SAFETY DATA SHEET

Classified in accordance 29 CFR 1910.1200

1. Identification

Product identifier: MetAMINO®
DL-Methionine Feed Grade 99%
Chemical name:
DL-Methionine, Feed Grade 99%

Other means of identification
CAS Number: 59-51-8

Recommended restrictions
Recommended use: Feed additive
Restrictions on use: Not known.

Manufacturer/Importer/Distributor Information

Company Name	:	Evonik Corporation Nutrition & Care PO Box 34628 Richmond, VA 23234 USA
Telephone	:	+1 804 727 0700
Fax	:	+1 804 727 0845
E-mail	:	product-regulatory-services@evonik.com

Emergency telephone number:

24-Hour Health Emergency	:	+1 800 424 9300 (CHEMTREC - US & CANADA) 800 681 9531 (CHEMTREC MEXICO) +1 703 527 3887 (CHEMTREC WORLD)

2. Hazard(s) identification

Hazard Classification

OSHA hazard(s)
Combustible dust

Label Elements

Hazard Symbol: No symbol

Signal Word: No signal word.

Hazard Statement: Not applicable

Precautionary Statements No labeling is required under Regulation 29 CFR 1910.1200 (US GHS).

Hazard(s) not otherwise classified (HNOC): None.

3. Composition/information on ingredients

Chemical name:
DL-Methionine, Feed Grade 99%

Substances

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
DL-Methionine		59-51-8	>=99%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Composition Comments: The components are not hazardous or are below required disclosure limits.

The exact concentration has been withheld as a trade secret.

4. First-aid measures

Description of necessary first-aid measures

General information: Pay attention to self-protection. Remove victims from hazardous area. Immediately remove soiled or soaked clothing and remove it to a safe distance. Keep victim warm, in a stabilized position and covered. Do not leave the victim unattended. Place patients who are unconscious but breathing in the stabilized lateral position.

Inhalation: Inhalation is possible if aerosols, mists, dusts, or smoke form. Move to fresh air. With labored breathing: Provide with oxygen. Consult a doctor immediately. If the casualty is not breathing: Perform mouth-to-mouth resuscitation, notify emergency physician immediately.

Skin Contact: Wash off affected area immediately with plenty of water for at least 15 minutes. Get medical attention if any discomfort continues.

Eye contact: With eye held open, thoroughly rinse immediately with plenty of water for at least 10 minutes. In case of persistent discomfort: Consult an ophthalmologist.

Ingestion: Rinse mouth. Immediately give large quantities of water to drink. Seek medical advice.

Personal Protection for First-aid Responders: No data available.

Most important symptoms and effects, both acute and delayed

Symptoms: None known.

Hazards: Other dangerous properties can not be excluded.

Indication of immediate medical attention and special treatment needed

Treatment: This substance does not have any noteworthy noxious potential. Damage to health is thus not expected.

5. Fire-fighting measures

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Water. Foam. Water fog.

Unsuitable extinguishing media: Carbon Dioxide.

Special hazards arising from the substance or mixture: May be released in case of fire: hydrocyanic acid, flammable smouldering gases, NOX. Oxides of Sulfur. Carbon Monoxide. Carbon Dioxide.

Special protective equipment and precautions for fire-fighters

Special fire-fighting procedures: Contaminated fire-extinguishing water must be disposed of in accordance with the regulations issued by the appropriate local authorities. Fire residues should be disposed of in accordance with the regulations.

Special protective equipment for fire-fighters: In the event of fire, wear self-contained breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Keep unauthorized personnel away.

Accidental release measures: No data available.

Methods and material for containment and cleaning up: Absorb mechanically avoiding production of dust.

Environmental Precautions: Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil.

7. Handling and storage

Handling

Technical measures (e.g. Local and general ventilation): Use process enclosures, local exhaust ventilation or other engineering controls to control airborne exposure. Take precautionary measures against static discharges.

Safe handling advice: Handle in accordance with good industrial hygiene and safety practice. If there is the possibility of skin/eye contact, the indicated hand/eye/body protection should be used.

Contact avoidance measures: No data available.

Storage

Safe storage conditions: Store in a cool and shaded area. Keep containers dry and tightly closed to avoid moisture absorption and contamination.Take precautionary measures against static charges, keep away from sources of ignition. Avoid dust formation. COMBUSTIBLE.

Safe packaging materials: No data available.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

None of the components have assigned exposure limits.

Biological Limit Values

No biological exposure limits noted for the ingredient(s).

Appropriate Engineering Controls Use process enclosures, local exhaust ventilation or other engineering controls to control airborne exposure. Take precautionary measures against static discharges.

Individual protection measures, such as personal protective equipment

Eye/face protection: Safety glasses with side shields If dust occurs: basket-shaped glasses

Skin Protection

Hand Protection: Material: Nitrile.
Break-through time: 8 h
Guideline: DIN EN 374Material: Natural rubber.
Break-through time: 8 h
Guideline: DIN EN 374Additional Information: The above mentioned hand protection is based on knowledge of the chemistry and anticipated uses of this product but it may not be appropriate for all workplaces. A hazard assessment should be conducted prior to use to ensure suitability of gloves for specific work environments and processes prior to use.

Skin and Body Protection: No special protective equipment required.

Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.

Hygiene measures:	Wash face and/or hands before break and end of work. Cleanse and apply cream to skin after work.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Physical state:	solid
Form:	solid
Color:	white to light brown
Odor:	Characteristic
Odor Threshold:	< 1 ppb
Melting Point:	538 °F/281 °C Decomposition Literature
Boiling Point:	Not applicable
Flammability:	Not classified as a flammability hazard

Upper/lower limit on flammability or explosive limits

Explosive limit - upper:	No data available.
Explosive limit - lower:	Dust (VDI 2263) 30 g/m3
Flash Point:	Not applicable
Autoignition Temperature:	> 302 °F/> 150 °C (VDI 2263) in 8l wire basket
Decomposition Temperature:	419 °F/215 °C (TG (thermal gravimetric analysis))
pH:	5.6 - 6.1 (10 g/l, 25 °C) Literature

Viscosity

Dynamic viscosity:	Not applicable
Kinematic viscosity:	No data available.
Flow Time:	No data available.

Solubility(ies)

Solubility in Water:	33.5 g/l (77 °F/25 °C) Literature
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	-1.87 Literature
Vapor pressure:	< 0.0000001 hPa (calculated) Modified Grain Method
Relative density:	No data available.
Density:	No data available.
Bulk density:	No data available.
Vapor density (air=1):	No data available.

Other information

Explosive properties:	The product is susceptible to dust explosion.
Oxidizing properties:	Not to be expected in view of the structure
Burning Rate:	1,200 s
Burning Number:	Burning Number: 5 VDI 2263 BZ 5 - burns out with flames or shower of sparks.
Minimum ignition temperature:	626 °F/330 °C (VDI 2263) (BAM-furnace) Standard commercial product with characteristic grain size distribution is normally flammable.
Minimum Exposable Concentration (MEC):	30 g/m3
Dust explosion properties:	ST-1

Dust Explosion Description Number Kst:	85 m.b_/s
Minimum ignition energy:	> 10 mJ (VDI 2263) sieve fraction without inductance

10. Stability and reactivity

Reactivity:	No data available.
Chemical Stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions:	Dust may form explosive mixture with air.
Conditions to avoid:	See chapter Conditions for safe storage, including any incompatibilities
Incompatible Materials:	No further information available
Hazardous Decomposition Products:	No further information available

11. Toxicological information

General information: gastro-intestinal symptoms: nausea, vomiting Side-effects were observed in the event of higher dosage (10 g)

Information on toxicological effects

Information on likely routes of exposure

Inhalation:	Relevant route of exposure. Information on effects are given below.
Skin Contact:	Relevant route of exposure. Information on effects are given below.
Eye contact:	Relevant route of exposure. Information on effects are given below.
Ingestion:	If handled correctly, not a relevant route of exposure. Information on effects are given below.

Acute toxicity (list all possible routes of exposure)

Oral
Product: LD 50 (Rat): > 10,000 mg/kg (Literature) Not toxic after single exposure;

Dermal
Product: Not classified for acute toxicity based on available data.

Inhalation
Product: LC 0 (Rat, Female, Male, 4 h): > 5.25 mg/l Not toxic after single exposure; Not classified for acute toxicity based on available data.

Repeated dose toxicity
Product: NOAEL (Rat(Male), Oral): 1,253 mg/kg
NOAEL (Rat(female), Oral): 1,423 mg/kg

Skin Corrosion/Irritation
Product: Not irritating OECD 404 (Rabbit, 4 h): Not irritating;

Serious Eye Damage/Eye Irritation
Product: Not irritating Rabbit:

Respiratory or Skin Sensitization
Product: Buehler Test, OECD 406 (Guinea Pig): Not a skin sensitizer.

Carcinogenicity
Product: No data available.
Components:
DL-Methionine Not classified

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogens present or none present in regulated quantities

ACGIH: US.ACGIH Threshold Limit Values:
No carcinogens present or none present in regulated quantities

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogens present or none present in regulated quantities

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended:
No carcinogens present or none present in regulated quantities

Germ Cell Mutagenicity

In vitro
Product: (Literature)no evidence of mutagenic effects;
Ames test (OECD 471): negative;

In vivo
Product: No data available.

Reproductive toxicity
Product: No data available.
Components:
DL-Methionine Not classified

Specific Target Organ Toxicity - Single Exposure
Product: No data available.
Components:
DL-Methionine Not classified

Specific Target Organ Toxicity - Repeated Exposure
Product: No data available.
Components:
DL-Methionine Not classified

Aspiration Hazard
Product: No data available.
Components:
DL-Methionine Not applicable

Information on health hazards

Other hazards
Product: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: LC 50 (Brachydanio rerio (zebrafish), 96 h): > 3,200 mg/l
NOEC (Brachydanio rerio (zebrafish), 96 h): 3,200 mg/l

Aquatic Invertebrates

Product: EC 50 (Daphnia magna, 48 h): 324 mg/l
NOEC (Daphnia magna, 48 h): 220 mg/l

Toxicity to Aquatic Plants

Product: EC 50 (Desmodesmus subspicatus (green algae), 72 h): > 1,000 mg/l (OECD 201) Biomass
EC 50 (Desmodesmus subspicatus (green algae), 72 h): > 1,000 mg/l (OECD 201) growth rate

Toxicity to microorganisms

Product: EC 10 (Pseudomonas putida, 18 h): 2,000 mg/l (UBA method)

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Toxicity to microorganisms

Product: EC 10 (Pseudomonas putida, 18 h): 2,000 mg/l (UBA method)

Persistence and Degradability

Biodegradation

Product: No data available.

Components:

DL-Methionine The product is easily biodegradable.

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: low log Pow: see chapter 9

Partition Coefficient n-octanol / water (log Kow)

Product: Log Kow: -1.87 Literature

Mobility in soil:

Product No data available.

Results of PBT and vPvB assessment:

Product No data available.

Other adverse effects:

Other hazards
Product: No further information available

Additional Information: No data available.

13. Disposal considerations

Disposal methods: Waste must be disposed of in accordance with federal, provincial and local regulations.

Contaminated Packaging: Do not reuse empty containers and dispose of in accordance with the regulations issued by the appropriate local authorities. Packaging material should be recycled or disposed of in accordance with federal, state and local regulations.

14. Transport information

Domestic regulation

49 CFR
Not regulated as a dangerous good
Remarks : Not dangerous according to transport regulations.

International Regulations

UNRTDG
Not regulated as a dangerous good

IATA-DGR
Not regulated as a dangerous good

IMDG-Code
Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
None present or none present in regulated quantities.

US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)
None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):
None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Combustible dust

US. EPCRA (SARA Title III) Section 304 Extremely Hazardous Substances Reporting Quantities and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substances

None present or none present in regulated quantities.

US. EPCRA (SARA Title III Section 313 Toxic Chemical Release Inventory (TRI) Reporting

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None present or none present in regulated quantities.

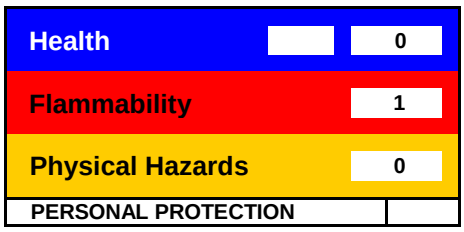
Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65
No ingredient requiring a warning under CA Prop 65.

16.Other information, including date of preparation or last revision

HMIS Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

Issue Date: 05/15/2019

Version #: 1.2

Further Information: No data available.

Revision Information Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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