1. Identification of the substance/mixture and of the company

Product identifier
Identification on the label / trade name:
Light oil (coal), coke-oven
Additional identification:
Crude benzol
REACH registration number:
01-2119519215-46-0039
Relevant identified uses of the substance and uses advised against
Relevant identified uses:
   Production of aromatic chemicals. Use as carbon black feedstock, complete conversion into carbon black.
Uses advised against:
   use restricted to close systems
Details of the supplier of the safety data sheet
Manufacturer/Supplier: ISD Kokszoló Kft.
2400 Dunaujváros Vasmű tér 1-3. Hungary
web: www.dunafer.hu
e-mail address: csjuhasz@dbk.dunafer.hu
phone: 00.36.2558.1060
fax: 00.36.25.410.614i
Information: see Section 16 (Contact)

Emergency telephone number: see: Manufacturer/Supplier

2 Hazards identification

Classification of the substance
According to Dangerous Substances
F: R11; Xn: R20/21-63-65; Xi: R36/38; Carc. Cat. 1: R45; Muta. Cat. 2: R46 ; T: 48/23/24/25;
N: R51/53; R67
According to CLP regulations (EC)1272/2008:
Flam. Liq. 2 H225; Skin Irrit. 2 H315; Eye Irrit. 2 H319; Asp.Tox.1 H304; Repr.2 H361;
Muta.1B H340; Carc.1A H350; STOT SE 3 H336; STOT RE.1 H372; Aquatic Chronic 2 H411
Label elements according to CLP regulations (EC)1272/2008

Hazard pictograms:

<table>
<thead>
<tr>
<th>Signal word:</th>
<th>Danger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard statements:</td>
<td></td>
</tr>
<tr>
<td>H225</td>
<td>Highly flammable liquid and vapour</td>
</tr>
<tr>
<td>H304</td>
<td>May be fatal if swallowed and enters airways</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H336</td>
<td>May cause drowsiness or dizziness</td>
</tr>
<tr>
<td>H340</td>
<td>May cause genetic defects</td>
</tr>
<tr>
<td>H350</td>
<td>May cause cancer</td>
</tr>
<tr>
<td>H361</td>
<td>Suspected of damaging fertility or the unborn child</td>
</tr>
<tr>
<td>H372</td>
<td>Causes damage to organs through prolonged or repeated exposure</td>
</tr>
<tr>
<td>H411</td>
<td>Toxic to aquatic life with long lasting effects</td>
</tr>
</tbody>
</table>

Precautionary statements:

- P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- P243 Take precautionary measures against static discharge.
- P260 Do not breathe mist/vapours.
- P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
- P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P405 Store locked up.
- P501 Dispose of contents/container to recycling in accordance with national/international regulations.
Information pertaining to special dangers for human and environment:
Benzene, toluene, xylene and naphthalene: resorption through skin is possible.

### 3 Composition/information on ingredients

Chemical characterisation:
Light oil (coal), coke-oven
EG-No. 266-012-5
CAS No. 65996-78-3

Hazard ingredients:

<table>
<thead>
<tr>
<th>EG-Nr.</th>
<th>CAS-Nr.</th>
<th>Bezeichnung</th>
<th>Anteil [%]</th>
<th>Richtl. 67/548/EWG</th>
<th>Einstufungx</th>
</tr>
</thead>
<tbody>
<tr>
<td>200-753-7</td>
<td>71-43-2</td>
<td>benzene</td>
<td>60 – 70</td>
<td>F, Xi, Xn, T; R11-36/38-45-46-48/23/24/25-65</td>
<td>Flam. Liq. 2, H225, Carc.1A H350, Muta. 1B H340, STOT RE. 1 H372, Asp. Tox. 1 H304, Eye Irrit. 2 H319, Skin Irrit. 2 H315</td>
</tr>
<tr>
<td>215-535-7</td>
<td>1330-20-7</td>
<td>xylene (o,m,p)</td>
<td>1 – 10</td>
<td>Xn; R10-20/21-38</td>
<td>Flam. Liq. 3 H226, Acute Tox. 4 H332, Acute Tox. 4 H312, Skin Irrit. 2 H315</td>
</tr>
<tr>
<td>202-049-5</td>
<td>91-20-3</td>
<td>naphthalene</td>
<td>1 – 5</td>
<td>Xn, N; R22-40-50/53</td>
<td>Carc. 2 H351, Acute Tox. 4 H302, Aquatic Acute 1 H400, Aquatic Chronic 1 H410</td>
</tr>
</tbody>
</table>

### 4 First aid measures

General information:
Call a physician immediately. Remove contaminated, saturated clothing immediately. Remove breathing apparatus only after soiled clothing has been completely removed.

In case of inhalation:
Remove casualty to fresh air and keep warm and at rest. In case of irregular breathing or respiratory arrest use artificial respiration equipment.

In case of skin contact:
Subsequently wash off with water and soap and rinse thoroughly.

In case of eye contact:
After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

In case of ingestion:
Rinse mouth immediately and drink plenty of water, to which activated charcoal may be added. Do NOT induce vomiting.

Most important symptoms and effects, both acute and delayed:
The following symptoms may occur: contact with skin may cause redness or blistering, inhalation may cause drowsiness and other narcotic effects. Irritation to the throat may also occur upon ingestion.

Information to physician:
Long term monitoring of haematological parameters can be necessary.

5 Fire-fighting measures

Extinguishing media:
Water spray jet, CO2 or extinguishing powder.
Extinguishing media which must not be used for safety reasons:
Full water jet.
Special hazards arising from the substance or mixture:
May produce toxic fumes of carbon monoxide if burning. Burning produces heavy smoke.
Special protective equipment for fire-fighters:
Wear a self-contained breathing apparatus and chemical protective clothing.
Additional information:
Keep containers cool with water spray. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

6 Accidental release measures

Personal precautions:
Remove all sources of ignition. Wear personal protection equipment (refer to 8). Provide adequate ventilation. Wear breathing apparatus if exposed to vapours. Keep unprotected people away and stay on the upwind side.
Environmental precautions:
Do not allow to enter into soil, surface water or drains.
Methods and material for containment and cleaning up:
Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Collect in closed and suitable containers for disposal. Ventilate affected area.

7 Handling and Storage

Precaution for safe handling:
This substance is handled under Strictly Controlled Conditions in accordance with REACH regulation Article 18(4) for transported isolated intermediates. Site documentation to support safe handling arrangements including the selection of engineering, administrative and personal protective equipment controls in accordance with risk-based management systems should be available at each site.

Technical measures:
Use extractor hood (laboratory).
Precautions against fire and explosion:
Vapours can form an explosive mixture with air. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges.

General health and safety measures:
Wash hands before breaks and on finishing work. Remove contaminated, saturated clothing. Do not eat, drink, smoke or take snuff while working.

Conditions for safe storage:
Suitable material for containers and pipes: stainless steel. Keep container tightly closed. Ensure adequate ventilation of the storage area. Store in a place accessible by authorized persons only.

Specific end use:
No specific end uses, as this substance is an intermediate.

### 8 Exposure controls / Personal protection

**Control parameters**

**Occupational exposure limits (OELs):** Source (German legislation): TRGS 900 "Arbeitsplatzgrenzwerte"

<table>
<thead>
<tr>
<th>CAS-Nr.</th>
<th>Substance</th>
<th>ml/m³ (ppm)</th>
<th>mg/m³</th>
<th>Peak limitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>108-88-3</td>
<td>toluene</td>
<td>50</td>
<td>190</td>
<td>4(II)</td>
</tr>
<tr>
<td>1330-20-7</td>
<td>xylene</td>
<td>100</td>
<td>440</td>
<td>2(II)</td>
</tr>
</tbody>
</table>

**Occupational exposure limits (OELs):** Source: Directive 2004/37/EC

<table>
<thead>
<tr>
<th>CAS-Nr.</th>
<th>Substance</th>
<th>long term (8h)</th>
<th>short term (15 min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>71-43-2</td>
<td>benzene</td>
<td>1</td>
<td>3.25</td>
</tr>
</tbody>
</table>

**Indicative limit value for occupational exposure:** Source: Directive 91/322/EEC

<table>
<thead>
<tr>
<th>CAS-Nr.</th>
<th>Substance</th>
<th>long term (8h)</th>
<th>short term (15 min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>91-20-3</td>
<td>naphthalene</td>
<td>10</td>
<td>50</td>
</tr>
</tbody>
</table>

**DNEL/DMEL and PNEC values:**
No DNEL/DMEL and PNEC have been derived for the registration dossier of this substance because it is handled under Strictly Controlled Conditions in accordance with REACH regulation Article 18(4) for transported isolated intermediates.

**Exposure controls**

**Occupational exposure controls:**
Refer to no. 7.

**Respiratory protection:**
In case of appearance of vapour wear full mask with filter Typ A according to EN136.

**Hand protection:**
Draw up and observe skin protection programme.
Check the resistance to chemicals of the protective gloves together with the supplier of the gloves. Use only gloves conform to 89/686/EEC.

**Wear duration at permanent contact:**
gloves made of fluoro rubber

**Thickness of the glove material:**
0.4 mm

**Breakthrough time (maximal wear duration):**
> 480 min

**At occasional contact (splashes):**
gloves made of fluoro rubber.
Thickness of the glove material:
0.4 mm

Breakthrough time (maximal wear duration):
> 480 min

Eye protection:
Safety glasses.

Suitable protective clothing:
Flame-retardant protective clothing.

Environmental exposure controls:
See section 7. No additional measures necessary.

9 Physical and chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Colour: Light brown

Odour: organic

pH Value: n.a.

Melting-point: approx. -18°C (ca. 101 kPa)

Boiling point / boiling range: approx. 82 °C - approx. 114 °C (1013 hPa)

Density: 0.85 - 1.05 g/cm³ (20°C)

Water solubility: approx. 0.1 - 100 mg/l (20°C)

Flash point: < 2°C (EN ISO 2719) (1013 hPa)

Auto Flammability: approx. 485 °C (1013 hPa)

Lower explosive limits: 1.2 Vol% (benzene)

Upper explosive limits: 8.0 Vol% (benzene)

Vapour pressure: approx. 5.3 kPa (20°C)

Other information: n.a.

10 Stability and Reactivity

Incompatible materials:
Will react with oxidising agents often explosively.

Chemical stability:
Under normal conditions the product is stable.

Hazardous decomposition products:
No dangerous decomposition products known.

11 Toxicological information

Acute effects

Acute oral toxicity:
oral: Rat, OECD 423
LD 0 2000 mg/kg
LD 50 > 2000 mg/kg (RD)
Irritant-/corrosive effects BTX:
  Dermal: rabbit
  Irritation of skin. (RD)
Eye: rabbit
  Irritation of eye. (RD)
Sensitisation BTX
  Dermal: negative in tests (RD)
Repeated dose toxicity (subacute, subchronic, chronic): n.d.a.
CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):
  Studies on pure benzene show a mutagenic potential. Therefore the substance is classified as mutagenic too.
Carcinogen:
  Pure benzene is classified as carcinogen for human. Therefore the substance is classified as carcinogenic too.
Phototoxicity:
  n.d.a

12 Ecological information

Ecotoxicity: BTX
  Fish short term, OECD 203, Oncorhynchus mykiss
    LC 50 (96 h) 2 – 10 mg/l (RD)
Destillates (coal tar), benzole fraction, short term:
  Daphna toxicity, OECD 202, Daphnia magna
    EL50 (48h) 3.8 mg/l (RD)
Algea toxicity, OECD 201, Desmodesmus subspicatus
  EL50 (72h) 23 mg/l (RD)
  NOELR (72h) < 10 mg/l (RD)
Persistence and degradability:
  Light oil is comprised to large extent of BTX and alkylsubstituted monoaromatic compounds (> 50 %), which are easily biodegradable and proved to be readily biodegradable in the majority of biodegradation studies. Due to the presence of two-ring aromatic substances such as naphthalene, which in general are inherently biodegradable, light oil as a whole has to be considered as inherently biodegradable.
Bioaccumulative potential:
  low based on components
Mobility in soil:
  (moderate to be assumed, based on components)
Results of PBT and vPvB assessment:
  no PBT/vPvB based on components
Other adverse effects:
None.

13 Disposal considerations

Waste treatment methods

Material recycling possible.

List of proposed waste codes/waste designations in accordance with EWC:

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.: EWC-Code: 07 01 04 Other organic solvents, washing liquids and mother liquors.

Appropriate disposal / package:

n.a.

14 Transport information

Land transport (ADR/RID/CDG Road/CDG Rail)

UN-Number: 3295
UN proper shipping name: 3295 HYDROCARBONS, LIQUID, N.O.S., special provision 640D
Transport hazard class: 3 Flammable liquids
Classification code – Hazard Index Number 33
Packing group: II
Environmental hazards: Special marking symbol (fish and tree)

Special precautions for user:

Special provisions:

Excepted quantities (EQ): E2
Limited quantities (LQ): LQ4
Tunnel restriction code: D/E


15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Sevesio II (96/82/EC):

Toxic No 2  7b

amount 1:

50,000 kg

amount 2:

200,000 kg

Restrictions of occupation:

Observe restrictions to employment for juvenils according to the 'juvenil work protection guideline' (94/33/EC). Observe employment restrictions for pregnant and nursing mothers according to the 'mother protection guideline' (92/85/EEC).

National law:

Observe in addition the national legislative regulations!

Chemical Safety Assessment:
For this substance (transported isolated intermediate) a chemical safety assessment is not required.

### 16 Other information

Documentation of changes:

* Data changed compared with the previous version
  Revision of Material safety data sheet from 25.05.2007

Relevant R-phrases (Number, full text)

According to (67/548/EEC):
- R10 Flammable.
- R11 Highly flammable.
- R20/21 Harmful by inhalation and in contact with skin.
- R22 Harmful if swallowed.
- R36/38 Irritating to eyes and skin.
- R40 Limited evidence of a carcinogenic effect.
- R45 May cause cancer.
- R46 May cause heritable genetic damage.
- R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
- R48/23/24/25 Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
- R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R63 Possible risk of harm to the unborn child.
- R65 Harmful: may cause lung damage if swallowed.
- R67 Vapours may cause drowsiness and dizziness.

Relevant H- and EUH-phrases (Number, full text) according to CLP Regulations (EC 1272/2008):
- H225 Highly flammable liquid and vapour.
- H226 Flammable liquid and vapour.
- H302 Harmful if swallowed.
- H304 May be fatal if swallowed and enters airways.
- H312 Harmful in contact with skin.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation
- H332 Harmful if inhaled.
- H336 May cause drowsiness or dizziness.
- H340 May cause genetic defects.
- H350 May cause cancer.
- H351 Suspected of causing cancer.
- H361d Suspected of damaging the unborn child.
SAFETY DATA SHEET
Light oil (coal), coke-oven

according to 1907/2006/EC, Article 31

H372 Causes damage to organs through prolonged or repeated exposure.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Literature, References:
RD: Registration Dossier „Light oil (coal), coke oven”

Further information:
abbreviations:
n.d.a. = no data available
n.a. = not applicable

Department issuing data specification sheet:
Department of Technology

Contact:
e-mail address: technologiafo@dbk.dunafer.hu
phone: 00.36.2558.1076
fax: 00.36.25.410.614

Statement
The information is based on present level of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights.
The product is to be used exclusively for the applications named in the technical leaflet or in the processing instructions. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

Most common technical function of substance (what it does):
Intermediates

Remarks
This substance is handled under Strictly Controlled Conditions in accordance with REACH regulation Article 18(4) for transported isolated intermediates. Site documentation to support safe handling arrangements including the selection of engineering, administrative and personal protective equipment controls in accordance with risk-based management systems is available at each Manufacturing site.
Written confirmation of application of Strictly Controlled Conditions has been received from every affected Distributor or Manufacturer / Downstream User of the Registrant's intermediate.
Table 1. Uses by workers in industrial settings

All identified uses summarized below take place in closed system.

<table>
<thead>
<tr>
<th>IU number</th>
<th>Identified Use (IU) name</th>
<th>Substance supplied to that use</th>
<th>Use descriptors</th>
</tr>
</thead>
</table>
| 1         | generation of coke oven light oil at cokery as such (substance itself) | Process category (PROC):  
PROC 1: Use in closed process, no likelihood of exposure  
PROC 2: Use in closed, continuous process with occasional controlled exposure  
Market sector by type of chemical product:  
PC 19: Intermediate  
Environmental release category (ERC):  
ERC 1: Manufacture of substances  
Sector of end use (SU):  
SU 8: Manufacture of bulk, large scale chemicals (including petroleum products)  
Subsequent service life relevant for that use?: no |
| 2         | use of light oil for the production of aromatic chemicals as such (substance itself) | Process category (PROC):  
PROC 1: Use in closed process, no likelihood of exposure  
PROC 2: Use in closed, continuous process with occasional controlled exposure  
Market sector by type of chemical product:  
PC 19: Intermediate  
Environmental release category (ERC):  
ERC 6a: Industrial use resulting in manufacture of another substance (use of intermediates)  
Sector of end use (SU):  
SU 8: Manufacture of bulk, large scale chemicals (including petroleum products)  
Subsequent service life relevant for that use?: no |
All identified uses summarized below take place in closed system.

<table>
<thead>
<tr>
<th>IU number</th>
<th>Identified Use (IU) name</th>
<th>Substance supplied to that use</th>
<th>Use descriptors</th>
</tr>
</thead>
</table>
| 3 | Use of light oil as carbon black feedstock, complete conversion into carbon black | as such (substance itself) in a mixture | Process category (PROC):
  * PROC 1: Use in closed process, no likelihood of exposure*
  * PROC 2: Use in closed, continuous process with occasional controlled exposure*
  * PROC 3: Use in closed batch process (synthesis or formulation)*

**Market sector by type of chemical product:**
- PC 19: Intermediate

**Environmental release category (ERC):**
- ERC 6a: Industrial use resulting in manufacture of another substance (use of intermediates)

**Sector of end use (SU):**
- SU 8: Manufacture of bulk, large scale chemicals (including petroleum products)

**Subsequent service life relevant for that use?** no

| 4 | Mixing with other coal tar oils | as such (substance itself) | Process category (PROC):
  * PROC 3: Use in closed batch process (synthesis or formulation)*

**Market sector by type of chemical product:**
- PC 19: Intermediate

**Environmental release category (ERC):**
- ERC 2: Formulation of preparations

**Sector of end use (SU):**
- SU 10: Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

**Subsequent service life relevant for that use?** no
<table>
<thead>
<tr>
<th>IU number</th>
<th>Identified Use (IU) name</th>
<th>Substance supplied to that use</th>
<th>Use descriptors</th>
</tr>
</thead>
</table>
| 5         | Sampling, loading and unloading of light oil (for all uses) | as such (substance itself) in a mixture | **Process category (PROC):**  
PROC 8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities  
PROC 8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities  
**Market sector by type of chemical product:**  
PC 19: Intermediate  
**Environmental release category (ERC):**  
ERC 1: Manufacture of substances  
ERC 6a: Industrial use resulting in manufacture of another substance (use of intermediates)  
**Sector of end use (SU):**  
SU 8: Manufacture of bulk, large scale chemicals (including petroleum products)  
**Subsequent service life relevant for that use?: no** |
|   | Laboratory analysis of light oil (for all uses) as such (substance itself) in a mixture | Process category (PROC):  
PROC 15: Use as laboratory reagent  
Market sector by type of chemical product:  
PC 21: Laboratory chemicals  
PC 19: Intermediate  
Environmental release category (ERC):  
ERC 1: Manufacture of substances  
ERC 6a: Industrial use resulting in manufacture of another substance (use of intermediates)  
Sector of end use (SU):  
SU 8: Manufacture of bulk, large scale chemicals (including petroleum products)  
Subsequent service life relevant for that use?: no |