SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

<table>
<thead>
<tr>
<th>Trade name</th>
<th>MARLOTHERM® N</th>
</tr>
</thead>
<tbody>
<tr>
<td>REACH No.</td>
<td>01-2119485843-26-0004</td>
</tr>
<tr>
<td>Substance name (REACH / CLP)</td>
<td>Benzene, mono-C10-13-alkyl derivs., distn. residues</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Use</th>
<th>Industrial use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uses advised against</td>
<td>heat transfer medium</td>
</tr>
</tbody>
</table>

1.3 Details of the supplier of the safety data sheet

<table>
<thead>
<tr>
<th>Company</th>
<th>SASOL Germany GmbH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anckelmannsplatz 1</td>
<td>20537 Hamburg</td>
</tr>
<tr>
<td>Telephone: +49 40 63684-1000</td>
<td></td>
</tr>
<tr>
<td>Telefax: +49 40 63684-3700</td>
<td></td>
</tr>
<tr>
<td>Information (Product safety):</td>
<td>Telephone: + 49 (0) 23 65 - 49 47 05</td>
</tr>
<tr>
<td></td>
<td>Telefax: + 49 (0) 23 65 - 49 92 40</td>
</tr>
<tr>
<td>E-mail address</td>
<td><a href="mailto:msds-info.germany@de.sasol.com">msds-info.germany@de.sasol.com</a></td>
</tr>
</tbody>
</table>

1.4 Emergency telephone number

| Emergency telephone number | + 49 (0) 23 65 - 49 22 32 |

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

| Aspiration hazard | Category 1 | May be fatal if swallowed and enters airways. |

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms

<table>
<thead>
<tr>
<th>Signal word</th>
<th>Danger</th>
</tr>
</thead>
</table>

Hazard statements

| H304 | May be fatal if swallowed and enters airways. |
Precautionary statements
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P331 Do NOT induce vomiting.
P405 Store locked up.
P501 Dispose of contents/container to an approved waste disposal plant.

Supplemental Hazard Statements
EUH066 Repeated exposure may cause skin dryness or cracking.

2.3 Other hazards
During the use at elevated temperatures thermal decomposition leads to the formation of low-boiling and high-boiling secondary products (e.g. hydrocarbons).
See also section 7.1 in this Safety Data Sheet

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

This product is a substance in the meaning of regulation (EC) 1907/2006.

COMPONENTS TO BE NAMED IN ACCORDANCE WITH REGULATION (EC) 1907/2006 AS WELL AS OTHER HAZARDOUS INGREDIENTS AND CONTAINED SUBSTANCES WITH WORK PLACE LIMIT VALUES

Benzene, mono-C10-13-alkyl derivs., distn. residues

component type: Active ingredient

EC-No.: 284-660-7 Index-No.: 
REACH No.: 01-2119485843-26-0004 CAS-No.: 84961-70-6
Asp. Tox. 1 H304

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

Other data
Synonym description: Benzene, mono-C10-14-alkyl derivs., fractionation bottoms; CAS-No.: 85117-41-5

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice Take off all contaminated clothing immediately. If you feel unwell, seek medical advice (show the label where possible).

If inhaled Move to fresh air in case of accidental inhalation of vapours. Consult a physician after significant exposure.

In case of skin contact Wash off with soap and water.

In case of eye contact Immediately flush eye(s) with plenty of water.

If swallowed Do NOT induce vomiting. Call a physician immediately.
4.2 Most important symptoms and effects, both acute and delayed

**Symptoms:** No information available.
**Risks:** No information available.

4.3 Indication of any immediate medical attention and special treatment needed

**Treatment:** Do not induce vomiting; contains petroleum distillates and/or aromatic solvents.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

**Suitable extinguishing media**
- Water spray
- Dry powder
- Foam
- Carbon dioxide (CO2)

**Unsuitable extinguishing media**
- High volume water jet

5.2 Special hazards arising from the substance or mixture

**Specific hazards during firefighting**
- Dangerous gases or fumes may occur in case of fire.

5.3 Advice for firefighters

**Special protective equipment for firefighters**
- Wear self-contained breathing apparatus for firefighting if necessary.

**Further information**
- Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

**Personal precautions**
- Handle in accordance with good industrial hygiene and safety practice. Use personal protective equipment. Do not breathe vapours or spray mist.

**Special precautions**
- Danger of slipping after spill or leakage. Spilling onto the container's outside will make container slippery.

6.2 Environmental precautions

**Environmental precautions**
- Avoid subsoil penetration.
- Do not flush into surface water or sanitary sewer system.

6.3 Methods and materials for containment and cleaning up

**Methods for cleaning up**
- Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Use mechanical handling equipment. The material taken up must be disposed of in accordance with regulations. If they get dirty, wash clothes. If equipment gets dirty, clean using a surfactant solution. Do not allow washing water to get into the environment. Dispose of it instead via the drains.

6.4 Reference to other sections
SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling
Follow advice in the 'Marlotherm® Heat Transfer Fluids' product brochure and in DIN 4754 (heat transfer systems using organic heat transfer fluids). During the use at elevated temperatures thermal decomposition leads to the formation of low-boiling and high-boiling secondary products. During removal of low boiling decomposition products with potential highly flammable properties from the system, appropriate risk management measures for flammable liquids have to be applied – especially when they are concentrated and collected. Risk management measurements for flammable liquids are at least: Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Use only non-sparking tools. Use explosion-proof electrical/ventilating/lighting/equipment. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Wear protective gloves/protective clothing/eye protection/face protection.

Advice on protection against fire and explosion
Normal measures for preventive fire protection. Spontaneous combustion can occur should the product come into contact with hot fibre glass or mineral fibre insulations (e.g. in case of leakages), especially when exposed to atmospheric oxygen (e.g. removal of insulation panels). The use of foam glass as an insulating material can reduce the risk of such spontaneous combustion. Insulation material soaked with the product must be replaced with new insulation material as soon as possible.

Fire-fighting class
B: Fires involving liquids or liquid containing substances. Also includes substances which become liquid at elevated temperatures.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers
Keep container tightly closed.

Storage class (TRGS 510)
10: Combustible liquids not in Storage Class 3

Other data
Stable at normal ambient temperature and pressure.

container material
suitable materials: Steel, Stainless steel

7.3 Specific end use(s)

Specific use(s)
This information is not available.
### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1 Control parameters

**COMPONENTS WITH WORKPLACE CONTROL PARAMETERS**

National occupational exposure limits

No data available

**EUROPEAN OCCUPATIONAL EXPOSURE LIMITS**

No data available

**DERIVED NO EFFECT LEVEL (DNEL)**

<table>
<thead>
<tr>
<th>Substance name: Benzene, mono-C10-13-alkyl derivs., distn. residues</th>
<th>End Use</th>
<th>Exposure routes</th>
<th>Value</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workers</td>
<td>dermal, Acute/short-term exposure - systemic effects</td>
<td></td>
<td></td>
<td>Not relevant / not applicable</td>
</tr>
<tr>
<td></td>
<td>Inhalation, Acute/short-term exposure - systemic effects</td>
<td></td>
<td></td>
<td>Not relevant / not applicable</td>
</tr>
<tr>
<td></td>
<td>dermal, Acute/short-term exposure - local effects</td>
<td></td>
<td></td>
<td>Not relevant / not applicable</td>
</tr>
<tr>
<td></td>
<td>Inhalation, Acute/short-term exposure - local effects</td>
<td></td>
<td></td>
<td>Not relevant / not applicable</td>
</tr>
<tr>
<td></td>
<td>dermal, long-term exposure - systemic effects</td>
<td>96 mg/kg</td>
<td>based on body weight and day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inhalation, long-term exposure - systemic effects</td>
<td></td>
<td></td>
<td>Not relevant / not applicable</td>
</tr>
<tr>
<td></td>
<td>dermal, long-term exposure - local effects</td>
<td></td>
<td></td>
<td>Not relevant / not applicable</td>
</tr>
<tr>
<td></td>
<td>Inhalation, long-term exposure - local effects</td>
<td></td>
<td></td>
<td>Not relevant / not applicable</td>
</tr>
<tr>
<td>Consumers</td>
<td>dermal, Acute/short-term exposure - systemic effects</td>
<td></td>
<td></td>
<td>Not relevant / not applicable</td>
</tr>
<tr>
<td></td>
<td>Inhalation, Acute/short-term exposure - systemic effects</td>
<td></td>
<td></td>
<td>Not relevant / not applicable</td>
</tr>
<tr>
<td></td>
<td>Oral, Acute/short-term exposure - systemic effects</td>
<td></td>
<td></td>
<td>Not relevant / not applicable</td>
</tr>
<tr>
<td></td>
<td>dermal, Acute/short-term exposure - local effects</td>
<td></td>
<td></td>
<td>Not relevant / not applicable</td>
</tr>
<tr>
<td></td>
<td>Inhalation, Acute/short-term exposure - local effects</td>
<td></td>
<td></td>
<td>Not relevant / not applicable</td>
</tr>
<tr>
<td></td>
<td>dermal, long-term exposure - systemic effects</td>
<td></td>
<td></td>
<td>Not relevant / not applicable</td>
</tr>
<tr>
<td></td>
<td>Inhalation, long-term exposure - systemic effects</td>
<td></td>
<td></td>
<td>Not relevant / not applicable</td>
</tr>
<tr>
<td></td>
<td>Oral, long-term exposure - systemic effects</td>
<td></td>
<td></td>
<td>Not relevant / not applicable</td>
</tr>
<tr>
<td></td>
<td>dermal, long-term exposure - local effects</td>
<td></td>
<td></td>
<td>Not relevant / not applicable</td>
</tr>
<tr>
<td></td>
<td>Inhalation, long-term exposure - local effects</td>
<td></td>
<td></td>
<td>Not relevant / not applicable</td>
</tr>
</tbody>
</table>
**PREDICTED NO EFFECT CONCENTRATION (PNEC)**

<table>
<thead>
<tr>
<th>Environmental Compartment</th>
<th>Value</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh water</td>
<td>0.000075 mg/l</td>
<td></td>
</tr>
<tr>
<td>Marine water</td>
<td>0.0075 µg/l</td>
<td></td>
</tr>
<tr>
<td>intermittent release</td>
<td>0.001 mg/l</td>
<td></td>
</tr>
<tr>
<td>treatment plant</td>
<td>2 mg/l</td>
<td></td>
</tr>
<tr>
<td>Fresh water sediment</td>
<td>1761 mg/kg</td>
<td>based on dry weight</td>
</tr>
<tr>
<td>Marine sediment</td>
<td>1761 mg/kg</td>
<td>based on dry weight</td>
</tr>
<tr>
<td>Soil</td>
<td>Not relevant / not applicable</td>
<td></td>
</tr>
<tr>
<td>food</td>
<td>Not relevant / not applicable</td>
<td></td>
</tr>
</tbody>
</table>

8.2 Exposure controls

**PERSONAL PROTECTIVE EQUIPMENT**

**Respiratory protection**

No personal respiratory protective equipment normally required. In inadequately ventilated areas, where workplace limits are exceeded, where unpleasant odours exist or where aerosols are in use, or smoke and mist occur, use self-contained breathing apparatus or breathing apparatus with a type A filter or appropriate combined filter (e.g. where aerosols are in use, or smoke and mist occur, A-P2 or ABEK-P2), in compliance with EN 141.

**Hand protection**

The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. 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. Be aware that in daily use the durability of a chemical resistant protective glove can be notably shorter than the break through time measured according to EN 374, due to the numerous outside influences (e.g. temperature).

**gloves suitable for permanent contact:**
- Material: Fluorinated rubber
  - Break through time: \( \geq 480 \text{ min} \)
  - Layer thickness: 0.4 mm

- Material: Nitrile rubber/nitrile latex
  - Break through time: \( \geq 480 \text{ min} \)
  - Layer thickness: 0.35 mm

**gloves suitable for splash protection:**
- Material: Polyvinylchloride
  - Break through time: \( \geq 60 \text{ min} \)
  - Layer thickness: 0.5 mm

**unsuitable gloves**
- Material: Natural rubber/natural latex, Polychloroprene

**Eye protection**

Tightly fitting safety goggles

**Hygiene measures**

General industrial hygiene practice.

**Protective measures**

Avoid contact with eyes. Wear suitable gloves and eye/face protection.
ENVIRONMENTAL EXPOSURE CONTROLS

General advice
Avoid subsoil penetration.
Do not flush into surface water or sanitary sewer system.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid; 20 °C; 1,013 hPa</td>
</tr>
<tr>
<td>Form</td>
<td>liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>yellow</td>
</tr>
<tr>
<td>Odour</td>
<td>very faint</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>20 °C; neutral</td>
</tr>
<tr>
<td>Pour point</td>
<td>ca. -60 °C; ISO 3016</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>330 - 400 °C; ASTM D 1078</td>
</tr>
<tr>
<td>Flash point</td>
<td>ca. 180 °C; EN 22719</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>not applicable (liquid)</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>&lt; 0.01 hPa; 20 °C</td>
</tr>
<tr>
<td>Relative vapour density</td>
<td>No data available</td>
</tr>
<tr>
<td>Density</td>
<td>0.855 - 0.888 g/cm3; 20 °C; DIN 51757</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Water solubility</td>
<td>&lt; 0.1 g/l; 20 °C</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>log Pow: &gt; 6; OECD Test Guideline 117</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>ca. 330 °C; DIN 51794</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>not auto-flammable</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>34 mm2/s; 20 °C</td>
</tr>
<tr>
<td></td>
<td>ca. 20 mm2/s; 40 °C</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>not expected based on structure and functional groups</td>
</tr>
<tr>
<td></td>
<td>not explosive; Method A.14, Appendix V, Directive 67/548/EEC</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>not expected based on structure and functional groups</td>
</tr>
</tbody>
</table>

9.2 Other data
None known.
SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity
Note: Stable at normal ambient temperature and pressure.

10.2 Chemical stability
Note: No decomposition if stored normally. Stable under normal conditions.

10.3 Possibility of hazardous reactions
Hazardous reactions: Heating can release hazardous gases. Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Conditions to avoid: Direct heating, dirt, chemical contamination, sunlight, UV or ionising radiation. Extremes of temperature and direct sunlight.

10.5 Incompatible materials to avoid
Materials to avoid: Strong oxidizing agents;

10.6 Hazardous decomposition products
Thermal decomposition: During the use at elevated temperatures thermal decomposition leads to the formation of low-boiling and high-boiling secondary products (e.g. hydrocarbons). See also section 7.1 in this Safety Data Sheet

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute toxicity
- LD50 Rat: > 2,000 mg/kg; OECD Test Guideline 401
- Acute oral toxicity: Based on available data, the classification criteria are not met.
- Acute inhalation toxicity: The study is not necessary. Sufficient data are available from alternative routes of exposure. Negligible or unlikely exposure pathways
- Acute dermal toxicity: LD50 Rat: > 2,000 mg/kg; OECD Test Guideline 402 (literature value)
  - The data are derived from the evaluations or test results achieved with similar products (conclusion by analogy).
  - Test substance: Benzene, mono-C12-14-alkyl derivs., fractionation bottoms
  - Based on available data, the classification criteria are not met.

Skin corrosion/irritation
Skin irritation: Rabbit: not irritating; OECD Test Guideline 404
Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation
Eye irritation: Rabbit: not irritating; OECD Test Guideline 405 (literature value)
Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Sensitisation

Guinea pig: not sensitizing; OECD Test Guideline 406
Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity in vitro

In vitro tests did not show mutagenic effects

Genotoxicity in vivo

The study is not necessary.
In vitro tests did not show mutagenic effects

Remarks

Based on available data, the classification criteria are not met.

Carcinogenicity

Carcinogenicity

The substance has been shown to be not genotoxic, therefore it is not expected to have a carcinogenic potential.

Reproductive toxicity

Reproductive toxicity

Two-generation reproductive toxicity: Rat; Oral; 245-day
NOAEL ((parents)): 50 mg/kg (based on body weight and day)
NOAEL (F1): 50 mg/kg (based on body weight and day)
NOAEL (F2): 50 mg/kg (based on body weight and day); OECD Test Guideline 416
Category approach (literature value)

Remarks-Reproductive toxicity

Based on available data, the classification criteria are not met.

Teratogenicity

Rat; Oral
NOAEL: 1,600 mg/kg (based on body weight and day)
NOAEL (pregnant female): 400 mg/kg (based on body weight and day); OECD Test Guideline 414 (literature value)
The data are derived from the evaluations or test results achieved with similar products (conclusion by analogy).
Test substance: Benzene, mono-C12-14-alkyl derivs., fractionation bottoms

Remarks-Teratogenicity

Based on available data, the classification criteria are not met.

STOT - single exposure

Remarks

The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

Remarks

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Rat; Oral: Subchronic toxicity
NOAEL: 500 mg/kg (based on body weight and day)
LOAEL: 1,000 mg/kg (based on body weight and day); OECD Test Guideline 422 (literature value)
The data are derived from the evaluations or test results achieved with similar products (conclusion by analogy).
Test substance: Benzene, mono-C12-14-alkyl derivs., fractionation bottoms

Aspiration hazard

Aspiration toxicity

May be fatal if swallowed and enters airways.

Further information
Toxicological information

The substance is metabolised and excreted.
The substance is expected to be rapidly excreted.
Bioaccumulation is unlikely.
(literature value)

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish
LC50 (14 d) Fish ; OECD Test Guideline 204 In the range of water solubility not toxic under test conditions. (literature value)
The data are derived from the evaluations or test results achieved with similar products (conclusion by analogy).
Test substance: Benzene, mono-C12-14-alkyl derivs., fractionation bottoms

Toxicity to fish - Chronic toxicity
The study is not necessary.
Sufficient information is available to predict no toxicity at the limit of solubility.

Toxicity to daphnia and other aquatic invertebrates
(48 h) Daphnia (water flea) ; static test; OECD Test Guideline 202 In the range of water solubility not toxic under test conditions.

Toxicity to daphnia and other aquatic invertebrates - Chronic toxicity
Sufficient information is available to predict no toxicity at the limit of solubility.

Toxicity to aquatic plants
EC50 (72 h) Desmodesmus subspicatus (Scenedesmus subspicatus): > 1 - 10 mg/l ; Growth inhibition; OECD Test Guideline 201; (literature value)

Toxicity to bacteria
EC10 Pseudomonas putida: > 20 mg/l; oxygen consumption test
The substance is not to be considered to be inhibitory to bacteria.

Toxicity to soil dwelling organisms
The study is not necessary.
Justification:
Substance is a UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for this complex substance.

Toxicity to terrestrial flora
The study is not necessary.
Justification:
Substance is a UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for this complex substance.

Toxicity for other terrestrial non-mammalian fauna
The study is not necessary.
Justification:
exposure considerations

12.2 Persistence and degradability

Biodegradability
Not readily biodegradable.; < 60 %; 28 d; BODIS test

12.3 Bioaccumulative potential

Bioaccumulation
Bioaccumulation is unlikely.

12.4 Mobility in soil

Mobility
Adsorption/Soil; Medium: Soil; log Koc: 6.3 - 7.7; (calculated) immobile
The data are derived from the evaluations or test results achieved with similar products (conclusion by analogy).

12.5 Results of PBT and vPvB assessment

Results of PBT assessment
Based on available data, the classification criteria are not met.
12.6 Other adverse effects

General advice

None known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Can be incinerated, when in compliance with local regulations.

waste code of the European Union: EWC

A waste code in accordance with the European Waste Catalogue (EWC) may not be assigned to this product since it admits of a classification only when the consumer uses it for some purpose. The waste code must be determined in agreement with the regional waste disposal authority or company.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number

ADR Not dangerous goods
RID Not dangerous goods
ADN Not dangerous goods
IMDG Not dangerous goods
ICAO/IATA Not dangerous goods

14.2 Proper shipping name

ADR Not dangerous goods
RID Not dangerous goods
ADN Not dangerous goods
IMDG Not dangerous goods
ICAO/IATA Not dangerous goods

14.3 Transport hazard class

ADR Not dangerous goods
RID Not dangerous goods
ADN Not dangerous goods
IMDG Not dangerous goods
ICAO/IATA Not dangerous goods

14.4 Packing group

ADR Not dangerous goods
RID Not dangerous goods
ADN Not dangerous goods
IMDG Not dangerous goods
ICAO/IATA Not dangerous goods

14.5 Environmental hazards

ADR Environmentally hazardous no
RID  Environmentally hazardous  no
ADN  Environmentally hazardous  no
IMDG  Marine pollutant  no
ICAO/IATA  Environmentally hazardous  no

14.6 Special precautions for user
Not classified as dangerous in the meaning of transport regulations.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Remarks  No information available.

SECTION 15: REGULATORY INFORMATION

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

Occupational restrictions  Employment restrictions for children and young workers in accordance with Directive 94/33/EC and the respective national provisions are to be observed.

NATIONAL/OTHER REGULATIONS

List entry in the directive: Not applicable
NOTIFICATION STATUS

Switzerland. Consolidated Inventory
- CH INV
- listed (product or constituents are listed)

US. Toxic Substances Control Act
- TSCA
- listed (product or constituents are listed)

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL)
- DSL
- restricted (product or constituents are listed with quantity restrictions)

Australia. Industrial Chemical (Notification and Assessment) Act
- AICS
- listed (product or constituents are listed)

Japan. Kashin-Hou Law List
- ENCS (JP)
- listed (product or constituents are listed)

Japan. Industrial Safety & Health Law (ISHL) List
- ISHL (JP)
- listed (product or constituents are listed)

Korea. Existing Chemicals Inventory (KECI)
- KECI (KR)
- not listed (product or constituents are not listed)

Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act
- PICCS (PH)
- not listed (product or constituents are not listed)

China. Inventory of Existing Chemical Substances
- INV (CN)
- listed (product or constituents are listed)

Please note: the names and CAS numbers which are used for this product in the stated inventories may deviate from the information which is listed in chapter 3.

15.2 Chemical Safety Assessment

Benzene, mono-C10-13-alkyl derivs., distn. residues
- A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: OTHER INFORMATION

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

H304
- May be fatal if swallowed and enters airways.

Safety datasheet sections which have been updated:

2. Hazards identification
3. Composition/information on ingredients
8. Exposure controls/personal protection
12. Ecological information
15. Regulatory information

Further information:
- 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.
This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

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

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADN</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure</td>
</tr>
<tr>
<td>ADR</td>
<td>Accord européen relatif au transport international des marchandises Dangereuses par Route</td>
</tr>
<tr>
<td>AICS</td>
<td>Australian Inventory of Chemical Substances</td>
</tr>
<tr>
<td>ANSI</td>
<td>American National Standards Institute</td>
</tr>
<tr>
<td>ASTM</td>
<td>American Society of Testing and Materials (US)</td>
</tr>
<tr>
<td>BCF</td>
<td>Bioconcentration factor</td>
</tr>
<tr>
<td>CLP</td>
<td>Regulation on Classification, Labelling and Packaging of Substances and Mixtures</td>
</tr>
<tr>
<td>DIN</td>
<td>Deutsches Institut für Normung</td>
</tr>
<tr>
<td>DNEL</td>
<td>Derived No-Effect Level</td>
</tr>
<tr>
<td>DSL</td>
<td>Domestic Substances List</td>
</tr>
<tr>
<td>EC...</td>
<td>Effect concentration ...%</td>
</tr>
<tr>
<td>ENCS</td>
<td>Existing Notified Chemical Substances (Japan)</td>
</tr>
<tr>
<td>EWC</td>
<td>European Waste Catalogue</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>IBC</td>
<td>Intermediate Bulk Container</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods</td>
</tr>
<tr>
<td>IMO</td>
<td>International Maritime Organization</td>
</tr>
<tr>
<td>ISH/L</td>
<td>Industrial Safety and Health Law (Japan)</td>
</tr>
<tr>
<td>ISO</td>
<td>International Organization for Standardization</td>
</tr>
<tr>
<td>IUPAC</td>
<td>International Union of Pure and Applied Chemistry</td>
</tr>
<tr>
<td>KECI</td>
<td>Korea Existing Chemicals Inventory</td>
</tr>
<tr>
<td>LC...</td>
<td>Lethal Concentration, ...%</td>
</tr>
<tr>
<td>LD...</td>
<td>Lethal Dose, ...%</td>
</tr>
<tr>
<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution From Ships</td>
</tr>
<tr>
<td>NDSL</td>
<td>Non-Domestic Substances List</td>
</tr>
<tr>
<td>NOAEL</td>
<td>no observable adverse effect level</td>
</tr>
<tr>
<td>NOEL/NOEC</td>
<td>No Observed-effect level/concentration</td>
</tr>
<tr>
<td>NZIoC</td>
<td>New Zealand Inventory of Chemicals</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>PBT</td>
<td>persistent, bioaccumulative, toxic</td>
</tr>
<tr>
<td>PICCS</td>
<td>Philippine Inventory of Chemicals and Chemical Substances</td>
</tr>
<tr>
<td>PNEC</td>
<td>Predicted No-Effect Concentration</td>
</tr>
<tr>
<td>REACH</td>
<td>Registration, Evaluation, Authorisation and Restriction of Chemicals</td>
</tr>
<tr>
<td>RID</td>
<td>Règlement concernant le transport international ferroviaire de marchandises dangereuses</td>
</tr>
<tr>
<td>TG</td>
<td>Test Guideline</td>
</tr>
<tr>
<td>TRGS</td>
<td>Technische Regeln für Gefahrstoffs</td>
</tr>
<tr>
<td>TSCA</td>
<td>Toxic Substances Control Act</td>
</tr>
<tr>
<td>vPvB</td>
<td>very persistent, very bioaccumulative</td>
</tr>
<tr>
<td>WGK</td>
<td>Wassergefährdungsklasse</td>
</tr>
</tbody>
</table>

Annex

Attachments to the safety data sheet and/or lists of the identified uses for the listed substances can be downloaded using the internet links below.

Benzene, mono-C10-13-alkyl derivs., distn. residues