
<td>205-99-2</td>
<td>0.1 % Supplier notification limit</td>
<td>1 lb final RQ ; 0.454 kg final RQ</td>
</tr>
<tr>
<td>Dibenzofuran</td>
<td>132-64-9</td>
<td>1 % de minimis concentration</td>
<td>100 lb final RQ ; 45.4 kg final RQ</td>
</tr>
<tr>
<td>Benzo[a]pyrene</td>
<td>50-32-8</td>
<td>0.1 % Supplier notification limit</td>
<td>1 lb final RQ ; 0.454 kg final RQ</td>
</tr>
</tbody>
</table>
### Benz[a]anthracene
- **SARA 313:** 0.1 % Supplier notification limit  
- **CERCLA:** 10 lb final RQ ; 4.54 kg final RQ

### Benzo(k)fluoranthene
- **SARA 313:** 0.1 % Supplier notification limit  
- **CERCLA:** 5000 lb final RQ ; 2270 kg final RQ

### Chrysene
- **SARA 313:** 1 % Supplier notification limit  
- **CERCLA:** 100 lb final RQ ; 45.4 kg final RQ

### Indeno(1,2,3-cd)pyrene
- **SARA 313:** 0.1 % Supplier notification limit  
- **CERCLA:** 100 lb final RQ ; 45.4 kg final RQ

### TOLUENE
- **SARA 313:** 1 % de minimis concentration  
- **CERCLA:** 1000 lb final RQ ; 454 kg final RQ

### Benzene
- **SARA 313:** 0.1 % de minimis concentration  
- **CERCLA:** 10 lb final RQ (received an adjusted RQ of 10 lbs based on potential carcinogenicity in an August 14, 1989 final rule ); 4.54 kg final RQ (received an adjusted RQ of 10 lbs based on potential carcinogenicity in an August 14, 1989 final rule )

### Phenol
- **SARA 302:** 500 lb lower TPQ ; 10000 lb upper TPQ  
- **SARA 313:** 1 % de minimis concentration  
- **CERCLA:** 1000 lb final RQ ; 454 kg final RQ  
- **SARA 304:** 1000 lb EPCRA RQ

**SARA Section 311/312 (40 CFR 370 Subparts B and C) reporting categories**
- Carcinogenicity; Acute toxicity; Reproductive Toxicity; Skin Corrosion/Irritation; Respiratory/Skin Sensitization; Serious Eye Damage/Eye Irritation; Specific Target Organ Toxicity; Germ Cell Mutagenicity

**U.S. State Regulations**
The following components appear on one or more of the following state hazardous substances lists:
## Safety Data Sheet

**Material Name:** CRUDE COKE OVEN TAR, CRUDE COAL TAR  
**SDS ID:** 00228330

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>CA</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tar, coal, high-temperature</td>
<td>65996-89-6</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

**WARNING!** This product contains a chemical known to the state of California to cause cancer

**WARNING!** This product contains a chemical known to the state of California to cause reproductive/developmental effects

### Canada Regulations

**Canadian WHMIS Ingredient Disclosure List (IDL)**

Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which meet WHMIS criteria specified in the Controlled Products Regulations and are present above the threshold limits listed on the IDL.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>CA</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tar, coal, high-temperature</td>
<td>65996-89-6</td>
<td>0.1 % (related to Pitch, coal tar, high-temperature)</td>
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</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>1 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phenanthrene</td>
<td>85-01-8</td>
<td>1 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluoranthene</td>
<td>206-44-0</td>
<td>1 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anthracene</td>
<td>120-12-7</td>
<td>1 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acenaphthene</td>
<td>83-32-9</td>
<td>1 %</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Benzo(b)fluoranthene</td>
<td>205-99-2</td>
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<tr>
<td>Benzo[a]pyrene</td>
<td>50-32-8</td>
<td>0.1 %</td>
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<td></td>
</tr>
<tr>
<td>Benz[a]anthracene</td>
<td>56-55-3</td>
<td>0.1 %</td>
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<tr>
<td>Chrysene</td>
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### Component Analysis - Inventory

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</thead>
<tbody>
<tr>
<td>Tar, coal, high-temperature (65996-89-6)</td>
<td>Yes</td>
<td>DSL</td>
<td>EIN</td>
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<td>Yes</td>
<td>No</td>
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### WHMIS Classification

D2A, D2B

### The above listed complex substance contains the following constituents (-)

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<tr>
<td>POLYCYCLIC AROMATIC HYDROCARBONS (Not Available)</td>
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### Naphthalene (91-20-3)

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</table>
### Safety Data Sheet

**Material Name:** CRUDE COKE OVEN TAR, CRUDE COAL TAR  
**SDS ID:** 00228330

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#### Phenanthrene (85-01-8)

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<tbody>
<tr>
<td>Yes</td>
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#### Fluoranthene (206-44-0)

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<tbody>
<tr>
<td>Yes</td>
<td>NSL</td>
<td>EIN</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
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#### Anthracene (120-12-7)

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<tbody>
<tr>
<td>Yes</td>
<td>D SL</td>
<td>EIN</td>
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#### Acenaphthene (83-32-9)

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<tr>
<td>Yes</td>
<td>D SL</td>
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#### Benzo(b)fluoranthene (205-99-2)
## Safety Data Sheet

**Material Name:** CRUDE COKE OVEN TAR, CRUDE COAL TAR  
**SDS ID:** 00228330

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### Dibenzofuran (132-64-9)

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<tr>
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### Benzo[a]pyrene (50-32-8)

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### Benz[a]anthracene (56-55-3)

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### Benzo(k)fluoranthene (207-08-9)

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### Chrysene (218-01-9)

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Page 17 of 19  
Issue date: 2018-03-08  
Revision 3.0  
Print date: 2018-03-08
### Indeno(1,2,3-cd)pyrene (193-39-5)

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<tr>
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### TOLUENE (108-88-3)

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### Benzene (71-43-2)

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### Phenol (108-95-2)

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Safety Data Sheet

Material Name: CRUDE COKE OVEN TAR, CRUDE COAL TAR

U.S. Inventory (TSCA)
Listed on inventory.

Section 16 - OTHER INFORMATION

NFPA Ratings
Health: 2 Fire: 1 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes
Updated: 12/26/2017; MSDS SUMMARY OF CHANGES: SECTION 11 - TOXICOLOGICAL INFORMATION

Key / Legend
ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC – European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL) , KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Limits - ChemADVISOR’s Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX – Mexico; Ne - Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL – Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL- Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH-Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; Sc - Semi-quantitative; STEL - Short-term Exposure Limit; TCCA – Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW – Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN (Draft) - Vietnam (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada).

Other Information

Disclaimer:
The information set forth in this Safety Data Sheet does not purport to be all-inclusive and should be used only as a guide. While the information and recommendations set forth herein are believed to be accurate, the company makes no warranty regarding such information and recommendations and disclaims all liability from reliance thereon.