

# MATERIAL SAFETY DATA SHEET

**Liquimeth®**



|               |        |               |            |
|---------------|--------|---------------|------------|
| Material no.  |        | Version       | 1.27 / US  |
| Specification | 101613 | Revision date | 02/19/2015 |
| Order Number  |        | Print Date    | 03/20/2015 |
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## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

For Research and Development Use Only

### Product information

Trade name : Liquimeth®  
Use of the Substance / Preparation : Feed additive  
Company : Evonik Corporation USA  
299 Jefferson Road  
Parsippany, NJ 07054-0677  
USA  
  
Telephone : 973-929-8000  
Telefax : 973-929-8040  
  
US: CHEMTREC EMERGENCY NUMBER : 800-424-9300  
  
CANADA: CANUTEC EMERGENCY NUMBER : 613-996-6666  
Product Regulatory Services : 973-929-8060

## 2. HAZARDS IDENTIFICATION

### \*\*\* EMERGENCY OVERVIEW \*\*\*

*Form-liquid Color-yellow Odor-characteristic*

Irritating to eyes.  
Possible discomfort: irritation of mucous lining (nose, throat, eyes)

### POTENTIAL HEALTH EFFECTS

#### Eye contact

irritating

#### Skin Contact

No hazard expected in normal use.

#### Inhalation

Possibly irritating.

#### Ingestion

Possibly irritating.

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## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Chemical nature

aqueous solution  
Concentration 45.9 %

### Information on ingredients / Hazardous components

|                      |            |                  |
|----------------------|------------|------------------|
| Sodium DL-methionate |            |                  |
| CAS-No.              | 41863-30-3 | Percent (Wt/ Wt) |

### Other information

This material is classified as hazardous under OSHA regulations.  
This product is intended for FDA regulated uses only.

## 4. FIRST AID MEASURES

### General advice

Remove contaminated or saturated clothing.

### Inhalation

If aerosol or mists are formed  
Possible discomfort: irritation of mucous lining (nose, throat, eyes)  
cough, sneezing, flow of tears  
Move victims into fresh air.  
If symptoms persist, call a physician.

### Skin contact

Wash off immediately with plenty of water.  
If symptoms persist, call a physician.

### Eye contact

Rinse thoroughly immediately with plenty of water for at least 10 minutes keeping eyelid open. Continue rinsing process with eye rinsing solution. Protect uninjured eye. Immediate further treatment in ophthalmic hospital/ by ophthalmologist.

### Ingestion

Have the mouth rinsed with water.  
Have patient drink plenty of water in small sips.  
Consult a physician.

### Notes to physician

Specific therapy/antidote treatment: none known  
If required, therapy of irritative effect.  
If substance has been swallowed:  
Early endoscopy in order to assess mucosa lesions in the oesophagus and stomach which may appear. If necessary, aspirate leftover substance.

## 5. FIRE-FIGHTING MEASURES

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|                       |                                    |
|-----------------------|------------------------------------|
| Flash point           | not relevant, since based on water |
| Lower explosion limit | not relevant, since based on water |
| Upper explosion limit | not relevant, since based on water |

## Suitable extinguishing media

Water, Foam

## Extinguishing media which must not be used for safety reasons

None known

## Specific hazards during fire fighting

May be released in case of fire: hydrocyanic acid, flammable smouldering gases, NOX. sulphur oxides, carbon monoxide, carbon dioxide. In the event of fire and/or explosion do not breathe fumes.

## Special protective equipment for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

## Further information

Water used to extinguish fire should not enter drainage systems, soil or stretches of water. Ensure there are sufficient retaining facilities for water used to extinguish fire.

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

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## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions

Wear personal protective equipment.

Keep unauthorized persons away.

### Environmental precautions

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

### Methods for cleaning up

Neutralize with: diluted acid.

Absorb with liquid-binding material e.g. inert absorbent

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## 7. HANDLING AND STORAGE

### Handling

#### Safe handling advice

Handle in accordance with good industrial hygiene and safety practice.

Wear personal protective equipment.

#### Advice on protection against fire and explosion

Standard procedure for chemical fires.

The product itself does not burn.

Ensure there are sufficient retaining facilities for water used to extinguish fire.

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## Storage

### Requirements for storage areas and containers

Store in a cool and shaded area.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Remarks No substance-specific limiting value being known.

### Engineering measures

Use process enclosures, local exhaust ventilation or other engineering controls to control airborne exposure.

### Personal protective equipment

#### 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.

#### Hand protection

|                    |  |
|--------------------|--|
| Glove material     | Nitrile, for example: Dermatril 740, Kächele-Cama Latex GmbH (KCL), Germany              |
| Material thickness | 0.11 mm  |
| Break through time | > 480 min  |
| Method             | DIN EN 374   |
| Glove material     | Natural rubber (NR), for example: Cama Clean 708, Kächele-Cama Latex GmbH (KCL), Germany |
| Material thickness | 0.5 mm   |
| Break through time | > 480 min  |
| Method             | DIN EN 374   |

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.

#### Eye protection

wear basket-shaped glasses or safety goggles with side-shields.

#### Skin and body protection

No special protective equipment required.

When handling larger quantities:

chemical protective suit or disposable protective suit, alkali-resistant

Immediately change moistened and saturated work clothes.

Apply adequate skin protection agents before handling the product. Assure skin cleaning and skin care after work. Preventive skin protection is recommended.

#### Hygiene measures

Do not eat, drink, smoke, or sniff while at work. Wash your hands and/or face before breaks and before termination of work.

#### Protective measures

Handle in accordance with good industrial hygiene and safety practice.

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Avoid contact with skin, eyes and clothing.

If there is the possibility of skin/eye contact, the indicated hand/eye/body protection should be used.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

|                |                |
|----------------|----------------|
| Form           | liquid         |
| Color          | yellow         |
| Odor           | characteristic |
| physical state | liquid         |

### Safety data

|                                       |   |
|---------------------------------------|---|
| pH                                    | 12.2 - 12.7   |
| Melting point/range                   | not determined  |
| Boiling point/range                   | 105 °C  |
| Flash point                           | not relevant, since based on water                    |
| Flammability                          | not to be expected, given the composition employed    |
| Explosiveness                         | not to be expected, given the composition employed    |
| Lower explosion limit                 | not relevant, since based on water                    |
| Upper explosion limit                 | not relevant, since based on water                    |
| Vapor pressure                        | not determined  |
| Relative density                      | 1.2 (20 °C)   |
| Water solubility                      | completely soluble                                    |
| Partition coefficient n-octanol/water | log Pow: -1.87<br>Related to substance: DL-Methionine |
| Viscosity, dynamic                    | 12.5 - 15 mPa.s (20 °C)                               |
| Vapour density                        | No data available                                     |

## 10. STABILITY AND REACTIVITY

|                                  |  |
|----------------------------------|--|
| Conditions to avoid              | See chapter<br>7.2. Conditions for safe storage, including any incompatibilities |
| Materials to avoid               | Acids, strong oxidants   |
| Hazardous decomposition products | No hazardous decomposition products known.                                       |

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|                       |  |
|-----------------------|--|
| Thermal decomposition | > 250 °C<br>TG (thermal gravimetric analysis)  |
| Hazardous reactions   | Reacts vigorously with strong acids producing heat; reaction with acid produces DL-Methionine. |

**11. TOXICOLOGICAL INFORMATION**

|                                   |  |
|-----------------------------------|--|
| Product Acute oral toxicity       | NOEL Rat: 6132 mg/kg   |
| Product Acute inhalation toxicity | no data available  |
| Product Acute dermal toxicity     | no data available  |
| Product Skin irritation           | Rabbit<br>No skin irritation<br>Method: OECD Test Guideline 404  |
| Product Eye irritation            | Rabbit<br>Irritating to eyes.<br>Method: OECD Test Guideline 405   |
| Product Sensitization             | Buehler Test guinea pig: Does not cause skin sensitisation.<br>Method: OECD Test Guideline 406<br>Test substance: DL-Methionine  |
| Product Repeated dose toxicity    | Oral Rat<br>Testing period: 9 month<br>NOAEL: 700 mg/kg<br>Method: literature<br>Test substance: DL-Methionine<br>Reversible effects during the application period on liver, spleen, pancreas,   |
| Product Gentoxicity in vitro      | Microorganisms, cell cultures<br>none mutagenic / genotoxic effects<br>Method: literature<br>Test substance: DL-Methionine<br><br>Ames test Salmonella typhimurium<br>negative<br>Method: OECD TG 471<br>Test substance: DL-Methionine |
| Product Carcinogenicity           | Not to be expected due to the "in vitro" test result.  |
| Product Toxicity to reproduction  | 1 generation pharyngeal probe Rat: in maternally non-toxic doses<br>NOEL (No Observed Effect Level) of parents: 300 mg/kg<br>NOEL F1: 300 mg/kg<br>Method: OECD Test Guideline 415<br>Test substance: DL-Methionine                    |
| Product Human experience          | gastro-intestinal symptoms: nausea, vomiting   |

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Side-effects were observed in the event of higher dosage (10 g)  
DL-Methionine

**12. ECOLOGICAL INFORMATION****Elimination information (persistence and degradability)**

Biodegradability rapidly biodegradable  
Test substance: DL-Methionine  
Method: OECD TG 301 A

**Behaviour in environmental compartments**

Bioaccumulation Test substance: DL-Methionine  
low  
log Pow: see chapter 9

Mobility No data available

**Ecotoxicity effects**

Toxicity to fish LC50 (Brachydanio rerio): > 3200 mg/l / 96 h  
Test substance: DL-Methionine  
Method: OECD 203

NOEC (Brachydanio rerio): 3200 mg/l / 96 h  
Test substance: DL-Methionine  
Method: OECD 203

Toxicity to daphnia NOEC Daphnia magna: 220 mg/l / 48 h  
Test substance: DL-Methionine  
Method: OECD TG 202

EC50 Daphnia magna: 324 mg/l / 48 h  
Test substance: DL-Methionine  
Method: OECD TG 202

Toxicity to algae EC50 static test *Desmodesmus subspicatus*: > 1000 mg/l / 72 h  
End point: Biomass  
Analytical monitoring: yes  
Test substance: DL-Methionine  
Method: OECD TG 201

static test *Desmodesmus subspicatus*: > 1000 mg/l / 72 h  
End point: growth rate  
Analytical monitoring: yes  
Test substance: DL-Methionine  
Method: OECD TG 201

Toxicity to bacteria EC10 *Pseudomonas putida*: 2000 mg/l / 18 h  
Test substance: DL-Methionine  
Method: UBA method

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## Further information on ecology

Biochemical Oxygen Demand (BOD) 480 mg/g  
Concentration: (BOD5)  
Test substance: DL-Methionine

General Ecological Information No further information available

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## 13. DISPOSAL CONSIDERATIONS

### WASTE DISPOSAL

Advice on disposal

Waste must be disposed of in accordance with federal, provincial and local regulations. Offer rinsed packaging material to local recycling facilities. If there is product residue in the emptied container, follow directions for handling on the container's label.

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## 14. TRANSPORT INFORMATION

### Transport/further information

Not dangerous according to transport regulations.

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## 15. REGULATORY INFORMATION

### US Federal Regulations

#### OSHA

If listed below, chemical specific standards apply to the product or components:

- None listed

#### Clean Air Act Section (112)

If listed below, components present at or above the de minimus level are hazardous air pollutants:

- None listed

#### CERCLA Reportable Quantities

If listed below, a reportable quantity (RQ) applies to the product based on the percent of the named component:

- None listed

#### SARA Title III Section 311/312 Hazard Categories

The product meets the criteria only for the listed hazard classes:

- Acute Health Hazard



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## SARA Title III Section 313 Reportable Substances

If listed below, components are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

- None listed

## Toxic Substances Control Act (TSCA)

If listed below, non-proprietary substances are subject to export notification under Section 12 (b) of TSCA:

- None listed

## State Regulations

### California Proposition 65

A warning under the California Drinking Water Act is required only if listed below:

- None listed

## International Chemical Inventory Status

Unless otherwise noted, this product is in compliance with the inventory listing of the countries shown below. For information on listing for countries not shown, contact the Product Regulatory Services Department.

- USA (TSCA) Regulated food, drug, cosmetic

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## 16. OTHER INFORMATION

### HMIS Ratings

|                   |   |
|-------------------|---|
| Health :          | 2 |
| Flammability :    | 0 |
| Physical Hazard : | 0 |

### Further information

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

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