According to OSHA Global Harmonization Standard



## PC Oil

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# SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

Trade name:

PC Oil

CAS

000098-86-2 (Acetophenone) 000599-64-4 (p-cumyl phenol)

000108-95-2 (Phenol)

000099-89-8 (p-isopropyl phenol)

PC Oil is associated with CAS#68333-89-1 which is defined as a non-volatile, high boiling residue from the distillation of products from cumene-phenol process. It consists predominantly of substituted phenyl groups cross linked by carbon-oxygen bonds and phenylaliphatic bonds.

## 1.2 Relevant identified uses of the substance or mixture and uses advised against

General use

Intermediate feedstock or fuel

Identified uses

- 1. Feed stock for production of carbon black
- 2. Alternative fuel

## 1.3 Details of the supplier of the safety data sheet

Company name:

**INEOS Phenol** 

Street Address:

7770 Rangeline Road Theodore, Alabama 36582

City/State/postal code: World Wide Web:

www.ineosphenol.com

Telephone:

251-443-3000

Fax:

251-443-3001

## 1.4 Emergency Telephone Numbers

24 Hour Emergency Number:

800-424-9300

24 Hour CHEMTREC Number:

800-424-9300 (USA)

703-527-3887 (International)

24 Hour Quantum Murray Number: 647-329-1054 (Canada)

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## **SECTION 2: Hazards identification**

#### 2.1 Classification of the substance or mixture

Classification according to Global Harmonization System:

Physical Hazards: None

**Health Hazards:** 

Acute Toxicity:

Oral - Category 3 (see section 11)

Dermal - Category 3 (see section 11)

Inhalation - Category 3 (see section 11)

Skin Corrosion/Irritation:

Corrosive 1B (causes severe skin burns and eye damage)

Mutagenicity:

Category 2 (Suspected of causing genetic damage)

Specific Target Organ Toxicity - Repeated Exposure: Category 2 (may cause damage to

organs through prolonged or repeated exposure)

**Environmental Hazards:** 

Acute Toxicity:

Category 2 - short term (fish)

See section 12 for additional information

Long Term Toxicity: Category Chronic 1 (fish)

See section 12 for additional information

#### 2.2 Label elements

## Labeling (CLP)







#### Signal word

### Danger

Hazard	sta	tem	nen	ts

Toxic if swallowed. H301 Toxic in contact with skin. H311

Causes severe skin burns and eye damage. H314

H331 Toxic if inhaled.

Suspected of causing genetic defects. H341

May cause damage to organs through prolonged or repeated exposure. H373

Hazardous to the aquatic environment, acute hazard H401

Precautions

Keep away from flames and hot surfaces. No smoking P210 P260 Do not breathe vapor.

Wear protective gloves/protective clothing/eye protection/ face protection. P280

IF ON SKIN: Wash with plenty of soap and water. P302+P352

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove

contact lenses, if present and easy to do. Continue rinsing.

IF exposed or if concerned: Call a POISON CENTER or doctor/physician. P309+P311

Avoid release to the environment. P273

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# SECTION 3: Composition/information on ingredients

## 3.1 Substance (Mixture)

Ingredient	Designation	Content	Classification
CAS 98-86-2	Acetophenone	10-30%	Acute toxic 4 (H302)
EINECS 202-708-7			Eye Irrit. 2 (H319)
CAS 108-95-2	Phenol, synthetic	1-5%	Acute Toxic 3 (H301, H311, H331)
EINECS 203-632-7			Skin Corrosive 1B (H314)
			Mutagen 2 (H341)
			STOT 2 (H373)
CAS 599-64-4	p-cumyl phenol	10-30%	Acute Toxic 4 (H302)
EINECS 209-968-0			Eye Damage 1 (H318)
			Aquatic Acute 1 (H400)
			Aquatic Chronic 1 (H410)
CAS 99-89-8	p-isopropyl phenol	1-5%	Skin Corrosive 1B (H314)
EINECS 202-798-8			
CAS	Dimerised	30-76%	Not applicable
EINECS	alphamethylstyrene and phenolic condensation products		

## **SECTION 4: First aid measures**

## 4.1 Description of first aid measures

General information:

First-aid provider: Pay attention to self-protection! Protect yourself from exposure.

Patient: Move into fresh air and keep victim calm. Remove contaminated clothing. If

patient is at risk of losing consciousness, position and transport on their side.

Provide for adequate fresh air. If breathing becomes irregular or difficult, give oxygen. If unconscious, evaluate artificial respiration immediately. Get immediate

medical attention.

In case of skin contact:

Remove all contaminated clothing. Flush with water followed by polyethylene glycol and/or

large quantities of water. Immediately get medical attention.

After eye contact:

After inhalation:

Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids

apart.

Subsequently seek the immediate medical attention.

After ingestion:

Rinse mouth immediately and drink plenty of water. Do not induce vomiting.

Immediately get medical attention.

## 4.2 Most important symptoms and effects, both acute and delayed

After contact with skin due to phenol content:

Rapid skin absorption is the main danger of phenol poisoning at the workplace with

paralysis of the central nervous system and heart arrhythmias (with lethal consequences in severe cases) as well as liver and kidney damage.

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## 4.3 Indication of any immediate medical attention and special treatment needed

Symptoms and dangers:

No specific antidote therapy for phenol poisoning is known. Therefore it is important to remove the phenol completely from the body surface and out of the body as quickly as possible, and in the case of inhalation prophylactic treatment to prevent pulmonary edema is important. Phenol causes strong caustic burns of the skin and mucous membranes due to its protein degenerating action. The skin initially discolors white, later red. After initial pain, local anesthesia appears. Absorption poisoning by large amounts of phenol is possible also through small affected skin regions and quickly leads to paralysis of the central nervous system as well as strong depression of the body temperature. Inhaling phenol vapors can lead to damage of the bronchial system and pulmonary edema. Systemic damage to kidneys, liver and heart as well as neuropsychiatric disturbances are produced.

#### Treatment:

Thoroughly clean the wetted skin areas with water and if possible, apply polyethylene glycol (e.g. polyethylene glycol 300) intermittently with water washes. In case of eye contact, rinse copiously with water. In case of burns, rinse continuously with water and seek medical attention. In case of inhalation, to prevent pulmonary edema, initiate inhalation cortisone therapy as early as possible (e.g. every 10 minutes 5 strokes of a cortisone containing aerosol dosing spray); administer codeine against dry coughing. In case of pulmonary edema, provide systemic administration of cortisone. If swallowed, gastric lavage after intubation activated charcoal, saline laxative.

# **SECTION 5: Firefighting measures**

#### 5.1 Extinguishing media

Suitable extinguishing media:

Extinguishing powder, alcohol resistant foam, carbon dioxide, water fog

Extinguishing media that must not be used for safety reasons:

Full water jet

### 5.2 Special hazards arising from the substance or mixture

Combustible liquid with vapors that is heavier than air. Vapors will spread at floor level which can travel to source of ignition and flashback.

Containers can build pressure if exposed to heat (fire). Cool with water spray. In case of fire, carbon monoxide and carbon dioxide will be liberated.

### 5.3 Advice for firefighters

Special protective equipment for firefighters:

Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information:

Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residuals and contaminated extinguishing water must be disposed of in accordance with existing regulations of the local authorities.

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## **SECTION 6: Accidental release measures**

# 6.1 Personal precautions, protective equipment and emergency procedures

Remove all sources of ignition. Keep upwind.

Do not breathe vapors. Do not breathe dust. Avoid contact with the substance. Wear suitable protective clothing. Provide adequate ventilation.

Leaks may be repaired only with full protection (tightly closing chemical protection clothing, respirator equipment independent of the ambient air).

## 6.2 Environmental precautions

Do not allow to penetrate into soil, bodies of water or drains.

Danger to drinking water when soaking into the soil or waters. In case of entry into waterways, soil or drains, inform the responsible authorities.

## 6.3 Methods and material for containment and cleaning up

Contain hot liquid after spilling and let it cool down (solidify). Take up mechanically, placing in appropriate containers for disposal.

# **SECTION 7: Handling and storage**

## 7.1 Precautions for safe handling

Advices on safe handling Execute works under fume hood. Do not inhale substance.

Avoid contact with skin, eyes, and clothing. The material is to be handled with extreme caution. Good ventilation required for handling.

Precautions against fire

and explosion:

Keep away from sources of ignition - No smoking.

## 7.2 Conditions for safe storage, including any incompatibilities

Requirements for

Storage and containers:

Keep container tightly closed.

Containers and pipelines require heating to keep PC Oil in a liquid state for pumping. Keep container in a well-ventilated place.

Container material: carbon steel or stainless steel.

Hints on joint storage

Do not store together with combustible or self-igniting materials or any highly flammable

solids. Keep away from food.

Further details:

Reserved for industrial and professional use.

### 7.3 Specific end use(s)

Reserved for industrial and professional use.

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# **SECTION 8: Exposure controls/personal protection**

## 8.1 Control parameters

#### PC Oil

Ingredient	Value	Limit	Reference
Acetophenone	10 ppm; 49 mg/m <sup>3</sup>	TWA	ACGIH
p-cumyl phenol	Not listed	Not listed	OSHA
, , , ,			NIOSH
			ACGIH
Phenol	5 ppm (skin); 19 mg/m <sup>3</sup>	TWA	OSHA
			NIOSH
			ACGIH
p-isopropyl phenol	Not listed	Not listed	OSHA
			NIOSH
			ACGIH
Dimerised	Not listed	Note listed	OSHA
alphamethylstyrene and			NIOSH
phenolic condensation products			ACGIH

## 8.2 Exposure controls

Execute works under fume hood. Do not inhale substance. The substance should only be handled in closed apparatus or systems.

### Occupational exposure controls

Respiratory protection:

Respiratory protection must be worn whenever the permissible exposure limits have

been exceeded.

NIOSH recommendations:
Up to 50 ppm: air purifying respirator with organic vapor cartridge in combination with N95,

R95, or P95 filter.

Up to 125 ppm: supplied air respirator or powered air purifying respirator with organic vapor

cartridge with high efficiency particulate filter.

Up to 250 ppm: supplied air respirator, powered air purifying respirator or any full face

respirator with organic vapor cartridge and appropriate filter.

Emergency or planned entry into unknown or IDLH conditions: supplied air respirator in

pressure positive mode.

Hand protection:

Protective gloves according to ASTM F 739 Permeation tests:

Glove material: Neoprene - best PVC - acceptable

Nitrile - not recommended

Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection:

Goggles or face protection shield.

Body protection:

Wear suitable protective clothing and chemical resistant safety shoes/boots.

General protection and hygiene measures:

Take off immediately all contaminated clothing. When using, do not eat, drink or

smoke.

Have eye wash bottle or eye rinse ready at work place. Keep away from food, drink and animal

feeding stuffs.

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Have safety shower ready at work place in the event of skin contact. Alternatives to the following personal protective measures can only be determined in agreement with responsible safety experts.

#### Environmental exposure controls

Operational conditions and risk management measures should focus on containment and prevention of exposure to air, land or water. Although phenol is biodegradable and bioaccumulation potential is low, EPA has set regulatory limits for protection of human health. OSHA has set regulatory limits to protect workers from inhalation and skin exposure.

# **SECTION 9: Physical and chemical properties**

# 9.1 Information on basic physical and chemical properties

Physical state:

Odor:

Dark brown to black Pungent aromatic

Odor threshold: no data available

Boiling temperature / boiling point

> 250°C (482°F)

Freezing temperature /Freezing point

<100°C (212°F)

Flash point- Closed cup

99°C -116°C (210°F - 240°F)

Ignition temperature

Flammable limits:

No data available LEL (Lower Explosion Limit): No data available

UEL (Upper Explosive Limit): No data available

Vapor pressure:

at 30°C: <1 mbar

Density:

Is heavier than water

pH value:

3.5 - 5.0

Specific gravity:

at 50°C: 1.07 g/cm<sup>3</sup>

#### 9.2 Other information

Not available

# **SECTION 10: Stability and reactivity**

### 10.1 Reactivity

No dangerous reactions are known.

### 10.2 Chemical stability

Stable under normal storage conditions.

## 10.3 Possibility of hazardous reactions

No dangerous reactions are known.

## 10.4 Conditions to avoid

No known conditions to avoid.

## 10.5 Incompatible materials

No known incompatibility with other materials.

## 10.6 Hazardous decomposition products

No known hazardous decomposition products.

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# **SECTION 11: Toxicological information**

## 11.1 Information on toxicological effects (based on phenol content)

Acute toxicity of Phenol:

LD50 Rat, oral:

340 mg/kg body weight LDLo human, oral: 140 mg/kg body weight

LD50 Rat, dermal: 660 mg/kg body weight

LC50 Rat, inhalative: 316 mg/m³/4h

After inhalation:

Toxic. Danger of serious damage to health by prolonged exposure.

The following symptoms may occur:

Mucous membrane irritation, cough, shortage of breath, damage of respiratory tract.

After swallowing:

Toxic. Danger of serious damage to health by prolonged exposure.

Specific target organ toxicity: Harmful effects are not known.

In case of skin contact:

Causes burns.

After eye contact:

Causes burns.

Carcinogenic, germ cell mutagen and reproduction effects

Muta. 2 - Suspected of causing genetic defects.

#### Symptoms

After contact with skin:

Strong skin absorption as main danger of phenol poisoning at the workplace with paralysis of the central nervous system (with lethal consequences in severe cases) as

well as liver and kidney damage

#### **General remarks**

Not known to cause sensitization.

Mutagenicity:

Bacterial mutagenicity: negative.

Chromosomal aberrations in-vitro: positive.

Micronucleus test: in-vitro: positive.

Gene-mutations mammalian cells in-vitro: positive. Sister chromatid exchange in-vitro: positive. Micronucleus test: in-vivo: weak positive.

Carcinogenicity:

Specific symptoms in animal studies: None carcinogenic effect.

Reproductive toxicity

Specific symptoms in animal studies: No reproductive hazards have been observed.

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# **SECTION 12: Ecological information**

Note: Ecological information is provided based on phenol content

12.1 Toxicity

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50

between 1 and 10 mg/L in most species tested). Category (Acute 2)

Aquatic toxicity:

Algae toxicity:

EC50 Pseudokirchnerella subcapitata, (freshwater, cell number): 61.1 mg/L/96h.

Bacterial toxicity:

IC50 Nitrosomonas sp: 21 mg/L/24h.

Daphnia toxicity:

EC50 Ceriodaphnia dubia: 3.1 mg/L/48h.

Fish toxicity:

LC50 Oncorhynchus mykiss: 8.9 mg/L/96h.

Long term fish toxicity:

60 d NOEC (cirrhina mrigala): 0.0077 mg/L

Water Hazard Class:

Hazardous substance regulated by EPA under the Clean Water Act

## 12,2. Persistence and degradability

Further details:

Material is readily biodegradable based on OECD test(s)

Air (Indirect photodegradation by reaction with OH radicals.): half-life time approx. 14 hours

Water: Not susceptible to hydrolysis.

Biodegradation:

Activated sludge: 62 %/100h, readily biodegradable (OECD 301C). Activated sludge: 85%/14d, rapidly biodegradable (OECD 301C).

### 12.3 Bioaccumulative potential

Low bioaccumulation potential.

Bioconcentration factor (BCF)

17.5

#### 12.4 Mobility in soil

Mobility potential is high.

Koc: 82.8 I/kg (measured log Pow value of 1.47)

The soil sorption coefficient indicates a low sorption of phenol onto soil organic matter.

Evaporation rate (Volatilization) at 20°C: H=0.022 Pa\* m³/mol.

The calculated Henry's Law constant indicates a low to moderate volatility from aqueous

solution.

#### 12.5 Other adverse effects

General information:

Do not allow to enter into ground-water, surface water or drains.

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# **SECTION 13: Disposal Considerations**

## **13.1 Waste Disposal Information**

#### **Product**

Recommendation:

Dispose in accordance with all Federal, State, and local regulations or requirements.

## **Contaminated packaging**

Recommendation:

Handle contaminated packages in the same way as the substance itself.

# **SECTION 14: Transportation Information**

# 14.1 UN Number and Proper Shipping Name

Liquid

UN2821

PHENOL, SOLUTION (PC Oil)

# 14.2 Department of Transportation – Phenol Solutions

Proper shipping name: PHENOL, SOLUTION (PC Oil)

UN 2821

Hazard class: 6.1 Packing group: PG III Label codes: 6.1

Special provision: IB3, T7, TP2

Packaging exemptions: 153; Non-bulk: 203; Bulk: 241

Quality Limitations: Passenger aircraft/rail: 60L; Cargo aircraft only: 220L

Vessel stowage location: A

### 14.4 IMDG

Proper shipping name: PHENOL, SOLUTION (PC Oil)

UN 2821

Hazard class: 6.1 Packing group: PG III

Quantity Limitations: 5L limited quantities; E1 excepted quantities

Packing Instructions and provisions: P001

IBC Instructions: IBC03

Portable tank and bulk containers: Instructions T4; provisions TP1

EMS number: F-A, S-A

Stowage and segregation: Category A

Marine pollutant: No

#### 14.5 IATA

Proper shipping name: PHENOL, SOLUTION (PC Oil)

UN 2821

Hazard class: 6.1 Packing group: PGIII Hazard label: Toxic

Cargo Packing Instructions: 663
Passenger Packing Instructions: 655

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# **SECTION 15: Regulatory information**

### 15.1 U.S. Federal Regulations

#### OSHA:

This document has been prepared in accordance with the Safety Data Sheet (SDS) requirements of the OSHA Hazard Communications Standard and Global and Global Harmonization System (GHS)

#### EPA:

TSCA:

This product contains the following substances listed by TSCA:

TSCA Inventory: Phenol - listed

p-isopropyl phenol - listed p-cumyl phenol - listed

TSCA Section 12(b): (Phenol) Subject to export notification

Clean Air Act: -- section 112(r):

This product contains the following substances listed as hazardous air pollutants:

Phenol - listed

Acetophenone - listed

Clean Water Act:

This product contains the following substances listed as hazardous substances

Phenol - listed on:

Section 311: Hazardous Substance; RQ 1000 lbs.

Section 304(a): Priority Pollutant

## SARA:

This product contains the following substances listed as extremely hazardous substances

Phenol - listed on:

Section 302: EHS; TPQ 500/10000 lbs; RQ 1000lbs

Section 311/312: Hazard classifications: Immediate (acute), Fire

Section 313: Subject to Toxic Release Inventory (TRI) reporting

Acetophenone - listed on:

Section 313 Subject to Toxic Release Inventory (TRI) reporting

### CERCLA:

This product contains the following substances subject to reporting under CERCLA:

Phenol - RQ 1000 lbs

Acetophenone - RQ 5000 lbs

## RCRA:

PC Oil:

Listed as hazardous waste; classified as toxic waste; subject to the small quantity exclusion. May be considered K022 listed waste depending on classification.

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#### **EPA Pesticides**

This product contains the following substances listed as inert or active ingredients of pesticide products:

#### Phenol:

listed as active ingredient
 listed as inert ingredient

## Other:

Carcinogen Status:

IARC Rating: Not listed OSHA Carcinogen: not listed NTP Rating: not listed

## 15.2 U.S. State Regulations (Phenol)

### New Jersey:

New Jersey Right-to-Know legislation: Phenol -Substance Number 1487, RTK Special Health Hazardous Substance

## Pennsylvania:

Pennsylvania Worker and Community Right-To-Know Act: Phenol is listed as hazardous substance and/or the Pennsylvania Environmental Substance list.

#### California:

Proposition 65: This material contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the requirements.

## Louisiana Right-To-Know

Phenol is list of Extremely Hazardous Substances; TQ 500 lbs.

#### Minnesota Right-To-Know

Phenol is listed on Chemicals of High Concern list.

## New York Substance Release and Bulk Storage

Phenol is list of hazardous substances.

## Rhode Island

Phenol is listed on hazardous substances list.

## 15.3 International Regulations

#### Canada

DSL: Not listed NDSL: Listed

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## **SECTION 16: Other information**

### **16.1 NFPA**



NFPA Hazard Rating Health: 3 (Serious) Fire: 1 (Minor) Reactivity: 0 (Minimum) Special Warnings: None

#### **16.2 HMIS**



HMIS Rating: Health: 3 (Serious) Flammability: 2 (Minor) Physical Hazard: 0 (Minimum)

Personal protection: X (consult your supervisor)

#### 16.3 Disclaimer

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