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

Product information

Product Name: Toluene Reference, Fuel Grade
Material: 1016965, 1016964, 1016968, 1016967, 1016963, 1016966

EC-No. Registration number

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No. EC-No.</th>
<th>Legal Entity Registration number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>108-88-3 203-625-9 601-021-00-3</td>
<td>Chevron Phillips Chemicals International N.V. Pre-Registered</td>
</tr>
</tbody>
</table>

Company

Chevron Phillips Chemical Company LP
Specialty Chemicals
10001 Six Pines Drive
The Woodlands, TX 77380

Local

Chevron Phillips Chemicals International N.V.
Airport Plaza (Stockholm Building)
Leonardo Da Vinci alan 19
1831 Diegem
Belgium

SDS Requests: (800) 852-5530
Technical Information: (832) 813-4862
Responsible Party: Product Safety Group
Email:sds@cpchem.com

Emergency telephone:

Health:
866.442.9628 (North America)
1.832.813.4984 (International)

Transport:
CHEMTREC 800.424.9300 or 703.527.3887 (int'l)
Asia: +800 CHEMCALL (+800 2436 2255) China:+86-21-22157316
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

SDS Number: 100000013055
## SECTION 2: Hazards identification

### Classification of the substance or mixture

**REGULATION (EC) No 1272/2008**

| Flammable liquids, Category 2 | H225: Highly flammable liquid and vapor. |
| Skin irritation, Category 2 | H315: Causes skin irritation. |
| Reproductive toxicity, Category 2 | H361: Suspected of damaging fertility or the unborn child. |
| Specific target organ systemic toxicity - single exposure, Category 3 | H336: May cause drowsiness or dizziness. |
| Specific target organ systemic toxicity - repeated exposure, Category 2 | H373: May cause damage to organs through prolonged or repeated exposure. |
| Aspiration hazard, Category 1 | H304: May be fatal if swallowed and enters airways. |

### Label elements

**Labeling (REGULATION (EC) No 1272/2008)**

**Hazard pictograms:**

- Flammable liquid
- Skin irritation
- Drowning hazard

**Signal Word:** Danger

**Hazard Statements:**

- H225: Highly flammable liquid and vapor.
- H304: May be fatal if swallowed and enters airways.
- H315: Causes skin irritation.
- H336: May cause drowsiness or dizziness.
- H361: Suspected of damaging fertility or the unborn child.
- H373: May cause damage to organs through prolonged or repeated exposure.

**Precautionary Statements:**

**Prevention:**

- P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- P260: Do not breathe dust/fume/gas/mist/vapor/spray.
- P281: Use personal protective equipment as required.

**Response:**

- P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER/doctor.
- P331: Do NOT induce vomiting.
- P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
Hazardous ingredients which must be listed on the label:
- 108-88-3  Toluene

### SECTION 3: Composition/information on ingredients

**Synonyms**
- Toluol
- Toluene (Reference Fuel)

**Molecular formula**
- C7H8

#### Mixtures

**Hazardous ingredients**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Classification (REGULATION (EC) No 1272/2008)</th>
<th>Concentration [wt%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>203-625-9</td>
<td>Flam. Liq. 2; H225 Skin Irrit. 2; H315 Repr. 2; H361d STOT SE 3; H336 STOT RE 2; H373 Asp. Tox. 1; H304 Aquatic Chronic 3; H412</td>
<td>99.95</td>
</tr>
<tr>
<td></td>
<td>601-021-00-3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>200-753-7</td>
<td>Flam. Liq. 2; H225 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Muta. 1B; H340 Carc. 1A; H350 Aquatic Chronic 3; H412 STOT RE 1; H372 Asp. Tox. 1; H304 Aquatic Chronic 3; H412</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>601-020-00-8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

### SECTION 4: First aid measures

**General advice**
- Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Material may produce a serious, potentially fatal pneumonia if swallowed or vomited.

**If inhaled**
- Consult a physician after significant exposure. If unconscious place in recovery position and seek medical advice.

**In case of skin contact**
- If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.

**In case of eye contact**
- Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

**If swallowed**
- Keep respiratory tract clear. Do NOT induce vomiting. Never
### SECTION 5: Firefighting measures

**Flash point**: 4.4 °C (39.9 °F)  
*Method: closed cup*

**Autoignition temperature**: 529 °C (984 °F)

**Suitable extinguishing media**: Alcohol-resistant foam. Carbon dioxide (CO2). Dry chemical.

**Specific hazards during fire fighting**: Do not allow run-off from fire fighting to enter drains or water courses.

**Special protective equipment for fire-fighters**: Wear self-contained breathing apparatus for firefighting if necessary.

**Further information**: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.

**Fire and explosion protection**: Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

**Hazardous decomposition products**: Carbon oxides.

### SECTION 6: Accidental release measures

**Personal precautions**: Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

**Environmental precautions**: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

**Methods for cleaning up**: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
**SECTION 7: Handling and storage**

**Handling**

Advice on safe handling: Avoid formation of aerosol. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion: Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep open from away flames, hot surfaces and sources of ignition.

**Storage**

Requirements for storage areas and containers: No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

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

**Ingredients with workplace control parameters**

<table>
<thead>
<tr>
<th>SK</th>
<th>Zložka</th>
<th>Podstata</th>
<th>Hodnota</th>
<th>Kontrolné parametre</th>
<th>Poznámka</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>SK OEL</td>
<td>NPEL priemerný</td>
<td>50 ppm, 192 mg/m3</td>
<td>K</td>
<td></td>
</tr>
</tbody>
</table>

K Znamená, že faktor môže byť ľahko absorbovaný kožou. Niektoré faktory, ktoré ľahko prenikajú kožou, môžu spôsobovať až smrteľné otravy, často bez varovných príznakov (napr. anilín, nitrobenzén, nitroglykol, fenoly a pod.). Pri látkach s významným prienikom cez kožu, či už v podobe kvapalín alebo pár, je osobitne dôležité zabrániť kožnému kontaktu.

<table>
<thead>
<tr>
<th>SI</th>
<th>Sestavine</th>
<th>Osnova</th>
<th>Vrednost</th>
<th>Parametri nadzora</th>
<th>Pripomba</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>SI OEL</td>
<td>MV</td>
<td>50 ppm, 192 mg/m3</td>
<td>EU**, K, BAT</td>
<td></td>
</tr>
</tbody>
</table>

**SE**

<table>
<thead>
<tr>
<th>Bestándsdelar</th>
<th>Grundval</th>
<th>Värde</th>
<th>Kontrollparametrar</th>
<th>Anmärkning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>SE AF S</td>
<td>NGV</td>
<td>50 ppm, 192 mg/m3</td>
<td>B, H,</td>
</tr>
<tr>
<td>SE AF S</td>
<td>KTV</td>
<td>100 ppm, 384 mg/m3</td>
<td>B, H</td>
<td></td>
</tr>
</tbody>
</table>

**RO**

<table>
<thead>
<tr>
<th>Componente</th>
<th>Bazá</th>
<th>Valoare</th>
<th>Parametri de control</th>
<th>Notă</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>RO OEL</td>
<td>TWA</td>
<td>50 ppm, 192 mg/m3</td>
<td>P,</td>
</tr>
<tr>
<td>RO OEL</td>
<td>STEL</td>
<td>100 ppm, 384 mg/m3</td>
<td>P</td>
<td></td>
</tr>
</tbody>
</table>

**P** Substanțele cu indicativul P (pielea) pot pătrunde în organism prin pielea sau mucoasele intacte. Indicativul P nu se referă la substanțele care au numai o acțiune locală de tip irritativ.
**Toluene Reference, Fuel Grade**

**Version 1.7**

**Revision Date 2016-05-31**

<table>
<thead>
<tr>
<th>Componentes</th>
<th>Bases</th>
<th>Valor</th>
<th>Parâmetros de controlo</th>
<th>Nota</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>PT OEL</td>
<td>VLE-MP</td>
<td>20 ppm, (1), P, A4, IBE,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PT DL 305/2007</td>
<td>olio duração</td>
<td>50 ppm, 192 mg/m³</td>
<td>Cutânea,</td>
</tr>
<tr>
<td></td>
<td>PT DL 305/2007</td>
<td>curta duração</td>
<td>100 ppm, 384 mg/m³</td>
<td>Cutânea,</td>
</tr>
</tbody>
</table>

(1) Abrangido por legislação nacional específica ou por legislação comunitária não transposta

**A4** Agente não classificável como carcinogênico no Homem.

**Cutânea** Uma notação cutânea atribuída ao valor limite de exposição profissional assinala a possibilidade de absorção significativa através de pele.

**IBE** Identifica substâncias para as quais existem índices de exposição biológicos. Estes podem ser de dois tipos: IBE A referentes a pesticidas inibidores da acetilcolinesterase e IBE M indutores de metahemoglobina.

**P** Perigo de absorção cutânea

---

**SAFETY DATA SHEET**

**Revision Date 2016-05-31**

<table>
<thead>
<tr>
<th>PT Components</th>
<th>Bases</th>
<th>Valor</th>
<th>Control parameters</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>PT OEL</td>
<td>VLE-MP</td>
<td>20 ppm, (1), P, A4, IBE,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PT DL 305/2007</td>
<td>olio duração</td>
<td>50 ppm, 192 mg/m³</td>
<td>Cutânea,</td>
</tr>
<tr>
<td></td>
<td>PT DL 305/2007</td>
<td>curta duração</td>
<td>100 ppm, 384 mg/m³</td>
<td>Cutânea,</td>
</tr>
</tbody>
</table>

(1) Abrangido por legislação nacional específica ou por legislação comunitária não transposta

**A4** Agente não classificável como carcinogênico no Homem.

**Cutânea** Uma notação cutânea atribuída ao valor limite de exposição profissional assinala a possibilidade de absorção significativa através de pele.

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**P** Perigo de absorção cutânea
### Toluene Reference, Fuel Grade

**Version 1.7**

**Revision Date 2016-05-31**

<table>
<thead>
<tr>
<th>Component</th>
<th>Basis</th>
<th>Value</th>
<th>Control parameters</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>GB EH40</td>
<td>TWA</td>
<td>50 ppm, 191 mg/m³</td>
<td>Sk.</td>
</tr>
<tr>
<td></td>
<td>GB EH40</td>
<td>STEL</td>
<td>100 ppm, 384 mg/m³</td>
<td>Sk.</td>
</tr>
</tbody>
</table>

**SK**
Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.

<table>
<thead>
<tr>
<th>Composant</th>
<th>Base</th>
<th>Valeur</th>
<th>Paramètres de contrôle</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>FR VLE</td>
<td>VME</td>
<td>20 ppm, 76.8 mg/m³</td>
<td>R2, * noir,</td>
</tr>
<tr>
<td></td>
<td>FR VLE</td>
<td>VLCT (VLE)</td>
<td>100 ppm, 384 mg/m³</td>
<td>R2, * noir,</td>
</tr>
</tbody>
</table>

**ES**

<table>
<thead>
<tr>
<th>Componentes</th>
<th>Base</th>
<th>Valor</th>
<th>Parámetros de control</th>
<th>Nota</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>ES VLA</td>
<td>VLA-ED</td>
<td>50 ppm, 192 mg/m³</td>
<td>via dérma, r. VLB®, VLI,</td>
</tr>
<tr>
<td></td>
<td>ES VLA</td>
<td>VLA-EC</td>
<td>100 ppm, 384 mg/m³</td>
<td>via dérma, r. VLB®, VLI,</td>
</tr>
</tbody>
</table>

**FI**

<table>
<thead>
<tr>
<th>Aineosat</th>
<th>Peruste</th>
<th>Arvo</th>
<th>Valvonta koskevat muuttujat</th>
<th>Huomautus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>FI OEL</td>
<td>FI OEL</td>
<td>HTP-arvot 8h 25 ppm, 81 mg/m³ mela, iho,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HTP-arvot 15 min 100 ppm, 380 mg/m³ mela, iho,</td>
<td></td>
</tr>
</tbody>
</table>

**GB**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Basis</th>
<th>Value</th>
<th>Control parameters</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>GB EH40</td>
<td>TWA</td>
<td>50 ppm, 191 mg/m³</td>
<td>Sk.</td>
</tr>
<tr>
<td></td>
<td>GB EH40</td>
<td>STEL</td>
<td>100 ppm, 384 mg/m³</td>
<td>Sk.</td>
</tr>
</tbody>
</table>

**DE**

<table>
<thead>
<tr>
<th>Inhaltsstoffe</th>
<th>Grundlage</th>
<th>Wert</th>
<th>Zu überwachende Parameter</th>
<th>Bemerkung</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>DE TRGS 900</td>
<td>AGW</td>
<td>50 ppm, 190 mg/m³</td>
<td>DFG, EU, H, Y,</td>
</tr>
</tbody>
</table>

**CZ**

<table>
<thead>
<tr>
<th>Síl兹ky</th>
<th>Základ</th>
<th>Hodnota</th>
<th>Kontrolní parametry</th>
<th>Poznámka</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>CZ OEL</td>
<td>PEL</td>
<td>200 mg/m³</td>
<td>I, D,</td>
</tr>
</tbody>
</table>

**CZ**
Hodnota: 100000013055 7/17
## Toluene Reference, Fuel Grade

**SAFETY DATA SHEET**

**Version 1.7**

**Revision Date 2016-05-31**

---

### Biological exposure indices

**DE**

<table>
<thead>
<tr>
<th>Stoffname</th>
<th>CAS-Nr.</th>
<th>Zu überwachende Parameter</th>
<th>Probenannahmezeit punkt</th>
<th>Stand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>Tolul: 600 µg/l (Blut)</td>
<td>Expositionsende, bzw. Schichtende</td>
<td>2013-04-04</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o-Kresol: 1,5 mg/l (Urin)</td>
<td>Expositionsende, bzw. Schichtendebei Langzeitexposition: nach mehreren vorangegangenen Schichten</td>
<td>2013-04-04</td>
</tr>
</tbody>
</table>

**DMEL**

**Benzene**

- **End Use: Workers**
- **Routes of exposure: Skin contact**
- **Potential health effects: Chronic effects, Systemic effects**

**SDS Number:** 100000013055

---

**Routes of exposure:**
- **Skin contact**
- **Respiratory tract**
- **Inhalation**
- **Ingestion**

**Potential health effects:**
- **Acute effects:**
  - **Systemic effects:**
- **Chronic effects:**
- **Systemic effects:**

**Exposure guidelines:**
- **TWA:**
- **STEL:**

**Health and Safety Executive (Occupational Medicine and Hygiene Laboratory)**

**Institut National de Recherche et de Sécurité pour la prévention des accidents du travail et des maladies professionnelles**

**National Institute for Occupational Safety and Health**

**Deutsche Forschungsgemeinschaft**

**HSE**

**INRS**

**Washington, D.C.**

---

**BG**

- **Съставки**
  - **Основа**
    - **Стойност**
    - **Параметри на контрол**
    - **Бележка**

**BE**

- **Bestanddelen**
  - **Basis**
    - **Waarde**
    - **Controleparameters**
    - **Opmerking**

**AT**

- **Inhaltsstoffe**
  - **Grundlage**
    - **Wert**
    - **Zu überwachende Parameter**
    - **Bemerkung**

---

**Contents:**

- **Basis**
  - **Toluene**
  - **D**
  - **H**

**Routes of exposure:**
- **Skin contact**
- **Respiratory tract**
- **Inhalation**
- **Ingestion**

**Potential health effects:**
- **Acute effects:**
  - **Systemic effects:**
- **Chronic effects:**
- **Systemic effects:**

**Exposure guidelines:**
- **TWA:**
- **STEL:**

**Health and Safety Executive (Occupational Medicine and Hygiene Laboratory)**

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**National Institute for Occupational Safety and Health**

**Deutsche Forschungsgemeinschaft**

**HSE**

**INRS**

**Washington, D.C.**

---

**BG**

- **Съставки**
  - **Основа**
    - **Стойност**
    - **Параметри на контрол**
    - **Бележка**
Value: 234 mg/kg
End Use: Workers
Routes of exposure: Inhalation
Potential health effects: Chronic effects, Systemic effects
Value: 3.25 mg/m³

End Use: Consumers
Routes of exposure: Skin contact
Potential health effects: Chronic effects, Systemic effects
Value: 0.234 mg/kg

Derived minimal effect level
End Use: Consumer use
Routes of exposure: Ingestion
Potential health effects: Chronic effects, Systemic effects
Value: 0.00014 mg/kg
Derived minimal effect level

Engineering measures
Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the workplace when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment
Respiratory protection: Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as: Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Air-Purifying Respirator for Organic Vapors. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection: The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Eye protection: Eye wash bottle with pure water. Tightly fitting safety goggles.

Skin and body protection: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate: Flame retardant
antistatic protective clothing. Workers should wear antistatic footwear.

Hygiene measures: When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

**Appearance**
- Form: Non-viscous
- Physical state: Liquid
- Color: Clear
- Odor: Strong gasoline

**Safety data**
- Flash point: 4,4 °C (39,9 °F)  
  Method: closed cup
- Lower explosion limit: 1,2 %(V)
- Upper explosion limit: 7,1 %(V)
- Oxidizing properties: no
- Autoignition temperature: 529 °C (984 °F)
- Molecular formula: C7H8
- Molecular weight: 92,15 g/mol
- pH: Not applicable
- Pour point: No data available
- Freezing point: -94,5 °C (-138,1 °F)
- Boiling point/boiling range: 110,6 °C (231,1 °F)
- Vapor pressure: 1,10 PSI  
  at 37,8 °C (100,0 °F)
- Relative density: 0,87  
  at 15,6 °C (60,1 °F)
- Density: 0,9 g/cm3
- Water solubility: Soluble in alcohol, benzene, and ether; insoluble in water.
- Partition coefficient: n-octanol/water: No data available
- Viscosity, kinematic: No data available
- Relative vapor density: 2,8  
  (Air = 1,0)
Toluene Reference, Fuel Grade

Evaporation rate: 4.5
Percent volatile: > 99%

Other information
Conductivity: 8 pSm
at 20 °C
Method: ASTM D4308

SECTION 10: Stability and reactivity

Chemical stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions
Conditions to avoid: Heat, flames and sparks.

Materials to avoid: May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous decomposition products: Carbon oxides

Other data: No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

Toluene Reference, Fuel Grade
Acute oral toxicity: LD50: > 5.000 mg/kg
Method: Acute toxicity estimate

Acute inhalation toxicity: LC50: > 20 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Acute toxicity estimate

Acute dermal toxicity: LD50: > 5.000 mg/kg
Method: Acute toxicity estimate

Skin irritation: Irritating to skin.
May cause skin irritation in susceptible persons.

Eye irritation: Eye irritation.
Vapors may cause irritation to the eyes, respiratory system
Sensitization

Toluene: Did not cause sensitization on laboratory animals.

Benzene: Did not cause sensitization on laboratory animals.

Repeated dose toxicity: Method: Based on product or component testing, long term repeated exposure may cause damage to the following organs:

Target Organs: Auditory organs

Estimated based on individual component values.

Carcinogenicity: Method: Estimated based on individual component values.

Remarks: Suspect cancer hazard

Reproductive toxicity

Toluene: Species: Rat

Application Route: Inhalation

Dose: 0, 100, 500, 2000 ppm

Test period: 95 d

NOAEL Parent: 2000 ppm

Developmental Toxicity

Toluene: Species: Rat

Application Route: Inhalation

Dose: 0, 100, 500, 2000 ppm

Test period: 95 d

NOAEL Teratogenicity: 400-750 ppm

Aspiration toxicity: May be fatal if swallowed and enters airways.

Substances known to cause human aspiration toxicity hazards or to be regarded as if they cause human aspiration toxicity hazard.

CMR effects

Toluene: Carcinogenicity: Not classifiable as a human carcinogen.

Mutagenicity: Animal testing did not show any mutagenic effects.

Teratogenicity: Some evidence of adverse effects on development, based on animal experiments.

Reproductive toxicity: Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

Benzene: Carcinogenicity: Human carcinogen.

Mutagenicity: In vivo tests showed mutagenic effects

Teratogenicity: Did not show teratogenic effects in animal experiments.

Reproductive toxicity: Animal testing did not show any effects

SDS Number:100000013055
Toxicity to fish

**Toluene**
- LC50: 18 - 36 mg/l
- Exposure time: 96 h
- Species: Pimephales promelas (fathead minnow)

**Benzene**
- LC50: 5.3 mg/l
- Exposure time: 96 h
- Species: Oncorhynchus mykiss (rainbow trout)

Toxicity to daphnia and other aquatic invertebrates

**Toluene**
- EC50: 3.78 mg/l
- Exposure time: 48 h
- Species: Daphnia magna (Water flea)

**Benzene**
- EC50: 10 mg/l
- Exposure time: 48 h
- Species: Daphnia magna (Water flea)

Toxicity to algae

**Toluene**
- EC50: 134 mg/l
- Exposure time: 72 h
- Species: Chlamydomonas angulosa (Green algae)

**Benzene**
- ErC50: 100 mg/l
- Exposure time: 72 h
- Species: Pseudokirchneriella subcapitata (green algae)

Elimination information (persistence and degradability)

**Biodegradability**: Expected to be biodegradable

Ecotoxicology Assessment

**Acute aquatic toxicity**
- **Toluene**: Toxic to aquatic life.
- **Benzene**: Toxic to aquatic life.
# SAFETY DATA SHEET

## Toluene Reference, Fuel Grade

**Version 1.7**  
**Revision Date 2016-05-31**

### Chronic aquatic toxicity
- **Toluene**: Harmful to aquatic life with long lasting effects.
- **Benzene**: Harmful to aquatic life with long lasting effects.

### Results of PBT assessment
- **Toluene**: Non-classified vPvB substance, Non-classified PBT substance
- **Benzene**: This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

### Additional ecological information
- **Toluene**: Toxic to aquatic life.
- **Benzene**: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life.

## SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped. Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

- **Product**: The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

- **Contaminated packaging**: Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

## SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

**US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)**

UN1294, TOLUENE, 3, II, RQ (TOLUENE)

**IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)**

UN1294, TOLUENE, 3, II, (4,4 °C)
IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
UN1294, TOLUENE, 3, II

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
UN1294, TOLUENE, 3, II, (D/E)

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
UN1294, TOLUENE, 3, II

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
UN1294, TOLUENE, 3, II

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

National legislation

Major Accident Hazard Legislation : 96/82/EC Update: 2003
Highly flammable
7b
Quantity 1: 5.000 t
Quantity 2: 50.000 t

Water contaminating class (Germany) : WGK 2 water endangering
List with water hazardous substances (Class 1 till 3) in VwVwS

Notification status
Europe REACH : This mixture contains only ingredients which have been subject to a pre-registration according to Regulation (EU) No. 1907/2006 (REACH).
United States of America TSCA : On TSCA Inventory
Canada DSL : All components of this product are on the Canadian DSL
Australia AICS : On the inventory, or in compliance with the inventory
New Zealand NZIoC : On the inventory, or in compliance with the inventory
Japan ENCS : On the inventory, or in compliance with the inventory
Korea KECI : On the inventory, or in compliance with the inventory
Philippines PICCS : On the inventory, or in compliance with the inventory
China IECSC : On the inventory, or in compliance with the inventory
NFPA Classification: Health Hazard: 2
Fire Hazard: 3
Reactivity Hazard: 0

Further information
Legacy SDS Number: 3476

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

### Key or legend to abbreviations and acronyms used in the safety data sheet

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>American Conference of Government Industrial Hygienists</td>
</tr>
<tr>
<td>LDS0</td>
<td>Lethal Dose 50%</td>
</tr>
<tr>
<td>LOAEL</td>
<td>Lowest Observed Adverse Effect Level</td>
</tr>
<tr>
<td>NFPA</td>
<td>National Fire Protection Agency</td>
</tr>
<tr>
<td>NIOSH</td>
<td>National Institute for Occupational Safety &amp; Health</td>
</tr>
<tr>
<td>NZIoC</td>
<td>New Zealand Inventory of Chemicals</td>
</tr>
<tr>
<td>NOAEL</td>
<td>No Observable Adverse Effect Level</td>
</tr>
<tr>
<td>NOEC</td>
<td>No Observed Effect Concentration</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety &amp; Health Administration</td>
</tr>
<tr>
<td>PEL</td>
<td>Permissible Exposure Limit</td>
</tr>
<tr>
<td>PICCS</td>
<td>Philippines Inventory of Commercial Chemical Substances</td>
</tr>
<tr>
<td>PRNT</td>
<td>Presumed Not Toxic</td>
</tr>
<tr>
<td>RCRA</td>
<td>Resource Conservation Recovery Act</td>
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<tr>
<td>STEL</td>
<td>Short-term Exposure Limit</td>
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<tr>
<td>SARA</td>
<td>Superfund Amendments and Reauthorization Act</td>
</tr>
<tr>
<td>TLV</td>
<td>Threshold Limit Value</td>
</tr>
<tr>
<td>TWA</td>
<td>Time Weighted Average</td>
</tr>
</tbody>
</table>

SDS Number: 100000013055
<table>
<thead>
<tr>
<th>Substances in China</th>
<th>TSCA</th>
<th>Toxic Substance Control Act</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENCS</td>
<td>Japan, Inventory of Existing and New Chemical Substances</td>
<td></td>
</tr>
<tr>
<td>KECI</td>
<td>Korea, Existing Chemical Inventory</td>
<td></td>
</tr>
<tr>
<td>&lt;=</td>
<td>Less Than or Equal To</td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Lethal Concentration 50%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TSCA</td>
<td>Unknown or Variable Composition, Complex Reaction Products, and Biological Materials</td>
</tr>
<tr>
<td></td>
<td>WHMIS</td>
<td>Workplace Hazardous Materials Information System</td>
</tr>
</tbody>
</table>

Full text of H-Statements referred to under sections 2 and 3.

H225  Highly flammable liquid and vapor.
H304  May be fatal if swallowed and enters airways.
H315  Causes skin irritation.
H319  Causes serious eye irritation.
H336  May cause drowsiness or dizziness.
H340  May cause genetic defects.
H350  May cause cancer.
H361  Suspected of damaging fertility or the unborn child.
H361d  Suspected of damaging the unborn child.
H372  Causes damage to organs through prolonged or repeated exposure.
H373  May cause damage to organs through prolonged or repeated exposure.
H412  Harmful to aquatic life with long lasting effects.