

## GPS Safety Summary

**Product Name: Anthracene Oil**

### 1. General Statement

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Anthracene is also called paranaphthalene or green oil. Anthracene Oil is a combination of polycyclic aromatic hydrocarbons obtained between the temperature range of 280° - 380°C. It is a combustible brown liquid produced during the coal tar distillation. Anthracene oil does not dissolve in water, but can be dissolved in benzene, alcohol, ethers, carbon tetrachloride, carbon di sulphide. etc. Anthracene oil is composed primarily of Phenanthrene, Anthracene & Carbazole. ATO is used in production of CBO.

This substance is used in articles, by professional workers (widespread uses), in formulation or re-packing, at industrial sites and in manufacturing.

### 2. Chemical Identity

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<b>Name:</b>	Anthracene oil
<b>Brand names:</b>	Anthracene oil
<b>Chemical name (IUPAC):</b>	Anthracene , 9H- Carbazole; anthracene; phenanthrene
<b>CAS number(s):</b>	90640-80-5
<b>ES number:</b>	215-609-9
<b>Molecular formula:</b>	<b>C<sub>14</sub>H<sub>10</sub></b>

### 3. Use and applications

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❖ **Production of CBO:**

Anthracene oil is used to produce CBO as it is blended with soft pitch to achieve required parameter within specs.

❖ **Production of carbon black:**

Incomplete combustion of Anthracene oil produces hard & soft grade carbon black powder which is used in tyres, plastic, paint & inks.

### 4. Physical / Chemical properties

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Property	Value
Appearance	Pasty below melting temperature. Liquid above melting point
Color	Dark brown to black
Odor	Aromatic
Odor threshold	Not applicable
Melting point/range	40°C – 60°C
Boiling point/range	250°C – 400°C
Vapor pressure	< 200 Pa
Evaporation rate	not applicable
Density: (20°C)	1.044 - 1.150 Kg/m <sup>3</sup>

Bulk density:	NA
Powder (fluffy)	NA
Solubility (in Water)	Slightly soluble
pH value:	6 - 8
Partition coefficient (n-octanol/water)	NA
Viscosity at 80°C	8-14 mPas
Decomposition temperature	NA
<b>Flammable and Explosive Properties</b>	
Flashpoint	> 110 °C (Method ASTM D92).
Flammability Classification (as defined by OSHA 1910.1200)	not applicable
Spontaneous Ignition (Autoignition)	Material is not Self-Igniting.
> 450 °C	> 450 °C
BAM Furnace	
Godbert-Greenwald Furnace	>1 KJ
Minimum Ignition Energy	
Burn Rate (VDI 2263, EC 84/449)	>45 seconds (not classifiable as “Highly Flammable”, or “Easily Ignitable”)

## 5. Health Effects

Below health effects are subjected to if prolonged exposure to substance, negligence to suggested safety Precautions:

Effect Assessment	Result
Routes of Exposure	Inhalation, Eye, Skin, Ingestion.
Acute Inhalation	R22: Harmful if swallowed. (Obtain special instructions before use.)
Acute Ingestion	R45: May cause cancer, R46: May cause heritable genetic damage, R60: May impair fertility, R61: May cause harm to the unborn child, R68: Possible risk of irreversible effects. (Usage of PPE's is a better & easy medium to avoid these all the potential harmful health effects. Wear suitable protective clothing, gloves and eye/face protection)
Acute eye	R36/37/38: Irritant to eyes. (Use eye protection to avoid eye irritant risks)
Acute skin	R36/37/38: Irritant to skin. (Use suitable clothing to avoid skin irritant risks)

Sensitization	When working in strong sunlight, skin irritation may occur equivalent to sunburn (photo sensitivity).
Carcinogenicity	R45: May cause cancer (Wear suitable protective clothing, gloves and eye/face protection to work safely against carcinogenic risks)

## 6. Environmental Effects

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Effect Assessment	Result
warming impact	Distillation of tar rising the temp of surroundings.

Fate and behavior	Result
Biodegradation	Not relevant.
Bioaccumulation potential	Not relevant.
PBT/vPvB conclusion	Not relevant.

## 7. Exposure

<b>Exposure guidelines:</b>	91-20-3 naphthalene, pure OES: Short term value: 80 mg/m <sup>3</sup> , 15 ppm Long term value: 53 mg/m <sup>3</sup> , 10 ppm CHAN Polycyclic Aromatic Hydrocarbons (PAHs): TLV is 0.2 mg/m <sup>3</sup> (OSHA PEL / ACGIH)
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## 8. Risk Management recommendations

Human health measures	
<b>Organizational</b>	A basic standard of occupational hygiene is recommended. Ensure operatives are well informed of the hazards and trained to minimize exposures. Ensure regular inspection and maintenance of equipment's and machines. Handle and store according to the indications of the Safety Data Sheet.
<b>Protection</b>	<b>Eye/Face protection:</b> Tightly sealed safety glasses or chemical grade goggles.
	<b>Skin protection:</b> Wear full-body, industrial-type work clothing. Do not use contaminated clothing.
	<b>Hand protection:</b> Impermeable and chemical resistant gloves (heat resistant gloves if molten material). Selection of the glove material on consideration of the

	penetration times, rates of diffusion and the degradation.
<b>Respiratory protection:</b>	In case of brief exposure or low pollution use breathing filter apparatus (filter ABEK). In case of intensive or longer exposure use (self-contained) breathing equipment.
<b>Engineering controls</b>	Dust and fumes from processing: Use with adequate explosion-proof ventilation to meet the limits listed in Section 8.
<b>Environment protective measures</b>	
Product must not be released into water without pre-treatment. Neutralize wastewater before release.	

## 9. Regulatory Information / Classification and Labelling

9.1 Regulatory Information	
NFPA	Health:0 Flammability:1 Reactivity:0 0 = minimal, 1 = slight, 2 = moderate, 3 = serious, 4 = severe
HMIS	Health: 0 Flammability: 1 Physical Hazard: 0 0 = minimal, 1 = slight, 2 = moderate, 3 = serious, 4 = severe
OSHA	None of the chemicals in this product are considered highly hazardous by OSHA
EU	The product has been classified and marketed in accordance with EU Directives/Ordinance on Hazardous Materials (67/478/EEC and 1999/45/EC) and their implementations.
GHS	A hazardous substance or mixture as per GHS (Globally Harmonized Systems) Signal word-Warning Precautionary statements-May form explosible dust-air mixture, if dispersed. Keep away from all ignition sources including heat, sparks and flame. Prevent dust accumulation to prevent explosion hazard. Control dust exposures to below applicable occupational control limits.

### 9.2 Classification and labelling

Under GHS substances are classified according to their physical, health, and environmental hazards.

### Classification

T: Toxic (Carc. Cat. 2)

N: Dangerous for the environment

2.2.- Information concerning particular hazards for human and environment

R43: May cause sensitization by skin contact

R45: May cause cancer

R46: May cause heritable genetic damage

R60: May impair fertility

R61: May cause harm to the unborn child

R68: Possible risk of irreversible effects

R22: Harmful if swallowed




R36/37/38: Irritant to eyes, respiratory system and skin

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment  
May cause thermal burns at the storage temperature.

**Signal Word**

Warning

**Pictogram**

— GHS03: Flame over circle	
— GHS04: Gas cylinder	
— GHS06: Skull and crossbones	
— GHS09: Environment	