



VALPROIC ACID (1,2,3,3'-13C4, 99%)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 21/01/2011

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Version: 2.0

CLM-3399

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

1.1. Product identifier

Product form : Substance
Substance name : VALPROIC ACID (1,2,3,3'-13C4, 99%)
EC No : 202-777-3 (Unlabeled)
CAS No : 99-66-1 (Unlabeled)
Product code : CLM-3399
Formula : C⁴C⁴H¹⁶O²
Synonyms : 2-Propylpentanoic acid

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

1.2.1. Relevant identified uses

Main use category : Professional use
Industrial/Professional use spec : For professional use only

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.
50 Frontage Road
Andover, MA 01810
USA

USA: 1-800-322-1174 Int: 1-978-749-8000

cilsales@isotope.com www.isotope.com

Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)

International: 1-703-741-5970 (24 hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute Tox. 4 (Oral) H302
Skin Irrit. 2 H315
Eye Irrit. 2 H319
Repr. 1A H360
STOT SE 3 H335

Full text of hazard classes and H-statements : see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Xn; R22
Xi; R36/37/38
Repr.Cat.1; R60
Repr.Cat.1; R61

Full text of R-phrases: see section 16

GHS-US classification

Acute Tox. 4 (Oral) H302
Skin Irrit. 2 H315
Eye Irrit. 2A H319
Repr. 1A H360
STOT SE 3 H335

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

Liver, Nerves, Blood.

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2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS08

GHS07

Signal word (CLP) :

: Danger

Hazard statements (CLP) :

: H302 - Harmful if swallowed
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H360 - May damage the unborn child (if inhaled, if swallowed, in contact with skin)

Precautionary statements (CLP) :

: P261 - Avoid breathing mist, spray
P264 - Wash both hands 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 eye protection, face protection, protective clothing, protective gloves
P301+P312 - IF SWALLOWED: Call a doctor if you feel unwell
P302+P352 - IF ON SKIN: Wash with plenty of water
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS08

GHS07

Signal word (GHS-US) :

: Danger

Hazard statements (GHS-US) :

: H302 - Harmful if swallowed
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H360 - Respiratory tract (Dermal, Inhalation, oral)

Precautionary statements (GHS-US) :

: P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P261 - Avoid breathing mist, spray
P264 - Wash Both hands 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 eye protection, face protection, protective clothing, protective gloves
P301+P312 - If swallowed: Call a poison center/doctor/... if you feel unwell
P302+P352 - If on skin: Wash with plenty of water/...
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
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
P312 - Call a poison center/doctor/... if you feel unwell
P321 - Specific treatment (see Hazard pictograms (CLP) on this label)
P330 - Rinse mouth
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 Comply with applicable regulations

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

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Name	Product identifier	%	Classification according to Directive 67/548/EEC
VALPROIC ACID (1,2,3,3'-13C4, 99%)	(CAS No) 99-66-1 (Unlabeled) (EC No) 202-777-3 (Unlabeled)	100	Xn; R22 Xi; R36/37/38 Repr.Cat.1; R60 Repr.Cat.1; R61

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
VALPROIC ACID (1,2,3,3'-13C4, 99%)	(CAS No) 99-66-1 (Unlabeled) (EC No) 202-777-3 (Unlabeled)	100	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Repr. 1A, H360 STOT SE 3, H335

Full text of R- and H-statements: see section 16

Name	Product identifier	%	GHS-US classification
VALPROIC ACID (1,2,3,3'-13C4, 99%) (Main constituent)	(CAS No) 99-66-1 (Unlabeled)	100	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Repr. 1A, H360 STOT SE 3, H335

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Move out of dangerous area. Consult a physician and show this safety data sheet.
First-aid measures after inhalation	: If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
First-aid measures after skin contact	: Wash with soap and plenty of water. Consult a physician.
First-aid measures after eye contact	: Flush eye with water for 15 minutes. Get medical attention.
First-aid measures after ingestion	: 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

Symptoms/injuries after inhalation	: May be harmful if inhaled. May cause respiratory tract irritation.
Symptoms/injuries after skin contact	: May be harmful if absorbed through the skin. Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.
Symptoms/injuries after ingestion	: Harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.
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5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Firefighting instructions	: Wear self contained breathing apparatus for fire fighting if necessary.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures	: Use personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe area.
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6.1.2. For emergency responders

No additional information available

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6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up

For containment : 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

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep container tightly closed in a cool, dry and well-ventilated place.
Storage conditions : Store at room temperature away from light and moisture.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Personal protective equipment : Safety glasses. Gloves. Protective clothing. Self-contained breathing apparatus.



Hand protection : Wear suitable protective clothing and gloves.
Eye protection : Wear safety glasses with side shields (or goggles) and a face shield.
Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respiratory protection : When appropriate, use NIOSH/CEN approved respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Appearance : Liquid.
Molecular mass : 148.18 g/mol (Labeled)
Colour : Colourless.
Odour : No data available
Odour threshold : No data available
pH : No data available
Relative evaporation rate (butylacetate=1) : No data available
Melting point : No data available
Freezing point : No data available
Boiling point : 220 °C (428 °F)
Flash point : 111 °C (232 °F) - closed cup
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapour pressure : No data available
Relative vapour density at 20 °C : No data available
Relative density : No data available
Density : 0.9 g/ml at 25 °C (77 °F)
Solubility : Water: 2 g/l - slightly soluble

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Log Pow	: 2.75
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable if stored under recommended conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

Bases, Oxidizing agents, Reducing agents.

10.6. Hazardous decomposition products

Formed under fire conditions: Carbon oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

VALPROIC ACID (1,2,3,3'-13C4, 99%) (99-66-1 (Unlabeled))	
LD50 oral rat	670 mg/kg Remarks: Behavioral:Somnolence (general depressed activity). Diarrhoea
ATE CLP (oral)	670.000 mg/kg bodyweight

Skin corrosion/irritation	: Causes skin irritation. No data available
Serious eye damage/irritation	: Causes serious eye irritation. No data available
Respiratory or skin sensitisation	: Not available No data available
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

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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: 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. 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. Specific Developmental Abnormalities: Central nervous system. Developmental Toxicity - Human - female - Unreported. Specific Developmental Abnormalities: Musculoskeletal system.
STOT-single exposure	: May cause respiratory irritation.
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Burning sensation. Cough. Laryngitis. Wheezing. Shortness of breath. Headache. Nausea. Vomiting. Stomach - Irregularities - Based on Human Evidence. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Symptoms/injuries after inhalation	: May be harmful if inhaled. May cause respiratory tract irritation.
Symptoms/injuries after skin contact	: May be harmful if absorbed through the skin. Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.
Symptoms/injuries after ingestion	: Harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

VALPROIC ACID (1,2,3,3'-13C4, 99%) (99-66-1 (Unlabeled))

Persistence and degradability	Not available.
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12.3. Bioaccumulative potential

VALPROIC ACID (1,2,3,3'-13C4, 99%) (99-66-1 (Unlabeled))

Log Pow	2.75
Bioaccumulative potential	Not available.

12.4. Mobility in soil

VALPROIC ACID (1,2,3,3'-13C4, 99%) (99-66-1 (Unlabeled))

Ecology - soil	Not available.
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12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Other adverse effects : Not available.

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

- Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and Local environmental control regulations.
- Product/Packaging disposal recommendations: : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
- Ecology - waste materials : Dispose of as unused product.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Additional information

- Other information : No supplementary information available.
- Special transport precautions : DOT/IMDG/IATA: Not dangerous goods.

Overland transport

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

14.4. Environmental hazards

- Other information : No supplementary information available.

14.5. Special precautions for user

- Special transport precautions : DOT/IMDG/IATA: Not dangerous goods.

14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

VALPROIC ACID (1,2,3,3'-13C4, 99%) (99-66-1 (Unlabeled))

SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
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15.2. International regulations

CANADA

VALPROIC ACID (1,2,3,3'-13C4, 99%) (99-66-1 (Unlabeled))

Listed on the Canadian DSL (Domestic Substances List)

15.2.1. National regulations

No additional information available

15.3. US State regulations

VALPROIC ACID (1,2,3,3'-13C4, 99%)(99-66-1 (Unlabeled))

U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No

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VALPROIC ACID (1,2,3,3'-13C4, 99%)(99-66-1 (Unlabeled))	
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List WARNING! This product contains a chemical known by the state of California to cause birth defects or other reproductive harm.

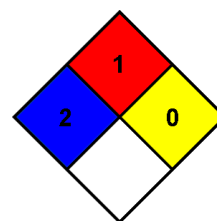
SECTION 16: Other information

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

Full text of R-, H- and EUH-statements:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Repr. 1A	Reproductive toxicity, Category 1A
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract 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
R22	Harmful if swallowed
R36/37/38	Irritating to eyes, respiratory system and skin
R60	May impair fertility
R61	May cause harm to the unborn child
Xi	Irritant
Xn	Harmful

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.
NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.
NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur
Flammability : 1 Slight Hazard
Physical : 0 Minimal Hazard

CIL Multi-Solvent Mixture SDS

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product