

GPS Safety Summary

Product Name : Coal Tar Pitch (Binder / Impregnation pitch)

1. General Statement

Coal tar pitch produced by fractional distillation of the coal tar at a temperature around 400°C & the residue remains which is solid at room temperature, called coal-tar pitch. Two different types of coal tar pitches are usually produced namely (i) binder grade, and (ii) impregnating grade. The main difference between these pitches resides in the quinoline insoluble content & softening point. The main difference between these pitches resides in the quinoline insoluble content. At room temperature, pitch appears as a uniform solid, which mainly consists of a mixture of PAHs with four or more aromatic rings. Coal Tar Pitch has been traditionally used for manufacturing Carbon Anodes and Electrodes for Aluminium and Graphite Industry. Coal tar pitch is non-explosive and non-oxidizing in nature.

2. Chemical Identity

Name: Binder pitch / Impregnation pitch.
Brand names: Coal Tar Pitch
Chemical name (IUPAC): Coal Tar pitch
CAS number(s): 65996-93-2
ESnumber: 215-609-9
Molecular formula: NA

3. Use and applications

❖ Binder pitch

In the aluminium industry, coal tar pitch is used as a binder in the manufacture of electrodes which primarily consist of petroleum or anthracite coal. As these electrodes are heated at high temperatures over a period of weeks, the ingredients in the electrodes are converted to C. For this reason, coal tar pitch is also often referred to as 'C pitch' or 'binder pitch'.

❖ Impregnation pitch

Coal tar pitch is used in the manufacture of graphite electrodes for steel arc furnaces. It is also used to impregnate and strengthen refractory brick (for lining industrial furnaces), and in surface coatings, such as pipe-coating enamels and black varnishes used as protective coatings for industrial steelwork and as antifouling paints for boats.

4. Physical / Chemical properties

Property	Value
Appearance	Solid or pencil form
Color	Black
Odor	Characteristic
Odor threshold	Not applicable

Melting point/range	80 – 180 °C
Boiling point/range	>360°C
Vapor pressure	>1
Evaporation rate	not applicable
Density: (20°C)	1.150 -1.400 Kg/m ³
Bulk density:	NA
Powder (fluffy)	NA
Solubility (in Water)	Insoluble
pH value: (ASTM 1512)	not applicable
Viscosity	not applicable
Decomposition temperature	>550 °C
Flammable and Explosive Properties	
Flashpoint	220 °C to 250 °C
Flammability Classification (as defined by OSHA 1910.1200)	not applicable
Spontaneous Ignition (Autoignition)	Material is not Self-Igniting.
Minimum Ignition Temperature (VDI 2263)	>550°C
Godbert-Greenwald Furnace	>1 KJ
Minimum Ignition Energy	
Burn Rate (VDI 2263, EC 84/449)	

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	May cause respiratory tract irritation. May cause effects similar to those described for ingestion. Dust or vapors Can cause irritation of the respiratory tract. Acute overexposures: Can cause central nervous system effects (nausea, dizziness and loss of coordination) and cardiovascular effects. Chronic overexposures Can cause lung cancer, kidney cancer and bladder cancer
Acute Ingestion	Ingestion can cause irritation, central nervous system effects (nausea, dizziness and loss of coordination) and cardiovascular effects.
Acute eye	Vapours may cause eye irritation. Causes redness and pain.
Target Organs	Eye, Blood, Kidney, Lungs, Central Nervous Systems, Liver, Heart.

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Carcinogenicity	The International Agency for Research on Cancer (IARC) of the World Health Organization (WHO) concluded that there was inadequate evidence to evaluate the carcinogenicity of Coal Tar pitch to humans.
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6. Environmental Effects

When coal tar pitch is seen in soil, it is usually present as distinct pieces or chunks of black, hard material, which is not likely to be contacted in the same way as is soil. occupational exposure to liquid, solid, heated, or vaporous coal tar pitch while distillation causes rising the temp of surroundings.

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

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

7. Exposure

Exposure guidelines	Coal Tar Pitch: TLV is 0.2 mg/m ³
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8. Risk Management recommendations

Human health measures		
Organizational	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.	
Protection	Eye/Face protection:	The Operators should wear chemical -proof goggles Pressurized helmets may be desirable.
	Skin protection:	Wear full -body, industrial - type work clothing. Do not use contaminated clothing. Under and outer clothing should be changed and cleaned regularly. Workers should be encouraged to report unusual skin conditions. Early diagnosis ensures that any treatment that may be necessary is effective. Regular medical examination should be carried out. Outside workers may benefit from barrier cream.
	Hand protection:	Chemical resistant gloves with CE -labelling of category

		III (EN 374). Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
	Respiratory protection:	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.
Engineering controls	Dust and fumes from processing: Use with adequate explosion-proof ventilation to meet the limits listed in Section 8.	
Environment protective measures		
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:2 Flammability:2 Reactivity:0 Special Hazard: E 0 = minimal, 1 = slight, 2 = moderate, 3 = serious, 4 = severe
EC	R45 - May Cause cancer R46 - May Cause heritable Genetic damage R60 - May impair fertility R61 - May cause harm to the unborn child R43 - May cause sensitisation by skin contact R52/53 - Harmful to aquatic organisms. May cause long term adverse effects In the aquatic environment

9.2 Classification and labelling

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

Classification	
Classification in accordance with 29 CFR 1910.1200	
Skin Corrosion / Irritation	Category 2
Eye Damage / Irritation	Category 2A
Sensitization -Respiratory	Category 1
Sensitization -Skin	Category 1
Germ Cell Mutagenicity	Category 1B
Carcinogenicity	Category 1A
Toxic to Reproduction	Category 1B
Hazardous to the Aquatic Environment-	
- Chronic Hazard	Category 4
Signal Word	
Warning	

Pictogram	
GHS03: Flame overcircle	
GHS04: Gas cylinder	
GHS06: Skull and crossbones	
GHS09: Environment	