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

1.1 Product identifiers

Product name: Valine
Product Number: V0030000
Brand: Sigma-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.: 72-18-4

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

1.4 Emergency telephone number

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

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

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: (CH3)2CHCH(NH2)CO2H
Molecular weight: 117.15 g/mol
CAS-No.: 72-18-4

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.
   - **In case of skin contact**
     Wash off with soap and plenty of water.
   - **In case of eye contact**
     Flush eyes with water as a precaution.
   - **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

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.

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. Wear protection from nuisance le (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

a) Appearance
   Form: crystalline
   Colour: white

b) Odour
   odourless

c) Odour Threshold
   No data available

d) pH
   No data available

e) Melting point/freezing point
   Melting point/range: 295 - 300 °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)
   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 88.5 g/l at 25 °C - completely soluble
o) Partition coefficient: n-octanol/water log Pow: -2.26 at 20 °C
p) Auto-ignition temperature No data available
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
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx)
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - female - > 2,000 mg/kg(L-Valine)
(OECD Test Guideline 423)
LC50 Inhalation - Rat - male and female - 4 h - > 5,260 mg/m3(L-Valine)
(OECD Test Guideline 403)
LD50 Intraperitoneal - Rat - 5,390 mg/kg(L-Valine)

Skin corrosion/irritation
Skin - Rabbit(L-Valine)
Result: No skin irritation - 4 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit(L-Valine)
Result: No eye irritation - 1 h
(OECD Test Guideline 405)

Respiratory or skin sensitisation
- Mouse(L-Valine)
Result: Does not cause skin sensitisation.  
(OECD Test Guideline 429)

**Germ cell mutagenicity**

Mouse (L-Valine)  
lymphocyte  
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 (L-Valine)

**Specific target organ toxicity - single exposure**  
No data available (L-Valine)

**Specific target organ toxicity - repeated exposure**  
No data available

**Aspiration hazard**  
No data available (L-Valine)

**Additional Information**

Repeated dose toxicity - Rat - female - Oral - No observed adverse effect level - 666 mg/kg (L-Valine)  
RTECS: Not available

The levorotary (l) forms of leucine, isoleucine, and valine have been found to have tumor-promoting activity for bladder carcinomas. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (L-Valine)

**SECTION 12: Ecological information**

### 12.1 Toxicity

Toxicity to fish  
semi-static test LC50 - Danio rerio (zebra fish) - > 10 g/l - 96 h (L-Valine)  
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates  
Immobilization EC50 - Daphnia magna (Water flea) - > 10 g/l - 24 h (L-Valine)  
(OECD Test Guideline 202)

### 12.2 Persistence and degradability

Biodegradability  
aerobic - Exposure time 28 d (L-Valine)  
Result: 82 % - Readily biodegradable  
(OECD Test Guideline 301F)

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available (L-Valine)

### 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: IMDG: IATA:

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

14.4 Packaging group
ADR/RID: IMDG: IATA:

14.5 Environmental hazards
ADR/RID: IMDG Marine pollutant: IATA:

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

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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