1.- IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1.- Identification of the substance
   Trade name: Carbolic Oil
   Molecular formula: N/A

1.2.- Use of the substance/preparation
   Solvent
   Chemical intermediate. Cresylic Acids extraction

1.3.- Company/undertaking identification
   Industrial Química del Nalón, S.A.
   Avda. Galicia 31
   E-33005 Oviedo
   Spain
   Tel: +34 98.598.26.00
   Fax: +34 98.598.26.26
   (See item 16.2 –Contact–)

1.4.- Emergency information
   Tel: +34 98.598.26.61
   Fax: +34 98.598.26.66
2.- **COMPOSITION / INFORMATION ON INGREDIENTS**

2.1.- Chemical Description

A complex combination of hydrocarbons obtained by distillation of coal tar. It consists of aromatic and other hydrocarbons, phenolic compounds and aromatic nitrogen compounds and distills at the approximate range of 150°C to 210°C (302°F to 410°F).

2.2.- IUPAC Name

N/A

2.3.- CAS Number

84650-03-3: Distillates (coal tar), light oils. Carbolic Oil

2.4.- Identification Number (s)

EINECS Number: 283-483-2
Index Number: 648-023-00-0

2.5.- Dangerous Components

<table>
<thead>
<tr>
<th>CAS</th>
<th>EINECS</th>
<th>Name</th>
<th>Hazard Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>91-20-3</td>
<td>202-049-5</td>
<td>Naphthalene, pure</td>
<td>Carc. Cat.3 (R40), Xn (R22), N (R50/53)</td>
</tr>
<tr>
<td>108-95-2</td>
<td>203-632-7</td>
<td>Phenol</td>
<td>T (R23/24/25) - Muta. Cat. 3 (R68), C (R34), Xn (R48/20/21/22)</td>
</tr>
<tr>
<td>1319-77-3</td>
<td>215-293-2</td>
<td>Mix-Cresol</td>
<td>T (R24/25), C (R34)</td>
</tr>
<tr>
<td>1300-71-6</td>
<td>215-089-3</td>
<td>Mix-Xylenol</td>
<td>T (R24/25), C (R34), N (R51/53)</td>
</tr>
<tr>
<td>95-13-6</td>
<td>202-393-6</td>
<td>Indene</td>
<td>F (R11), Xn (R20/21/22)</td>
</tr>
<tr>
<td>71-43-2</td>
<td>200-753-7</td>
<td>Benzene</td>
<td>F (R11), Carc. Cat.1 (R45), Muta. Cat.2 (R46), T (R48/23/24/25), Xn (R65), Xi (R36/38)</td>
</tr>
<tr>
<td>84650-03-3</td>
<td>283-483-2</td>
<td>Carbolic Oil</td>
<td>Carc. Cat.2 (R45)</td>
</tr>
</tbody>
</table>

3.- **HAZARDS IDENTIFICATION**

3.1.- Hazard designation:

<table>
<thead>
<tr>
<th>T</th>
<th>C</th>
<th>F</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxic</td>
<td>Corrosive</td>
<td>Highly flammable</td>
<td>Dangerous for the environment</td>
</tr>
<tr>
<td>Carc. Cat.2</td>
<td>Muta. Cat. 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.2.- Information concerning particular hazards for human and environment

R11: Highly flammable
R34: Causes burns.
R36/38: Irritating to eyes and skin
R45: May cause cancer
R46: May cause heritable genetic damage
R48/23/24/25: Toxic: Danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
R65: Harmful: May cause lung damage if swallowed
R68: Possible risk of irreversible effects.
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

*The classification is according to the latest editions of the EU-lists, and extended by company and literature data.*

4.- FIRST - AID MEASURES

**SEEK MEDICAL ATTENTION IMMEDIATELY IN ALL CASES**

**SHOW MATERIAL SAFETY DATA SHEET**

Remove immediately all contaminated clothing

Remove breathing apparatus only after soiled clothing has been completely removed

In case of irregular breathing or respiratory arrest provide artificial respiration

Remove subject from any exposure source

**After inhalation:** Supply fresh air or oxygen; call for doctor. In case of unconsciousness bring patient into stable side position for transport.

**After skin contact:** Wash with polyethylene glycol and ethanol (2:1). Then wash thoroughly with water and soap. Seek medical treatment.

**After eye contact:** Rinse opened eye for several minutes under running water. Then consult doctor.

**After ingestion:** DO NOT INDUCE VOMITING. Rinse mouth. If conscious, give four or five spoons of vegetable oil. Do not give anything by mouth to an unconscious person. Bring patient to hospital immediately showing this sheet.
5. **FIRE - FIGHTING MEASURES**

5.1.- Extinguishing media:

- **Suitable:** Dry chemicals, carbon dioxide, sand, powder, alcohol-resistant foam.
- **Not Suitable:** Steam, water fog or water jet (may spread fire).

5.2.- Special hazards caused by the material, its products of combustion or resulting gases

Incomplete combustion in a fire may result in a release of toxic carbon monoxide.

Gives off irritating, toxic and corrosive fumes (or gases) in a fire.

Explosive vapour/air mixtures may be formed.

5.3.- Protective equipment

Wear full body protective clothing, including self-contained breathing apparatus and face shield.

5.4.- Additional information

Keep drums, containers, etc., cool by spraying with water.

6. **ACCIDENTAL RELEASE MEASURES**

6.1.- Personal precautions:

Wear full body, industrial-type work clothing (closed at neck and wrists), including self-contained breathing apparatus and face shield. Wear chemical resistant gloves (resistant to corrosive chemicals), boots and goggles.

Keep unprotected people away

Avoid any contact with skin and eyes. Ventilate the area if the spill occurs indoors.

Do not eat, drink, or smoke during work. Wash hands before eating.

6.2.- Environmental precautions:

The product is soluble in water and is toxic to aquatic organisms.

Do NOT let this chemical enter the environment.

Take measures to avoid contamination of surface water and sewage system and collect spillage immediately. If there is a risk of spillage, closed collecting basins are recommended.

Inform respective authorities in case of seepage into water course/sewage system.

6.3.- Cleaning up methods:

Adsorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust), collect mechanically and place in containers for safe disposal. Containers should be sealed and labelled.

Dispose of contaminated material and waste according to item 13.1.

Ensure adequate ventilation.
7.- **HANDLING AND STORAGE**

7.1.- Handling:

**DO NOT PRODUCE ANY FUME/VAPOUR AND AVOID ANY CONTACT.**

Open and handle containers with care. When loading/unloading the product, use pump or nitrogen injection.

Avoid direct contact with skin. Use gloves and suitable clothing. Use protective glasses or face shield if there is risk of splashing into the eyes or any vapours/fumes are present. Change contaminated clothes immediately.

Keep self-contained breathing equipment ready.

Keep ignition sources away – Do not smoke.

7.2.- Storage:

Store at room temperature in a dry container.

Suitable material for containers and pipes: High-grade steel.

Provision to contain effluent from fire extinguishing. Separated from strong oxidants, food and feedstuffs. Dry. Well closed. Keep in a well-ventilated area.

Storage class: Corrosive / Flammable / Toxic / Dangerous for the environment. Store according to local and/or national regulations.

---

8.- **EXPOSURE CONTROLS / PERSONAL PROTECTION**

**TRAIN WORKERS AND USERS IN SAFETY MEASURES**

8.1.- Additional information about design of technical facilities

General or local exhaust ventilation may be necessary (see section 7)

8.2.- Components with limit values that require monitoring at the workplace

<table>
<thead>
<tr>
<th>CAS Nº</th>
<th>Designation</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>91-20-3</td>
<td>Naphthalene, pure</td>
<td>80</td>
<td>mg/m³ (short term)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>53</td>
<td>mg/m³ (long term)</td>
</tr>
<tr>
<td>108-95-2</td>
<td>Phenol</td>
<td>19</td>
<td>mg/m³ (short term)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>mg/m³ (long term)</td>
</tr>
</tbody>
</table>

TLV: 5 ppm as TWA; (skin); A4; BEI issued; (ACGIH 2004). MAK: H; Carcinogen category: 3B; (DFG 2004).

<table>
<thead>
<tr>
<th>CAS Nº</th>
<th>Designation</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1319-77-3</td>
<td>Methylphenol</td>
<td>22</td>
<td>mg/m³ (short term)</td>
</tr>
</tbody>
</table>

TLV: 5 ppm as TWA; (skin); (ACGIH 2004). MAK: skin absorption (H); Carcinogen category: 3A; (DFG 2005)

<table>
<thead>
<tr>
<th>CAS Nº</th>
<th>Designation</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>71-43-2</td>
<td>Bencene</td>
<td>1</td>
<td>ppm (long term)</td>
</tr>
<tr>
<td>95-13-6</td>
<td>Indene</td>
<td>10</td>
<td>ppm (long term)</td>
</tr>
</tbody>
</table>
8.3.- General protective and hygienic measures

Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and toilet visits using an alkaline soap (if do not have alkaline soap, using a caustic soda solution with a concentration equal to or below 0.5 N could be useful). To remove substance use polyethylene glycol 300 or vegetable oil.
Avoid any contact.
Do not drink, eat, smoke or sniff while working.
Shower or take a bath at the end of work. Steam baths are recommended.
Take off immediately all contaminated clothing.
Store protective clothing separately.
Consider face shield, or eye protection in combination with breathing protection in certain operations

8.4.- 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.

8.5.- Protection of hands

Only use chemical-protective gloves with CE-labelling of category III (EN 374).

8.6.- Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

8.7.- Penetration time of glove material

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

Discard gloves as soon as any signs of degradation are noticed.

8.8.- Eye protection

DO NOT USE CONTACT LENSES. Operators should wear chemical-proof goggles. The additional use of a face visor may be desirable.

8.9.- Body protection

Wear full-body, industrial-type work clothing.
Do not use contaminated clothing.
9.- **PHYSICAL AND CHEMICAL PROPERTIES**

9.1.- General information

- **Form:** Liquid
- **Colour:** Yellow to dark brown
- **Odour:** Aromatic

9.2.- Change in conditions

- **Boiling range:** 150-210 °C.
- **Melting range:** Liquid at ambient temperature

9.3.- **Flash point:** >21 °C

9.4.- **Auto-ignition temperature:** > 500 °C.

9.5.- **Self-flammability:** Product is not self igniting

9.6.- **Explosion limits (vol% in air):** 1.3 – 9.5 (phenol)

9.7.- **Vapour pressure at 20 °C:** < 101 mbar

9.8.- **Density at 20 °C:** 900 - 1030 Kg/m\(^3\)

9.9.- **Solubility in / miscibility with water at 20 °C:** Moderate

---

10.- **STABILITY AND REACTIVITY**

10.1.- **Conditions to avoid**

Sources of ignition.

Vapours may form explosive mixtures with air

10.2.- **Materials to avoid**

React with oxidants causing fire and explosion hazard.

10.3.- **Hazardous decomposition products**

No decomposition if used according to specifications. The substances arising from thermal decomposition cannot be accurately predicted. Any fumes/vapours are potentially irritant/toxic/corrosive and suitable protective equipment should be worn.
11. - **TOXICOLOGICAL INFORMATION**

11.1.- **Acute toxicity. LD/LC50 values relevant for classification:**

91-20-3 Naphthalene, pure

<table>
<thead>
<tr>
<th>Route</th>
<th>LD₅₀/LC₅₀</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>&gt;2000 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
<td>&gt;2500 mg/kg (rat)</td>
</tr>
<tr>
<td>Inhalative</td>
<td>&gt;100 mg/l (rat)</td>
</tr>
</tbody>
</table>

108-95-2 Phenol

<table>
<thead>
<tr>
<th>Route</th>
<th>LD₅₀</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>414 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
<td>670 mg/kg (rat)</td>
</tr>
<tr>
<td>Inhalative</td>
<td>316 mg/m³ (rat)</td>
</tr>
</tbody>
</table>

1319-77-3 Cresol (mixture)

<table>
<thead>
<tr>
<th>Route</th>
<th>LD₅₀</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>121 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
<td>620 mg/kg (rat)</td>
</tr>
</tbody>
</table>

71-43-2 Benzene

<table>
<thead>
<tr>
<th>Route</th>
<th>LD₅₀</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>4894 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
<td>48 mg/kg (mouse)</td>
</tr>
<tr>
<td>Inhalative</td>
<td>9980 mg/l (mouse)</td>
</tr>
</tbody>
</table>

71-43-2 Benzene

<table>
<thead>
<tr>
<th>Test</th>
<th>EC₅₀</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algae</td>
<td>530 mg/l</td>
</tr>
<tr>
<td>LC₀</td>
<td>200-430 mg/l (daphnia)</td>
</tr>
<tr>
<td></td>
<td>33-62 mg/l (fish)</td>
</tr>
</tbody>
</table>

11.2.- **Acute hazards / symptoms**

**On the skin:** EASILY ABSORBED. Caustic effect on skin and mucous membranes.

**On the eye:** Strong caustic effect.

**Sensitization:** No sensitizing effect known.

**Ingestion:** Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of oesophagus and stomach.


11.3.- **Additional toxicological information**

Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

91-20-3 Naphthalene. Mutagenicity negative (bacteria)
The use of alcoholic beverages enhances the harmful effect.
Depending on the degree of exposure, periodic medical examination is suggested.
The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential.
Immediate administration of an appropriate inhalation therapy by a doctor or a person authorized by him/her, should be considered.

Effects of short-term exposure
The substance and the vapour are corrosive to the eyes, the skin and the respiratory tract.
Inhalation of vapour may cause lung oedema.
The substance may cause effects on the central nervous system, heart and kidneys, resulting in convulsions, coma, cardiac disorders, respiratory failure, collapse, vomiting. THE EFFECTS MAY BE DELAYED. Medical observation is indicated.
Exposure may result in unconsciousness. THE EFFECTS MAY BE DELAYED.

Effects of long-term or repeated exposure
Repeated or prolonged contact with skin may cause dermatitis.
The substance may produce cancer and mutagenic diseases on the skin, bladder, liver, respiratory tract and kidneys.

12. ECOLOGICAL INFORMATION
12.1. General notes
DANGEROUS FOR THE ENVIRONMENT
Do not allow any emission or the product to reach ground water, water course or sewage system; even in small quantities.
Danger to drinking water if even small quantities leak into the ground.
The odour threshold has been reported to range from 0.021 to 20 mg/m$^3$ in air, while the threshold for odour in water has been reported to be 7.9 mg/litre. A taste threshold value of 0.3 mg/litre water has been suggested.
Toxic for aquatic organisms.
The product biodegrades very slowly.
13.- **DISPOSAL CONSIDERATIONS**

13.1.- **Product**

Must be in accordance with local authority and national legislation. Dispose of as Toxic and Hazardous Waste (Directive 78 / 319 / EC).

Must not be disposed together with household garbage or any oxidizing agent.

Keep in closed containers

Do not allow product to reach sewage system.

13.2.- **Uncleaned packaging**

Same as for product

14.- **TRANSPORT INFORMATION**

14.1.- **Land transport ADR/RID (cross-border)**

ADR/RID class: 3 Flammable liquids

Hazard index number: 336

Packaging group: II

UN no.: 1992

Hazard label: 3 + 6.1

Description of goods: 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (BENCENE, PHENOL)

14.2.- **Maritime transport**

IMDG class: 3

UN number: 1992

Label: 3 + 6.1

Packaging group: II

EMS Number: F-E, S-D

Proper shipping name: FLAMMABLE LIQUID, TOXIC, N.O.S. (BENCENE, PHENOL)

14.3.- **Air transport ICAO-TI and IATA-DGR**

ICAO/IATA class: 3

UN/ID number: 1992

Label: 3 + 6.1

Packaging group: II

Correct technical name: FLAMMABLE LIQUID, TOXIC, N.O.S. (BENCENE, PHENOL)
15. - REGULATORY INFORMATION

The product has been classified and labelled in accordance with EU Directives/Ordinance on Hazardous Materials (67/478/EEC and 1999/45/EC) and their implementations

15.1.- Code letter and hazard designation of product

T: Toxic (Carc. Cat. 2, Muta. Cat. 3)
F: Highly flammable
C: Corrosive
N: Dangerous for the environment

15.2.- Hazard determining components of labelling

See item 2.5

15.3.- Risk phrases

R11: Highly flammable
R34: Causes burns.
R36/38: Irritating to eyes and skin
R45: May cause cancer
R46: May cause heritable genetic damage
R48/23/24/25: Toxic: Danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
R65: Harmful: May cause lung damage if swallowed
R68: Possible risk of irreversible effects.
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

15.4.- Safety phrases

S16: Keep away from sources of ignition – No smoking.
S24/25: Avoid contact with skin and eyes.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S27/28: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water.
S33: Take precautionary measures against static discharges.
S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.
S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S53: Avoid exposure. Obtain special instructions before use.
S60: This material and its container must be disposed of as hazardous waste
S61: Avoid release to the environment. Refer to special instructions/safety data sheet.
15.5.- Information about limitations of use

For professional users only.

Employment restrictions concerning young persons must be observed.

Employment restrictions concerning pregnant and lactating women must be observed.

15.6.- Water hazard class

Hazard class 2 (assessment by list): hazardous for water

16. - OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

16.1.- Department Issuing MSDS: R&D Department

16.2.- Contact: Juan José Fernández