

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/17/2023

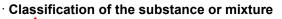
Revision date 11/17/2023

Page 1/8

1 Identification

- · Product identifier
- Trade name: <u>γ-CEHC</u>
 Synonym γ-Tocopherol Metabolite GTM
 2.7.8-trimethyl-2-(β-Carboxy-Ethyl)-6-Hydroxychroman
- $2,7,8-trimethyl-2-(\beta-Carboxy-Ethyl)-6-Hydroxychroman$
- Article number: 89630 • CAS Number:
- 178167-75-4 • Application of the substance / the mixture
- This product is for research use Not for human or veterinary diagnostic or therapeutic use.
- Details of the supplier of the safety data sheet
 Manufacturer/Supplier: Cayman Chemical Co. 1180 E. Ellsworth Rd. Ann Arbor, MI 48108 USA
- Information department: Product safety department
 Emergency telephone number:
- During normal opening times: +1 (734) 971-3335 US/CANADA: 800-424-9300 Outside US/CANADA: 703-741-5970

2 Hazard(s) identification





Skin Irritation 2H315 Causes skin irritation.Eye Irritation 2AH319 Causes serious eye irritation.Specific Target Organ Toxicity - Single Exposure 3H335 May cause respiratory irritation.

- · Label elements
- · GHS label elements
- The substance is classified and labeled according to the Globally Harmonized System (GHS).

(Contd. on page 2)

Printing date 11/17/2023

Revision date 11/17/2023

Trade name: γ-CEHC

· Hazard pictog	(Contd. from page 1)
•	
GHS07	
 Signal word ∨ Hazard staten 	
H315 Causes	
	serious eye irritation.
	se respiratory irritation.
· Precautionary	
P261	Avoid breathing dust/fume/gas/mist/vapors/spray
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear eye protection / face protection.
P302+P352	If on skin: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P	338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if
	present and easy to do. Continue rinsing.
P312	Call a poison center/doctor if you feel unwell.
P321	Specific treatment (see on this label).
P362+P364	Take off contaminated clothing and wash it before reuse.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
 Classification 	system:
· NFPA ratings	
	ealth = 2
	re = 0
	eactivity = 0
	eactivity - 0
· HMIS-ratings	(scale 0 - 4)
HEALTH 2	Health = 2
FIRE 0	Fire = 0
	Reactivity = 0

· Other hazards

- · Results of PBT and vPvB assessment
- PBT: Not applicable.
 vPvB: Not applicable.

(Contd. on page 3)

US

Printing date 11/17/2023

Revision date 11/17/2023

Trade name: γ-CEHC

(Contd. from page 2)

3 Composition/information on ingredients

- · Chemical characterization: Substances
- · CAS No. Description
- 178167-75-4 γ-CEHC

4 First-aid measures

- Description of first aid measures
- · After inhalation: In case of unconsciousness place patient stably in side position for transportation.
- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact:
- Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- · After swallowing: If symptoms persist consult doctor.
- · Information for doctor:
- Most important symptoms and effects, both acute and delayed No further relevant information available.
- Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- · Extinguishing media
- Suitable extinguishing agents: Use fire fighting measures that suit the environment. A solid water stream may be inefficient.
- · Special hazards arising from the substance or mixture No further relevant information available.
- Advice for firefighters
- · Protective equipment: No special measures required.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Not required.
- · Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- Methods and material for containment and cleaning up: Ensure adequate ventilation.
- Reference to other sections
 See Section 7 for information on safe handling.
 See Section 8 for information on personal protection equipment.
 See Section 13 for disposal information.
- Protective Action Criteria for Chemicals
- · PAC-1: Substance is not listed.
- · PAC-2: Substance is not listed.
- · PAC-3: Substance is not listed.

7 Handling and storage

- · Handling:
- Precautions for safe handling
- No special precautions are necessary if used correctly. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.

(Contd. on page 4)

Printing date 11/17/2023

Revision date 11/17/2023

Trade name: y-CEHC

Keep away from sources of ignition.

Take precautionary measures against static discharge.re.

· Information about protection against explosions and fires: No special measures required.

- · Conditions for safe storage, including any incompatibilities
- Storage: Store in accordance with information listed on the product insert.
- Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep receptacle tightly sealed.
- Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see section 7.

- · Control parameters
- Components with limit values that require monitoring at the workplace: Not required.
- Additional information: The lists that were valid during the creation were used as basis.
- Exposure controls
- · Personal protective equipment:
- · General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

· Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· Penetration time of glove material

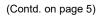
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

• Eye protection:



Tightly sealed goggles

(Contd. from page 3)



Printing date 11/17/2023

Revision date 11/17/2023

Trade name: γ-CEHC

(Contd. from page 4)

9 Physical and chemical proper	ties
 Information on basic physical and c General Information 	hemical properties
· Appearance:	
Form:	Solid
Color:	Not determined.
Odor:	Characteristic
Structural Formula	C15H20O4
 Molecular Weight Odor threshold: 	264.3 g/mol Not determined
· pH-value:	Not applicable.
Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Product is not flammable.
· Decomposition temperature:	Not determined.
· Ignition temperature:	Not determined.
[.] Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure:	Not applicable.
· Density:	Not determined.
 Relative density 	Not determined.
Vapor density	Not applicable.
· Evaporation rate	Not applicable.
Solubility in / Miscibility with	
Water:	Not determined.
· Partition coefficient (n-octanol/wate	r): Not determined.
· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
SOLUBILITY	DMF: 30 mg/ml, DMSO: 30 mg/ml, Ethanol: 30 mg/ml, PBS (7.2): 0.1 mg/ml
· Other information	No further relevant information available.

10 Stability and reactivity

· Reactivity No further relevant information available.

- · Chemical stability
- Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

• Possibility of hazardous reactions No dangerous reactions known.

(Contd. on page 6)

US

Printing date 11/17/2023

Revision date 11/17/2023

(Contd. from page 5)

Trade name: γ-CEHC

- · Conditions to avoid No further relevant information available.
- · **Incompatible materials:** strong oxidizing agents
- · Hazardous decomposition products: carbon dioxide, carbon monoxide

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:
- Primary irritant effect:
- on the skin: Irritant to skin and mucous membranes.
- on the eye: Irritating effect.
- Sensitization: No sensitizing effects known.
- · Additional toxicological information:
- · Carcinogenic categories
- · IARC (International Agency for Research on Cancer) Substance is not listed.
- NTP (National Toxicology Program) Substance is not listed.
- · OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed.

12 Ecological information

- · Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability No further relevant information available.
- Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- Additional ecological information:
- · General notes:

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- Results of PBT and vPvB assessment
- **PBT:** Not applicable.
- · vPvB: Not applicable.
- Other adverse effects No further relevant information available.

13 Disposal considerations

· Waste treatment methods

· Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- · Uncleaned packagings:
- **Recommendation:** Disposal must be made according to official regulations.

(Contd. on page 7)

Printing date 11/17/2023

Revision date 11/17/2023

Trade name: γ-CEHC

(Contd. from page 6)

UN-Number	
DOT, IMDG, IATA	not regulated
UN proper shipping name	
DOT, IMDG, IATA	not regulated
Transport hazard class(es)	
DOT, ADN, IMDG, IATA	
Class	not regulated
Packing group	
DOT, IMDG, IATA	not regulated
Environmental hazards:	Not applicable.
Special precautions for user	Not applicable.
Transport in bulk according to Anne	ex II of
MARPOL73/78 and the IBC Code	Not applicable.

15 Regulatory information

• Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available.

· Sara

· Section 355 (extremely hazardous substances): Substance is not listed.

- · Section 313 (Specific toxic chemical listings): Substance is not listed.
- TSCA (Toxic Substances Control Act): Substance is not listed.
- · Hazardous Air Pollutants Substance is not listed.

· Proposition 65

- · Chemicals known to cause cancer: Substance is not listed.
- · Chemicals known to cause reproductive toxicity for females: Substance is not listed.
- · Chemicals known to cause reproductive toxicity for males: Substance is not listed.
- · Chemicals known to cause developmental toxicity: Substance is not listed.
- · Carcinogenic categories
- · EPA (Environmental Protection Agency) Substance is not listed.
- · TLV (Threshold Limit Value) Substance is not listed.
- · NIOSH-Ca (National Institute for Occupational Safety and Health) Substance is not listed.
- · Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

All chemicals may pose unknown hazards and should be used with caution. This SDS applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. Cayman Chemical Company assumes no responsibility for incidental or consequential damages, including lost profits, arising from the use of these data. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.

(Contd. on page 8)

US

Printing date 11/17/2023

Revision date 11/17/2023

Trade name: γ-CEHC

	(Contd. from page 7)
Department issuing SDS: Environment protection department.	
Contact: -	
Date of preparation / last revision 11/17/2023	
Abbreviations and acronyms:	
IMDG: International Maritime Code for Dangerous Goods	
DOT: US Department of Transportation	
IATA: International Air Transport Association	
CAS: Chemical Abstracts Service (division of the American Chemical Society)	
NFPA: National Fire Protection Association (USA)	
HMIS: Hazardous Materials Identification System (USA)	
PBT: Persistent, Bioaccumulative and Toxic	
vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety	
OSHA: Occupational Safety & Health	
TLV: Threshold Limit Value	
PEL: Permissible Exposure Limit	
REL: Recommended Exposure Limit	
Skin Irritation 2: Skin corrosion/irritation – Category 2	
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A	
Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) - Categor	ry 3
* Data compared to the previous version altered.	