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

1.1 Product identifiers
   Product name: L-Proline
   Product Number: P4655
   Brand: Sigma
   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.: 147-85-3

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 BV
               Stationsplein 4
               3331 LL ZWIJNDRECHT
               NETHERLANDS
   Telephone: +31 78-620-5411
   Fax: +31 78-620-5421
   E-mail address: eurtechserv@sial.com

1.4 Emergency telephone number
   Emergency Phone #: 112

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008. This substance is not classified as dangerous according to Directive 67/548/EEC.

2.2 Label elements
   The product does not need to be labelled in accordance with EC directives or respective national laws.

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.

SECTION 3: Composition/information on ingredients

3.1 Substances
   Formula: C5H9NO2
   Molecular weight: 115.13 g/mol
   CAS-No.: 147-85-3
   EC-No.: 205-702-2

   No components need to be disclosed according to the applicable regulations.
SECTION 4: First aid measures

4.1 Description of first aid measures

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water.

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

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides, Nitrogen oxides (NOx)

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing vapours, mist or gas.
For personal protection see section 8.

6.2 Environmental precautions

No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Non Combustible Solids

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

Components with workplace control parameters

8.2 Exposure controls

Appropriate engineering controls
General industrial hygiene practice.

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).

**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 EU Directive 89/686/EEC and the standard EN 374 derived from it.

- **Full contact**
  - Material: Nitrile rubber
  - Minimum layer thickness: 0,11 mm
  - Break through time: 480 min
  - Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

- **Splash contact**
  - Material: Nitrile rubber
  - Minimum layer thickness: 0,11 mm
  - Break through time: 480 min
  - Material tested: Dermatril® (KCL 740 / Aldrich Z677272, 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 CE 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. It should not be construed as offering an approval for any specific use scenario.

**Body Protection**
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**
No special environmental precautions required.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- **Appearance**
  - Form: Crystalline powder
  - Colour: white

- **Odour**
  - odourless
c) Odour Threshold No data available
d) pH 6.0 - 7 at 115 g/l at 25 °C
e) Melting point/freezing point 228 °C
f) Initial boiling point and boiling range No data available
g) Flash point No data available
h) Evaporation rate No data available
i) Flammability (solid, gas) The product is not flammable.
   Flammability (solids) No data available
j) Upper/lower flammability or explosive limits No data available
k) Vapour pressure No data available
l) Vapour density No data available
m) Relative density No data available
n) Water solubility 115 g/l at 20 °C - completely soluble
o) Partition coefficient: n-octanol/water No data available
p) Auto-ignition temperature not auto-flammable
q) Decomposition temperature No data available
r) Viscosity No data available
s) Explosive properties No data available
t) Oxidizing properties No data available

9.2 Other safety information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
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 - > 5.110 mg/kg

**Skin corrosion/irritation**
No data available

**Serious eye damage/eye irritation**
No data available

**Respiratory or skin sensitisation**
No data available

**Germ cell mutagenicity**
No data available

**Ames test**
S. typhimurium
Result: negative

**Carcinogenicity**
IARC: No component 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**
Repeated dose toxicity - Rat - male - Oral - No observed adverse effect level - 2.772.9 mg/kg
Repeated dose toxicity - Rat - female - Oral - No observed adverse effect level - 3.009.3 mg/kg
RTECS: TW3584000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 **Toxicity**
No data available

Toxicity to daphnia and other aquatic invertebrates
EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h
(OECD Test Guideline 202)

12.2 **Persistence and degradability**
Biodegradability aerobic
Result: Readily biodegradable
(OECD Test Guideline 301)

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
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number
ADR/RID: -
IMDG: -
IATA: -

14.2 UN proper shipping name
ADR/RID: Not dangerous goods
IMDG: Not dangerous goods
IATA: Not dangerous goods

14.3 Transport hazard class(es)
ADR/RID: -
IMDG: -
IATA: -

14.4 Packaging group
ADR/RID: -
IMDG: -
IATA: -

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

14.6 Special precautions for user
No data available

SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
No data available

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

SECTION 16: Other information

Further information
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