

Section 1: IDENTIFICATION

Product Name Betafin® S1
Material Number M51E0CA
Synonyms Betaine 1-Carboxy-N,N,N-trimethylmethan-aminium hydroxide inner salt. Trimethylglycine.
Recommended Use Animal feed.
Company/undertaking identification Danisco Animal Nutrition
PO Box 777
Marlborough
Wiltshire SN81XN
United Kingdom
Tel: +441672 517777.
E-mail Address SDS-Genencor@Danisco.com
Emergency Telephone +358 10 431 020 (Monday - Friday 8-17 (+2 GMT)).

Section 2: HAZARDS IDENTIFICATION

Potential Health Effects Due to the hygroscopic nature of the dry product, avoid prolonged contact with skin, eyes and mucous membranes. Continuous breathing of dust, like any dust, may cause allergic type reactions in sensitive persons.

Eyes Dust contact with the eyes can lead to mechanical irritation.
Skin Non-irritating during normal use
Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.
Ingestion Generally regarded as safe by ingestion.

Environmental Hazard See Section 12 for additional Ecological Information.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Description Betaine

Chemical Name	CAS-No	%	OSHA	ACGIH
Betaine Anhydrous	107-43-7	min 96 d.s.	Not Listed	Not Listed
Calcium stearate	1592-23-0	min 1	Not Listed	Not Listed

Betafin® S1

Section 4: FIRST AID MEASURES

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.
Skin Contact	IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
Inhalation	IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
Ingestion	Rinse mouth. If swallowed. Call a POISON CENTER or doctor/physician if you feel unwell.
Notes to Physician	None.

Section 5: FIRE FIGHTING MEASURES

Flammable Properties	Not flammable.
Suitable Extinguishing Media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Protective Equipment and Precautions for Firefighters	Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide adequate protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Avoid contact with the skin and the eyes. Avoid dust formation
Methods for Containment	Prevent further leakage or spillage if safe to do so.
Methods for Cleaning Up	Pick up and transfer to properly labeled containers

Section 7: HANDLING AND STORAGE

Precautions for safe handling	Avoid dust formation. Avoid inhalation, ingestion and contact with skin and eyes.
Conditions for safe storage, including any incompatibilities	Keep container tightly closed in a dry and well-ventilated place.
Technical Measures/Precautions	Provide appropriate exhaust ventilation at places where dust is formed.

Betafin® S1

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines Based on data available for ingredients

Occupational Exposure Controls

Engineering Measures Process enclosure and/or ventilation systems. Ensure adequate ventilation. Any equipment used to handle this product, should be designed to minimize the escape of aerosols and dust.

Hygiene measures Handle in accordance with good industrial hygiene and safety practice

Personal protective equipment

Eye/Face Protection In case of eye contact: Wear safety glasses with side shields (or goggles)
Skin and Body Protection Impervious clothing. In case of skin contact
Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Light brown	Odor	Characteristic.
Physical State	Crystalline solid.	pH	7-10 (5% solution)
Autoignition Temperature	No data available	Decomposition Temperature	No data available
Boiling point / boiling range	Not applicable	Melting Point/Range	No data available
Freezing Point	No data available	Flammability Limits in Air	No data available
Explosion Limits	No data available	Water solubility	160 g / 100g (in water, 25°C).
Evaporation Rate	Not applicable	Vapor Pressure	Not applicable
Viscosity	Not applicable		

Section 10: STABILITY AND REACTIVITY

Chemical stability	Stable under recommended storage conditions
Incompatible Products	None known
Conditions to avoid	Very hygroscopic; protect from moisture. Avoid dust formation. Dust can form an explosive mixture in air.
Hazardous Decomposition Products	Risk for formation of trimethylamine in hot, strongly alkaline solution.
Hazardous Polymerization	Hazardous polymerization does not occur
Materials to Avoid	Strong bases.

Section 11: TOXICOLOGY INFORMATION

Product Information

Betafin® S1

Acute toxicity
Oral Generally regarded as safe by ingestion.
Dermal Not an expected route of exposure
Inhalation No information available

Irritation
Eye irritation Dust contact with the eyes can lead to mechanical irritation.
Skin irritation Prolonged or repeated contact may dry skin and cause irritation.
Respiratory irritation Inhalation of dust in high concentration may cause irritation of respiratory system.

Sensitization Continuous breathing of dust, like any dust, may cause allergic type reactions in sensitive persons.

Mutagenic effects Not expected to cause mutagenic effects.
Carcinogenicity Not classified as a carcinogen by IARC, OSHA, or NTP.

Component Information Classification based on data available for ingredients

Betaine Anhydrous
Oral LD50/oral/rat 11179 mg/kg.
Eye irritation Not an irritant.
Sensitization Not a sensitizer in guinea pig sensitization studies.
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 gm/kg by the oral route.

Calcium stearate
Oral LD50/oral/rat 10,000 mg/kg.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity effects Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

Mobility Soluble

Persistence and Degradability Readily biodegradable, according to appropriate OECD test. Biological degradability (28d): 88% (betaine).

Bioaccumulation/Accumulation No bioaccumulation potential

Component Information Based on data available for ingredients

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia	Biodegradation
Betaine Anhydrous	EC50/72h/algae 1199 mg/l. (Desmodesmus subspicatus).	-	EC50/48hr/daphnia 4335 mg/L.	Readily biodegradable (88% after 28 days).
Chemical Name	Log Pow	Chemical Oxygen Demand (COD)	Biochemical Oxygen Demand (BOD)	Bioconcentration factor (BCF)
Betaine Anhydrous	-3.1 (@ 20°C)	14 mg/g (Cr).	BOD5 ATU: 720 mg/g.	No data

Betafin® S1

Section 13: DISPOSAL CONSIDERATIONS

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

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

Section 14: TRANSPORTATION INFORMATION

DEPT. OF TRANSPORTATION UN OR NA NUMBER Not classified as dangerous in the meaning of transport regulations.

Section 15: REGULATORY INFORMATION

U.S. Federal Regulations

Chemical Name	SARA 313 - Threshold Values %	CERCLA/SARA - Section 302 Extremely Haz
Betaine Anhydrous	Not listed	Not listed
Calcium stearate	Not listed	Not listed

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR

Betafin® S1

Section 16: OTHER INFORMATION

Prepared By SDS-Genencor@Danisco.com
Issuing Date 11/06/2014
Revision Date 11/07/2014
Revision Number 1
SDS sections updated First Edition.

Disclaimer

The information provided in this 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

END OF SDS