

SAFETY DATA SHEET

Date: 03.03.2014
Version: 01
Former date: ---



SECTION 1: IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY

1.1 Product identifier

Trade name	Cherry Armor
Material number	C04E0
REACH Registration number	---

1.2 Relevant identified uses of the mixture and uses advised against

The uses of the mixture

Cherry Armor is used on agricultural crops to improve the plants resistance to environmental stresses caused by heat, cold, drought and salinity. Cherry Armor also reduces the need for irrigation. Use for other purposes is prohibited.

Professional use only.

1.3 Details of the supplier of the Safety Data Sheet

Supplier	Veredera OY Lallemand Plant Care/ Jet Harvest Solutions
Street address	Kurjenkellontie 5 B
Postcode and post office	FI-02270 ESPOO, Finland. P.O.BOX 5
Post-office box	FI-02271 ESPOO, Finland. +358 (0)10
Postcode and post office	217 3700
Telephone number	+358 (0)10 217 3711 / 407-523-7842
Telefax	infoverdera@lallemand.com /
E-mail address	products@bio-save.com

1.4 Emergency telephone number

In Finland: +358 (0)9 471 977 (24 hrs).

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the mixture

This product is not classified as dangerous according to the CLP Regulation (EC) No 1272/2008.

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2.2 Label elements / Precaution statements

P235 Keep cool.
P260 Do not breath dust.
P280 Wear protective gloves, clothing and face protection.
P402 Store in a dry place.

2.3 Other supplemental hazard information.

EUH208 Contains glycine betaine. May produce an allergic reaction.

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

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Mixtures

Substance name	CAS-, EC- or index number	REACH Registration No.	Concentration	Classification
Betaine Anhydrous (synonyms: Betaine. 1-Carboxy-N,N,N-trimethylmethan-aminium hydroxide inner salt. Trimethylglycine.)	CAS No. 107-43-7 EINECS No. 203-490-6	---	min 97% (dry substance)	None.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, consult a specialist.
(P305 + P351 + P337 + P313)

Skin contact: Wash off immediately with plenty of water. If skin irritation persists, call a physician.
(P302 + P352 + P332 + P313)

Ingestion: Clean mouth with water and afterwards drink plenty of water.
(P301 + P330)

Inhalation: Move to fresh air.
(P304 + P340)

4.2 Most important symptoms and effects, both acute and delayed

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

4.3 Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

If overheated, the risk for formation of decomposition products (trimethylamine, ketene). Formation of nitrous vapours in combustion.

5.3 Advice for firefighters

Wear self-contained breathing apparatus and protective suit.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

P281: Use personal protective equipment as required.

Avoid contact with the skin and the eyes. Avoid dust formation.

6.2 Environmental precautions

P273: Avoid release to the environment.

No special environmental precautions required.

6.3 Methods and material for containment and cleaning up

P501: Dispose of contents and container: in accordance with local and national regulations.

Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust. After cleaning, flush away traces with water.

6.4 Reference to other sections

None.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

P281: Use personal protective equipment as required.

Avoid dust formation. Avoid inhalation, ingestion and contact with skin and eyes.

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7.2 Conditions for safe storage, including any incompatibilities

P402 + P403 + P404 + P411: Store in a dry and well-ventilated place in a tightly closed container at temperatures not exceeding +8°C.

7.3 Specific end use(s)

Provide appropriate exhaust ventilation at places where dust is formed.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

National occupational exposure limit values :	Other dusts of organic origin (Finland):	TWA: 5 mg/m ³ STEL: 10 mg/m ³
Other limit values :	Other dusts of organic origin :	TWA: 3 mg/m ³ (Denmark) TWA 5 mg/m ³ (Estonia)
DNEL :	None.	
PNEC :	None.	

8.2 Exposure controls

Appropriate engineering controls:	Ensure adequate ventilation. Local exhaust ventilation of dust at the point of generation. Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice.
Eye / face protection:	Safety glasses with side-shields.
Skin protection:	Wear suitable protective clothing.
Hand protection:	Wear protective gloves.
Respiratory protection:	In case of insufficient ventilation: Effective dust mask.
Thermal hazards:	None.
Environmental exposure controls:	None.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Crystalline solid. Light brown.
Odour	Faint molasses osour.
Odour threshold	None.
pH	6-10 (5% solution)
Melting point/freezing point	Not applicable.
Initial boiling point and boiling range	Not applicable.

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Flash point	Non-combustible.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	Not applicable. Not applicable.
Vapour pressure	Not applicable.
Vapour density	Not applicable.
Relative density	05.-0.6 kg/l.
Solubility(ies)	160 g / 100 g (in water, 25°C).
Partition coefficient: n-octanol/water	Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not applicable.
Viscosity	Not applicable.
Explosive properties	Not applicable.
Oxidising properties	Not applicable.

9.1 Other information

None.

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	Not reactive.
Chemical stability:	Stable under normal conditions.
Possibility of hazardous reactions:	None.
Conditions to avoid:	Very hygroscopic; protect from moisture.
Incompatible materials:	Strong bases.
Hazardous decomposition products:	Risk for formation of trimethylamine in hot, strongly alkaline solution.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute toxicity	LD50 (oral/rat) > 11179 mg/kg. Generally regarded as safe by ingestion.
Skin corrosion/irritation	Prolonged or repeated contact may dry skin and cause irritation.
Serious eye damage/irritation	Not an irritant. Dust contact with the eyes can lead to mechanical irritation.
Respiratory or skin sensitisation	Not a sensitizer in guinea pig sensitization studies. Inhalation of dust in high concentration may cause

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	irritation of respiratory system and may cause allergic type reactions in sensitive persons.
Germ cell mutagenicity	Negative in Ames assay with and without metabolic activation up to 5000 ug/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.
Carcinogenicity	---
Reproductive toxicity	---
STOT-single exposure	---
STOT-repeated exposure	---
Aspiration hazard	---
Other information	Product does not present an acute toxicity hazard based on known information.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

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

12.2 Persistence and degradability

Readily biodegradable, according to appropriate OECD test. Biological degradability (28d): 88% (Betaine).

12.3 Bioaccumulative potential

Bioaccumulation is unlikely.

12.4 Mobility in soil

The product is water soluble, and may spread in water systems.

12.5 Results of PBT and vPvB assessment

Component information below is as complete as possible. The ecotox data is based on 50 % betaine solution. Betaine Anhydrous:
Chemical Oxygen Demand (COD): 14 mg/g (Cr)
Biochemical Oxygen Demand (BOD): 720 mg/g (BOD5 ATU)
Dissolved Organic Carbon (DOC): 300 mg/g

12.6 Other adverse effects

None.

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SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Dispose of contents/container in accordance with local and national regulations.

SECTION 14: TRANSPORT INFORMATION

Not dangerous goods in the meaning of ADR/RID, ADNR, IMDG-Code, ICAO/IATA-DGR.

SECTION 15: REGULATORY INFORMATION

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

This product is not classified as dangerous according to the CLP Regulation (EC) No 1272/2008. (During the transitional period the Dangerous Substance Directive 67/568/EEC and the Dangerous Preparation Directive 99/45/EEC, remains applicable).

15.2 Chemical safety assessment

SECTION 16: OTHER INFORMATION

Indication of changes

Safety Data Sheet modified and prepared to comply with CLP Regulation (EC) 1272/2008.

Abbreviations and acronyms

None.

Key literature references and sources for data

Regulations, databases, literature.

Used method in evaluating classification

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006. This product is not classified as dangerous according to the CLP Regulation (EC) No 1272/2008. (During the transitional period the Dangerous Substance Directive 67/568/EEC and the Dangerous Preparation Directive 99/45/EEC, remains applicable).

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List of relevant H-and P-statements or/and other safety and precautionary statements

P235	Keep cool.
P260	Do not breath dust.
P280	Wear protective gloves, clothing and face protection.
P402	Store in a dry place.
EUH208	Contains glycine betaine. May produce an allergic reaction.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge 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, since the conditions of the operations mentioned are beyond our control. 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. Verdera Oy disclaims any liability for loss or damage resulting from the use of these data, information or suggestions.