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

1.1 Product identifiers
Product name: Benzyl cyanide
Product Number: B19401
Brand: Aldrich
REACH No.: A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.
CAS-No.: 140-29-4

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet
Company: Sigma-Aldrich Chemie GmbH
Eschenstrasse 5
D-82024 TAUFKIRCHEN
Telephone: +49 (0)89 6513-1130
Fax: +49 (0)89 6513-1161
E-mail address: technischeservice@merckgroup.com

1.4 Emergency telephone
Emergency Phone #: 0800 181 7059 (CHEMTREC Deutschland)
+49 (0)696 43508409 (CHEMTREC weltweit)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 2), H330
Acute toxicity, Dermal (Category 3), H311

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

2.2 Label elements
Labelling according Regulation (EC) No 1272/2008
Signal word: Danger

Hazard statement(s)
- H301 + H311: Toxic if swallowed or in contact with skin.
- H330: Fatal if inhaled.

Precautionary statement(s)
- P260: Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
- P264: Wash skin thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P280: Wear protective gloves/ protective clothing.
- P302 + P352 + P312: IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/ doctor if you feel unwell.
- P304 + P340 + P310: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

Supplemental Hazard Statements: none

2.3 Other hazards
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air on intense heating.

SECTION 3: Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Synonyms</th>
<th>Phenylacetonitrile</th>
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<table>
<thead>
<tr>
<th>Formula</th>
<th>C₈H₇N</th>
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<table>
<thead>
<tr>
<th>Molecular weight</th>
<th>117.15 g/mol</th>
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<th>CAS-No.</th>
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<th>EC-No.</th>
<th>205-410-5</th>
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</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>benzyl cyanide</td>
<td>Acute Tox. 3; Acute Tox. 2; Acute Tox. 3; H301, H330, H311</td>
<td>&lt;= 100 %</td>
</tr>
</tbody>
</table>

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

SECTION 4: First aid measures

4.1 Description of first-aid measures

**General advice**
First aider needs to protect himself. Show this material safety data sheet to the doctor in attendance.
If inhaled
After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician immediately.

In case of eye contact
After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed
If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 – 40 g in a 10% slurry) and consult a doctor as quickly as possible.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media
   Unsuitable extinguishing media
   For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture
   Carbon oxides, Nitrogen oxides (NOx)

5.3 Advice for firefighters
   Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information
   Suppress (knock down) gases/vapors/mists with a water spray jet.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
   Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.
   For personal protection see section 8.

6.2 Environmental precautions
   No special precautionary measures necessary.

6.3 Methods and materials for containment and cleaning up
   Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections
   For disposal see section 13.
SECTION 7: Handling and storage

7.1 Precautions for safe handling
Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Ingredients with workplace control parameters

8.2 Exposure controls
Appropriate engineering controls
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Full contact
Material: butyl-rubber
Minimum layer thickness: 0,3 mm
Break through time: 480 min
Material tested:Butoject® (KCL 897 / Aldrich Z677647, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0,4 mm
Break through time: 30 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers.
customers. It should not be construed as offering an approval for any specific use scenario.

**Body Protection**
protective clothing

**Respiratory protection**
required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

**Control of environmental exposure**
No special precautionary measures necessary.

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**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

- **a) Appearance** Form: liquid
  Color: light yellow
- **b) Odor** unpleasant
- **c) Odor Threshold** No data available
- **d) pH** 11,0 - 12,0 at 117,2 g/l at 25 °C
- **e) Melting point/freezing point** Melting point/range: 24 °C - lit.
- **f) Initial boiling point and boiling range** 233 - 234 °C - lit.
- **g) Flash point** 102 °C - closed cup
- **h) Evaporation rate** No data available
- **i) Flammability (solid, gas)** No data available
- **j) Upper/lower flammability or explosive limits** No data available
- **k) Vapor pressure** 0,1 hPa at 20 °C
  1 hPa at 55 °C
  1 hPa at 81,7 °C
- **l) Vapor density** 4,69
- **m) Relative density** 1,015 g/mL at 25 °C
- **n) Water solubility** 117,2 g/l at 20 °C
- **o) Partition coefficient: n-octanol/water** log Pow: 1,56
- **p) Autoignition temperature** No data available
- **q) Decomposition temperature** No data available
9.2 Other safety information

r) Viscosity No data available
s) Explosive properties No data available
t) Oxidizing properties No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
Forms explosive mixtures with air on intense heating.
A range from approx. 15 Kelvin below the flash point is to be rated as critical.

10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Strong heating.

10.5 Incompatible materials
Strong oxidizing agents, Carbon dioxide (CO2)

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx)
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 270 mg/kg
Remarks: Behavioral:Convulsions or effect on seizure threshold. Lungs, Thorax, or Respiration:Dyspnea. Liver:Other changes.
LC50 Inhalation - Rat - 2 h - 430 mg/m3
Remarks: Behavioral:Altered sleep time (including change in righting reflex).
Behavioral:Muscle contraction or spasticity. Lungs, Thorax, or Respiration:Dyspnea.
LD50 Dermal - Rabbit - 270 mg/kg

Skin corrosion/irritation
Skin - Rabbit
Result: Mild skin irritation

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available
Carcinogenicity
IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: AM1400000

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Cyanosis, Mydriasis., Central nervous system depression, Coma., Seizures., Cushing's syndrome
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity
Toxicity to fish LC0 - Leuciscus idus (Golden orfe) - 50 mg/l - 48 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product
See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.
SECTION 14: Transport information

14.1 UN number
ADR/RID: 2470  IMGD: 2470  IATA: 2470

14.2 UN proper shipping name
ADR/RID: PHENYLACETONITRILE, LIQUID
IMDG: PHENYLACETONITRILE, LIQUID
IATA: Phenylacetonitrile, liquid

14.3 Transport hazard class(es)
ADR/RID: 6.1  IMGD: 6.1  IATA: 6.1

14.4 Packaging group
ADR/RID: III  IMGD: III  IATA: III

14.5 Environmental hazards
ADR/RID: no  IMGD Marine pollutant: no  IATA: no

14.6 Special precautions for user
No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)

15.2 Chemical Safety Assessment
For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.
H301  Toxic if swallowed.
H301 + H311  Toxic if swallowed or in contact with skin.
H311  Toxic in contact with skin.
H330  Fatal if inhaled.
**Further information**
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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