1. PRODUCT IDENTIFICATION

Product Name : Coal Tar
Other Names : Crude Coal Tar
: High Temperature Coal Tar
: Coke Ovens Tar
: High Temperature Coke Ovens Tar
: Tar, Coal

UN Number : For transport by road and rail no UN Number allocated.
: For transport by sea UN Number 3082, (Environmentally Hazardous Substance, Liquid, N.O.S., Marine Pollutant).

Dangerous Goods Class : For transport by road and rail no dangerous goods class allocated.
: For transport by sea IMDG Class 9 Packaging Group III

Hazchem Code : 2XE
: 3Z Sea Transport

CAS Number : 65996-89-6
Name : Tar, coal, high temperature
Classification : Carcinogenic, Cat 1; R 45

Risk Phrases : R22 Harmful if swallowed
: R36 Irritating to eyes
: R37 Irritating to respiratory system
: R38 Irritating to skin
: R40 Possible risk of irreversible effects
: R45 May cause cancer

“This product is hazardous according to criteria of Worksafe Australia”
Product Warning: This product contains compounds that are listed as carcinogens.

Use: Distilled to produce coal tar products including naphthalene, creosote oils, refined tars and pitches.

Physical Description/Properties

Appearance: Black to dark brown liquid with aromatic coal tar odour.
Boiling Point: 80°C to 400°C.
Vapour Pressure: < 5 mm Hg @ 20°C
Specific Gravity: 1.15 to 1.22 @ 15.5°C
Flashpoint: > 105°C (Closed cup)
Flammability Limits: Not available
Autoignition Temperature: Not available
Solubility in Water: Negligible (Insoluble)
Vapour Density (Air = 1): >1
Formula: A complex hydrocarbon mixture which includes polycyclic aromatic hydrocarbons (PAH’s)

Hazardous Ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Proportion (Weight %)</th>
<th>Hazard Data (Risk Phrases)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal Tar</td>
<td>65996-89-6</td>
<td>100</td>
<td>22,36,37,38,40,45(1)</td>
</tr>
<tr>
<td>Coal Tar Pitch Volatiles</td>
<td>65996-93-2</td>
<td></td>
<td>45(1) *[0.2 mg/m³ (TLV-TWA)]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>0.1 - 0.5</td>
<td>11,23,24,25,45(1),48</td>
</tr>
<tr>
<td>Indene</td>
<td>95-13-6</td>
<td>0.5 – 1.5</td>
<td></td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>9.5 – 14.5</td>
<td>50 mg/m³ (TLV-TWA)</td>
</tr>
<tr>
<td>2 Methylnaphthalene</td>
<td>119-65-3</td>
<td>0.5 – 2.5</td>
<td></td>
</tr>
<tr>
<td>1 Methyl naphthalene</td>
<td>90-12-3</td>
<td>0.2 – 1.0</td>
<td></td>
</tr>
<tr>
<td>Biphenyl</td>
<td>92-52-4</td>
<td>0.1 – 1.0</td>
<td>36,37,38</td>
</tr>
<tr>
<td>Acenaphthylene</td>
<td>208-96-8</td>
<td>0.5 – 2.5</td>
<td></td>
</tr>
<tr>
<td>Acenaphthene</td>
<td>83-32-9</td>
<td>0.5 – 3.5</td>
<td></td>
</tr>
<tr>
<td>Fluorene</td>
<td>86-73-7</td>
<td>1.0 – 5.0</td>
<td></td>
</tr>
</tbody>
</table>
2. HEALTH HAZARD INFORMATION

Health Effects

Acute (Short Term)

Swallowed. It is unlikely that coal tar will be swallowed, but if it is ingested product may cause gastrointestinal disturbances including irritation, nausea, vomiting and abdominal pain.

Eye contact with liquid product (or fumes from the product) may cause severe irritation and discomfort.

Skin contact with liquid product (or fumes from the product) may cause skin irritation and photosensitivity of contacted skin areas. Subsequent exposure to the UV alpha rays in sunlight may cause a sunburn to affected area. Skin contact with hot coal tar may cause chemical burns.

Inhalation of vapour may cause headaches, dizziness, irregular breathing and confusion.

Chronic (Long term or acute overexposure)

Swallowed. Tests on products produced from coal tar indicate that this product should be classified as R22 “Harmful if Swallowed”.

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
<th>TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyldibenzofuran</td>
<td>0.1 – 1.0</td>
<td></td>
</tr>
<tr>
<td>Phenanthrene</td>
<td>85-01-8</td>
<td>5.0 – 12.0</td>
</tr>
<tr>
<td>Anthracene</td>
<td>120-12-7</td>
<td>0.5 – 5.0</td>
</tr>
<tr>
<td>Carbazole</td>
<td>86-74-8</td>
<td>0.5 – 2.5</td>
</tr>
<tr>
<td>Methylphenanthrene</td>
<td>832-69-9</td>
<td>0.5 – 1.0</td>
</tr>
<tr>
<td>Fluoranthene</td>
<td>206-44-0</td>
<td>5.0 – 10.0</td>
</tr>
<tr>
<td>Pyrene</td>
<td>129-00-0</td>
<td>3.0 – 8.0</td>
</tr>
<tr>
<td>Benz (a) anthracene</td>
<td>56-55-3</td>
<td>0.1 – 1.0</td>
</tr>
<tr>
<td>Chrysene</td>
<td>218-01-9</td>
<td>0.5 – 3.0</td>
</tr>
<tr>
<td>Triphenylene</td>
<td>217-59-4</td>
<td>0.5 – 2.0</td>
</tr>
<tr>
<td>Benzo (a) fluoranthene</td>
<td>205-99-2</td>
<td>0.5 – 1.0</td>
</tr>
<tr>
<td>Benzo (J) fluoranthene</td>
<td>205-82-3</td>
<td>0.5 – 2.0</td>
</tr>
<tr>
<td>Benzo (k) fluoranthene</td>
<td>207-08-9</td>
<td>0.5 – 2.0</td>
</tr>
<tr>
<td>Benzo (e) pyrene</td>
<td>192-97-2</td>
<td>0.5 – 2.0</td>
</tr>
<tr>
<td>Benzo (a) pyrene</td>
<td>50-32-8</td>
<td>1.0 – 3.0</td>
</tr>
<tr>
<td>Indenopyrene</td>
<td>193-39-5</td>
<td>0.5 – 2.0</td>
</tr>
<tr>
<td>Benzo perylene</td>
<td>191-24-2</td>
<td>1.0 – 3.0</td>
</tr>
<tr>
<td>Anthanthrene</td>
<td></td>
<td>0.5 – 3.0</td>
</tr>
</tbody>
</table>

* For coal tar pitch volatiles exposure limit, threshold limit value (TLV) is 0.2 mg/m³ averaged over an 8 hour work shift (TWA) of benzene soluble fraction of total particulate including dust, fumes and mists.
Skin Contact. Similar products, when administered throughout the major portion of their lifetime, has caused cancer in laboratory animals.

Inhalation. Acute overexposure to vapour may result in respiratory tract irritation. Repeat and/or prolonged contact to high concentrations of vapour may result in respiratory difficulties, central nervous system effects characterised by headache, drowsiness, dizziness, weakness, incoordination, circulatory collapse, coma and possible death.

First Aid

Swallowed  
If the product is swallowed give milk or vegetable oil. Do not induce vomiting as this product can cause irritation to the throat.  
Call a doctor or ambulance.

Eyes  
If the product is splashed or sprayed into eyes, hold eye open and flush with water for at least 15 minutes. Use an eyewash bottle for irrigation if available.  
Call a doctor or ambulance.

Skin  
If the product is splashed onto the skin, or the fumes from the product contact the skin, remove contaminated clothing and wash all affected skin areas with warm soapy water and a well tufted wash cloth. After drying apply a broad spectrum UV blockout cream. Keep out of direct sunlight for the next 2 to 3 days to avoid sunburn to photosensitised skin areas.

Inhalation  
Remove patient to fresh air. If patient is not breathing apply artificial respiration or give oxygen. Keep patient warm.  
Call doctor or ambulance.

Advice to doctor  
This product is harmful if swallowed.

Coal Tar causes severe irritation to the eyes, respiratory tract, nose and throat.

Coal Tar product will cause photosensitisation of contacted skin areas which are then prone to sunburn when subsequently exposed to the UV alpha rays in sunlight.

Treatment is to remove as much of the product as possible by thorough washing with warm soapy water and a wash cloth then applying a broad spectrum blockout cream to protect against UV alpha ray exposure.

The photosensitivity will last for 36 to 72 hours after exposure.

Coal Tar product may be removed from sensitive skin areas using cotton wool pads soaked in castor oil.
3. **PRECAUTIONS FOR USE.**

Every effort should be made to avoid the user inhaling or ingesting the product or contacting the product on skin or in eyes.

- Use sound metal containers to prevent leakage or spillage of product.
- Avoid breathing vapour or fumes from product.
  - Stay upwind from source of fumes if possible.
  - Use local exhaust ventilation to collect or disperse fumes in confined areas.
  - Use personal organic vapour canister respiratory protection if oxygen content of air is adequate and vapour content of product in air is low, otherwise use air supplied respiratory protection.
- Avoid eye contact from fumes or liquid product.
  - use of close fitting chemical goggles for eye protection is preferred, otherwise use safety glasses fitted with side shields while working with the product.
- Avoid skin contact with liquid product (or with fumes from product)
  - Before working with this product apply a Barrier Cream to all exposed skin areas.
  - Wear protective clothing.
  - 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 PVC gloves. Use a PVC apron if there is risk of splash.
  - Avoid wearing contaminated clothing - remove contaminated clothing before product contacts skin. Launder work clothing before reuse.
  - Maintain good personal hygiene. After working with the product use warm soapy water and a well tufted wash cloth to thoroughly wash all areas of skin that have been contacted with product.
  - After washing, apply a broad spectrum UV blockout cream or lotion on exposed skin areas before going into sunlight. Keep out of strong sunlight for 2 or 3 days after being affected by the product.
- **Product Reactivity**
  - Coal Tar product in the cold state is stable. Heating may cause volatile flammable vapours to be given off.
  - Avoid contacting product with oxidising materials.
  - Coal Tar product is not highly flammable under normal conditions of use however it is a combustible product which will support combustion if ignited.
  - Avoid naked flames, welding sparks and other sources of ignition near product.
  - Use product only in a well ventilated area.
4. SAFE HANDLING INFORMATION

- **Storage and Transport**
  - Use sound metal tanks or containers to prevent leakage and spillage of product.
  - Avoid use of plastic containers as some plastics are softened by this product.

- **Spills and Disposal**
  - In the event of a leak, stop leak if it can be done safely.
  - Contain liquid spills with earth or sand dams and prevent liquid flowing into drains with earth or sand dams.
  - Remove any source of spark or flame to prevent ignition.
  - Stay upwind of spill.
  - Bail or pump any free liquid into metal containers.
  - Remaining thin layers of oil should be soaked up with sand, earth or sawdust.
  - Contaminated earth etc should be shoveled up and dumped at recognised locations in accordance with local regulations.

- **Fire/Explosion Hazards**
  - When coal tar product is heated strongly it gives off dense vapours which can cause headaches, dizziness, irregular breathing and confusion if inhaled.
  - When ignited, coal tar product burns emitting dense black clouds of smoke containing toxic combustion products.
  - Fire fighters should use breathing apparatus and goggles.
  - Fire fighters should stay upwind of the fire wherever possible.
  - Extinguishing Media - use foam, carbon dioxide, dry chemical or water fog to extinguish coal tar fires.
  - Use water sprays to cool exposed product containers and prevent them from overheating in the event of a fire.
CONTACT POINT

Clarification of the information above or further information on this product may be obtained by contacting the Koppers Carbon Materials & Chemicals Manager Operations on 02 4968 7340 or Superintendent Operations on 02 4968 7342 during office hours.

The contact outside of office hours is the Plant Shift Foreman on 02 4967 4777 (the 24 hour number).