

SAFETY DATA SHEET

1. PRODUCT

1.1 Product identifiers

Name: Valproic acid

CAS-No.: 99-66-1

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

Identified uses : Laboratory chemicals, Synthesis of substances

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4), H302

Skin irritation (Category 2), H315

Eye irritation (Category 2A), H319

Reproductive toxicity (Category 1A), H360

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

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

2.2 GHS Label elements, including precautionary statements

| | |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pictogram | |
| Signal word | Danger |
| Hazard statement(s) | H302 Harmful if swallowed. H315 Causes skin irritation. H319 Causes serious eye irritation. H335 May cause respiratory irritation. H360 May damage fertility or the unborn child. |
| Precautionary statement(s) | P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. P264 Wash skin thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. P302 + P352 IF ON SKIN: Wash with plenty of soap and water. P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308 + P313 IF exposed or concerned: Get medical advice/ attention. P332 + P313 If skin irritation occurs: Get medical advice/ attention. P337 + P313 If eye irritation persists: Get medical advice/ attention. P362 Take off contaminated clothing and wash before reuse. P403 + P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up. P501 Dispose of contents/ container to an approved waste disposal plant. |

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula: $C_8H_{16}O_2$
Molecular weight: 144.21 g/mol
CAS-No.: 99-66-1
EC-No.: 202-777-3

Hazardous components

| Component | Classification | Concentration |
|---------------|-----------------------------------------------------------------------------------------------|---------------|
| Valproic acid | Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; Repr. 1A; STOT SE 3; H302, H315, H319, H335, H360 | <= 100 % |

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

4. FIRST AID MEASURES

4.1 Description of first aid measures

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| General advice |
| Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area. |
| If inhaled |
| If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician. |
| In case of skin contact |
| Wash off with soap and plenty of water. Consult a physician. |
| In case of eye contact |
| Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. |
| If swallowed |
| Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician. |

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

4.2 Indication of any immediate medical attention and special treatment needed

No data available

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

No data available

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

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.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Hazardous components without workplace control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Hazardous components without workplace control parameters

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

| | |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eye/face protection | Face shield and safety glasses 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. |
| Body Protection | Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. |
| Respiratory protection | Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). |
| Control of environmental exposure | Prevent further leakage or spillage if safe to do so. Do not let product enter drains. |

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

| | |
|----------------------------------------------|-----------------------------------------|
| Appearance | Form: liquid |
| Odour | No data available |
| Odour Threshold | No data available |
| pH | No data available |
| Melting point/freezing point | No data available |
| Initial boiling point and boiling range | 220 °C (428 °F) at 1,013 hPa (760 mmHg) |
| Flash point | 111 °C (232 °F) - closed cup |
| Evaporation rate | No data available |
| Flammability (solid, gas) | No data available |
| Upper/lower flammability or explosive limits | No data available |
| Vapour pressure | No data available |
| Vapour density | No data available |
| Relative density | 0.907 g/cm ³ |
| Water solubility | 2 g/l - slightly soluble |
| Partition coefficient: n-octanol/water | log Pow: 2.75 |
| Auto-ignition temperature | No data available |
| Decomposition temperature | No data available |
| Viscosity | No data available |
| Explosive properties | No data available |
| Oxidizing properties | No data available |

9.2 Other safety information

No data available

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

Bases, Oxidizing agents, Reducing agents

10.6 Hazardous decomposition products

Other decomposition products - No data available

Hazardous decomposition products formed under fire conditions. - Carbon oxides

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

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| Acute toxicity |
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| LD50 Oral - Rat - 670 mg/kg Remarks: Behavioral:Somnolence (general depressed activity). Diarrhoea Dermal: No data available No data available |
| Skin corrosion/irritation |
| No data available |
| Serious eye damage/eye irritation |
| No data available |
| Respiratory or skin sensitisation |
| No data available |
| Germ cell mutagenicity |
| 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. NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. |
| Reproductive toxicity |
| Reproductive toxicity - Rabbit - Oral Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Specific Developmental Abnormalities: Central nervous system. Reproductive toxicity - Rat - Oral Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count). Paternal Effects: Testes, epididymis, sperm duct. Paternal Effects: Prostate, seminal vesicle, Cowper's gland, accessory glands. Reproductive toxicity - Rat - Oral Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Reproductive toxicity - Rat - Oral Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive). Effects on Newborn: Growth statistics (e.g., reduced weight gain). Reproductive toxicity - Mouse - Intraperitoneal Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetal death. Known human reproductive toxicant Developmental Toxicity - Rabbit - Oral Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Developmental Toxicity - Rabbit - Oral Specific Developmental Abnormalities: Musculoskeletal system. Specific Developmental Abnormalities: Cardiovascular (circulatory) system. Developmental Toxicity - Mouse - Subcutaneous Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Fetal death. Specific Developmental Abnormalities: Central nervous system. Developmental Toxicity - Mouse - Intraperitoneal Specific Developmental Abnormalities: Central nervous system. Developmental Toxicity - Rat - Oral Specific Developmental Abnormalities: Central nervous system. Developmental Toxicity - Rat - Oral Specific Developmental Abnormalities: Musculoskeletal system. Specific Developmental Abnormalities: Cardiovascular (circulatory) system. Specific Developmental Abnormalities: Urogenital system. Developmental Toxicity - Human - female - Oral Specific Developmental Abnormalities: Craniofacial (including nose and tongue). Specific Developmental Abnormalities: Musculoskeletal system. Specific Developmental Abnormalities: Cardiovascular (circulatory) system. Developmental Toxicity - Human - female - Oral Specific Developmental Abnormalities: Central nervous system. Developmental Toxicity - Human - female - Unreported Specific Developmental Abnormalities: Musculoskeletal system. |
| Specific target organ toxicity -single exposure |
| Inhalation - May cause respiratory irritation. |
| Specific target organ toxicity -repeated exposure |
| No data available |
| Aspiration hazard |
| No data available |
| Additional Information |
| RTECS: Not available burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting Stomach - Irregularities - Based on Human Evidence Stomach - Irregularities - Based on Human Evidence |

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No data available

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

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

| Product |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. |
| Contaminated packaging |
| Dispose of as unused product. |

14. TRANSPORT INFORMATION

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

| Component | CAS-No. | Revision Date |
|---------------|---------|---------------|
| Valproic acid | 99-66-1 | 1993-04-24 |

Pennsylvania Right To Know Components

| Component | CAS-No. | Revision Date |
|-----------|---------|---------------|
|-----------|---------|---------------|

| | | |
|---------------|---------|------------|
| Valproic acid | 99-66-1 | 1993-04-24 |
|---------------|---------|------------|

New Jersey Right To Know Components

| Component | CAS-No. | Revision Date |
|---------------|---------|---------------|
| Valproic acid | 99-66-1 | 1993-04-24 |

California Prop. 65 Components

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

| Component | CAS-No. | Revision Date |
|---------------|---------|---------------|
| Valproic acid | 99-66-1 | 2007-09-28 |

16. OTHER INFORMATION

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

Acute Tox. Acute toxicity

Eye Irrit. Eye irritation

H302 Harmful if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H360 May damage fertility or the unborn child.

Repr. Reproductive toxicity

Skin Irrit. Skin irritation

HMIS Rating

Health hazard: 2

Chronic Health Hazard: *

Flammability: 1

Physical Hazard 0

NFPA Rating

Health hazard: 2

Fire Hazard: 1

Reactivity Hazard: 0