

Revision Date 13/07/2017
Revision Number 4

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Name GENENCARE® OSMS BA
 Product Code A56000
 Synonyms Betaine
 1-Carboxy-N,N,N-trimethylmethan-aminium hydroxide inner salt.
 Trimethylglycine
 Pure substance/mixture Substance

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

Recommended Use Personal care

1.3. Details of the supplier of the safety data sheet

Genencor International, B.V.
 Archimedesweg 30
 2333 CN Leiden
 The Netherlands
 Tel.: +31 71 5686 168
 Fax: +31 71 5686 169

E-mail address

SDS.Genencor@DuPont.com

1.4. Emergency telephone number

+32 (0) 50 44 91 73

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Not classified.

2.2. Label elements

Signal word

None

2.3. Other hazards

May form explosible dust-air mixture if dispersed.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Description Substance.

Chemical Name	CAS No.	Weight-%	EINECS	IUB-ECCode	REACH Reg. No.	CLP Classification
Betaine Anhydrous	107-43-7	min 99 d.s.	203-490-6		01-2119520508-42	Not classified

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

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.

Section 5: FIRE FIGHTING MEASURES

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

May form combustible dust concentrations in air. Decomposes on heating. Decomposition products: Trimethylamine, Carbon dioxide (CO₂), Esters.

5.3. Advice for firefighters

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

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).

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.

Methods for Cleaning Up

Avoid dust formation. Use industrial vacuum cleaners approved for combustible dust and area electrical classification.

6.4. Reference to other sections

Use personal protection recommended in Section 8.

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Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Fine dust dispersed in air, in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

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.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits

Based on data available for ingredients.

Chemical Name	EU	UK WEL	France	Spain	German MAK:
Betaine Anhydrous	None known	None known	None known	None known	None known

Chemical Name	Italy	Portugal	The Netherlands	Finland	Denmark
Betaine Anhydrous	None known	None known	None known	None known	None known

Chemical Name	Austria	Switzerland	Poland	Norway	Ireland
Betaine Anhydrous	None known	None known	None known	None known	None known

DNEL/DMEL - Workers

Inhalation

Chemical Name	Acute effects, local	Acute effects, systemic	Chronic (local)	Chronic effects, systemic
Betaine Anhydrous	None known	None known	None known	None known

Dermal

Chemical Name	Acute effects, local	Acute effects, systemic	Chronic (local)	Chronic effects, systemic
Betaine Anhydrous	None known	None known	None known	None known

DNEL/DMEL - General population

Oral

Chemical Name	Acute effects, local	Acute effects, systemic	Chronic (local)	Chronic effects, systemic
Betaine Anhydrous	-	11178 mg/kg bw/day	-	4413 mg/kg bw/day

Inhalation

Chemical Name	Acute effects, local	Acute effects, systemic	Chronic (local)	Chronic effects, systemic
Betaine Anhydrous	None known	None known	None known	None known

Dermal

Chemical Name	Acute effects, local	Acute effects, systemic	Chronic (local)	Chronic effects, systemic
Betaine Anhydrous	None known	None known	None known	None known

Predicted No Effect Concentration (PNEC)

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

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**8.2. Exposure controls
Engineering Measures**

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

Personal protective equipment

**Eye/Face Protection
Hand Protection**

Wear safety glasses with side shields (or goggles).
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
Respiratory Protection**

Wear protective gloves and protective clothing.
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.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical State	Crystalline Powder
Colour	White
Odour	Faint molasses odour.
Odour Threshold	No data available
pH	5-7
Melting point / freezing point	No data available
Boiling point / boiling range	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper Flammability Limit	No data available
Upper explosive limits	No data available
Lower Flammability Limit	No data available
Lower explosive limits	No data available
Vapour Pressure	No data available
Vapour Density	No data available
Relative density	No data available
Specific Gravity	No data available
Water Solubility	Soluble
Partition Coefficient (n-octanol/water)	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Dynamic viscosity	No data available
Oxidising Properties	No data available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity
Not expected.

10.2. Chemical stability
Stable under normal conditions.

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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.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Acute Toxicity	
Inhalation	No data available.
Eye Contact	Not expected to cause eye irritation.
Skin Contact	Not expected to cause irritation.
Ingestion	Toxicity Not expected

Sensitisation	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.

Component Information

Betaine Anhydrous

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

The following values are calculated based on chapter 3.1 of the GHS document (ATE)
Not applicable

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity
Classification based on data available for ingredients.

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

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

12.3. Bioaccumulative potential

No bioaccumulation potential.

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.

Section 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.

Section 14: TRANSPORT INFORMATION

IMDG/IMO

14.1 UN-No.	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3. Hazard Class	Not regulated
14.4. Packing Group	Not regulated
14.5. Marine Pollutant	None
14.6. Special Provisions	None
14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	None

RID

14.1 UN-No.	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3. Hazard Class	Not regulated
14.4. Packing Group	Not regulated
14.5. Environmental hazard	None
14.6. Special Provisions	None

ADR:

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14.1 UN-No.	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3. Hazard Class	Not regulated
14.4. Packing Group	Not regulated
14.5. Environmental hazard	None
14.6. Special Provisions	None

ICAO

14.1 UN-No.	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3. Hazard Class	Not regulated
14.4. Packing Group	Not regulated
14.5. Environmental hazard	None
14.6. Special Provisions	None

IATA

14.1 UN-No.	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3. Hazard Class	Not regulated
14.4. Packing Group	Not regulated
14.5. Environmental hazard	None
14.6. Special Provisions	None

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Not applicable

Chemical Name	Water hazard class (WGK)
Betaine Anhydrous	1

15.2. Chemical safety assessment

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

Section 16: OTHER INFORMATION

Prepared By SDS.Genencor@DuPont.com

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SDS sections updated 2, 5, 6, 7, 10, 15.

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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End of Safety Data Sheet