

**Material safety data sheet**  
According to EU Regulation 1907/2006 in the current version  
**Betaine**

**1. Identification of the substance/mixture and company**

Trade name: Betaine  
Antistatic, Hair conditioning, Humectant, Skin conditioning, Viscosity controlling

INCI: Betaine

CAS No. : 107-43-7

EINECS No. : 203-490-6

REACH pre-registration No. : 01-2119520508-42

Utilization: Raw material for cosmetic or professional use

Supplier company identification: Elemental SRL, Piața Cazărmii no.15, 410188-Oradea, jud.Bihor, Romania  
Tel/Fax: +40259-436.755, [www.elemental.eu](http://www.elemental.eu)

Emergency: RO: număr național pentru cazuri de urgență: 021 3183606 Institutul de Sănătate Publică București.  
International emergency number: +49 180 2273-112

**2. Hazards Identification**

**2.1. Classification of the substance or mixture**

Regulation (EC) No 1272/2008

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [GHS]

**2.2. Label elements**

This product is not classified as hazardous according to the UN GHS guideline and labelling is not required.

**2.3. Other hazards**

May form explosive dust-air mixture if dispersed.

**3. Declaration of ingredients**

3.1 Chemical name: Anhydrous Betaine

3.2 Chemical formula: C<sub>5</sub>H<sub>11</sub>NO<sub>2</sub>

3.3 The product contains the following ingredients

Substance	CAS	EINECS	Hazard symbols	Percent %
Trimethylglycine	107-43-7	203-490-6	-	min 99

**4. First aid measures**

4.1. Description of first aid measures

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**Inhalation:**

IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

**Skin Contact:**

IF ON SKIN: Wash with plenty of water and soap. If skin irritation occurs: Get medical advice/ attention.

**Eye Contact:**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

**Ingestion:**

Rinse mouth thoroughly with water. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

**4.2. Most important symptoms and effects, both acute and delayed**

None known.

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

Treat symptomatically.

**5. Fire fighting measures**

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**5.1. Extinguishing media**

Extinguish with alcohol-resistant foam, fire extinguishing powder or water spray.

**5.2. Special hazards arising from the substance or mixture**

None known

**5.3. Advice for firefighters**

Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide adequate protection.

**6. Accidental release measures**

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**6.1. Personal precautions, protective equipment and emergency procedures**

Avoid generation of dust and aerosols. Avoid breathing dust or spray mist.  
Advice for Emergency Responders: Use personal protection recommended in Section 8.

**6.2. Environmental precautions**

Contain spill.

**6.3. Methods and material for containment and cleaning up**

Methods for Containment: Cover with absorbent or contain. Collect and dispose.

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Methods for Cleaning Up. Use appropriate personal protective equipment (PPE). Contain and/or absorb spill with inert material, then place in suitable container. Prevent runoff from entering drains, sewers or waterways.

6.4. Reference to other sections

Use personal protection recommended in Section 8.

**7. Handling and storage**

7.1. Precautions for safe handling

Avoid generation of dust and aerosols. Avoid contact with eyes, skin and clothing. Avoid breathing dust or spray mist. Ensure adequate ventilation.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety practice. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with eyes, skin and clothing. Wear suitable gloves and eye/face protection.

7.2. Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Protect from light. Keep/store only in original container.

7.3. Specific end use(s)

See section 1 for more information

**8. Exposure controls / personal protection**

8.1. Control parameters

Exposure Limits based on data available for ingredients.

Predicted No Effect Concentration (PNEC)

Chemical Name	Marine water	Freshwater	Intermittent release	Sewage treatment plant	Freshwater sediment	Marine sediment	Oral	Soil
Anhydrous Betaine	None known	1.2 mg/L	None known	None known	None known	None known	None known	None known

8.2. Exposure controls

Engineering Measures:

Transfer via enclosed lines. Formulate in enclosed or ventilated mixing vessels. Carefully handle the substance to minimize releases. Avoid generation of dust and aerosols.

Personal protective equipment:

Eye/Face Protection Wear safety glasses with side shields (or goggles).

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**Hand Protection:**

Use any protective gloves that meet the minimum requirements of EN420 when handling solid product. Gloves meeting the additional requirements of EN374-2 should be worn when handling liquid products. Practical experience has shown that gloves of nitrile rubber, butyl rubber, latex, and polyvinyl chloride (PVC) offer sufficient protection. There are no additional material, thickness and breakthrough time requirements. Chemical resistant gloves, as defined by EN374-3 are not required.

**Skin and Body Protection:**

Wear protective gloves and protective clothing.

**Respiratory Protection:**

Ensure adequate ventilation. If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. Respirators with a particle filter (EN143) or P3 filters are recommended.

**9. Physical and chemical properties**

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**9.1 Information on physical and chemical properties**

Appearance: crystalline powder

Color: white

Odor: Faint molasses odor

Relative density (d 20 / 20): NA

Refractive index at 20°C: NA

Optical rotation (°): NA

Flash point: NA

Odor threshold: NA

pH: 5-7

Melting point / freezing point: NA

Initial boiling point and boiling range: NA

Evaporation rate: NA

Flammability (solid, gas): NA

Upper / lower flammability or explosive limits: NA

Vapor tension: NA

Vapor density: NA

Solubility in water: Soluble

Partition coefficient: n-octanol / water NA

Auto-ignition temperature: NA

Decomposition temperature: NA

Viscosity: NA

Explosive properties: NA

Oxidizing properties: NA

**9.2 Other information**

None

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**10. Stability and reactivity**

10.1. Reactivity

Not expected.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

None under normal processing.

10.4. Conditions to avoid

Very hygroscopic; protect from moisture. Keep away from heat, flames and sparks. May form combustible dust concentrations in air.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

Decomposes on heating. Decomposition products: Trimethylamine.

**11. Toxicological information**

11.1. Information on toxicological effects

Acute Toxicity:

Inhalation	No data available.
Eye Contact	If applicable: Classification is shown in section 2 of this SDS
Skin Contact	If applicable: Classification is shown in section 2 of this SDS
Ingestion	Toxicity: Not expected
Sensitization	Not expected.
Germ cell mutagenicity	No data available.
Carcinogenic effects	No data available.
Reproductive effects	No data available.
STOT - single exposure	No data available.
STOT - repeated exposure	No data available.
Aspiration hazard	Not expected.

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Component Information: Anhydrous Betaine. Classification based on data available for ingredients.

Oral	LD50/oral/rat 11179 mg/kg
Eye irritation	Non-irritant
Sensitization	Non-irritant.

Mutagenic effects:

Negative in Ames assay with and without metabolic activation up to 5000 µg/plate. Negative in chromosomal aberration using human lymphocytes. No increases in micronuclei were noted in the bone marrow of mice dosed up to 2 g/kg by the oral route.

Systemic Toxicity	Groups of male and female rats were administered 0, 0.5, 0.75, 1.0, and 5.0% betaine in the diet for 90 days. Based on this study, it was concluded that betaine is nontoxic
Carcinogenicity	Not Carcinogenic

11.02 The following values are calculated based on chapter 3.1 of the GHS document (ATE)

Not applicable

## 12. Ecological information

### 12.1. Toxicity

Classification based on data available for ingredients.

Contains 0 % of components with unknown hazards to the aquatic environment

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to daphnia
Betaine Anhydrous 107-43-7	EC50/72h/algae 1199 mg/l.(Desmodesmus subspicatus)	-	EC50/48hr/daphnia 4335 mg/L.

### 12.2. Persistence and degradability

Based on data available for ingredients.

Chemical Name	Biodegradation
Anhydrous Betaine 107-43-7	Readily biodegradable (88 % after 28 days).

### 12.3. Bioaccumulative potential

No bioaccumulation potential.

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12.4. Mobility in soil  
Soluble.

12.5. Results of PBT and vPvB assessment  
The components in this formulation do not meet the criteria for classification as PBT or vPvB.

12.6. Other adverse effects  
None known.

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**13. Disposal considerations**

13.1. Waste treatment methods

Disposal Methods: Dispose of wastes in an approved waste disposal facility. Dispose of contents/containers in accordance with local regulations.

Contaminated Packaging: Dispose of empty containers and wastes safely. Dispose of waste product or used containers according to local regulations.

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**14. Transport information**

14.1 UN number

ADR: -

IMDG: -

IATA: -

Customs Code: -

14.2 UN shipping name

ADR: Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

14.3 Class of danger for transport

ADR: -

IMDG: -

IATA: -

14.4 Packing group

ADR: -

IMDG: -

IATA: -

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**15. Regulatory information**

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15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture  
Not applicable

Chemical Name	Water hazard class (WGK)
Anhydrous Betaine	1

15.2. Chemical safety assessment  
A Chemical Safety Assessment is not required for this substance when it is used in the specified applications.

## 16. Additional information

### 16.1 Abbreviations

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.  
CAS: Chemical Abstracts Service (division of the American Chemical Society).  
CLP: Classification, Labeling, Packaging.  
DNEL: Derived No Effect Level.  
EINECS: European Inventory of Existing Commercial Chemical Substances.  
GHS: Globally Harmonized System of Classification and Labeling of Chemicals.  
IATA: International Air Transport Association.  
IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).  
ICAO: International Civil Aviation Organization.  
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).  
IMDG: International Maritime Code for Dangerous Goods.  
INCI: International Nomenclature of Cosmetic Ingredients.  
LTE: Long-term exposure.  
PNEC: Predicted No Effect Concentration.  
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.  
STE: Short-term exposure.  
STEL: Short Term Exposure limit.  
STOT: Specific Target Organ Toxicity.

### Disclaimer:

This material safety data sheet does not constitute a guarantee of the properties of the product and is not a contractual legal report. The information is given in good faith on the basis of our best knowledge of the product at the indicated time. However, we cannot accept responsibility or liability for any consequences arising from its use, no warranty for correctness and completeness is given. We caution the users against the incurred possible risks when the product is used at other ends than the use for which it was initially planned. It is the user's responsibility during handling, storage and product use to consult the main regulatory texts in force regarding workers and environment protection.