

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 16.01.2024





Version number 1

Revision: 13.03.2023

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

- **1.1 Product identifier**
- **Trade name: Crotonic Acid Nat**
- **Product number: 1897**
- **CAS Number:**  
3724-65-0
- **EC number:**  
223-077-4
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Flavoring Ingredients
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Advanced Biotech  
10 Taft Road  
Totowa, NJ 07512 USA
- **Further information obtainable from:**  
Product Safety Department  
productsafety@adv-bio.com
- **1.4 Emergency telephone number:**  
Infotrac: 1-800-535-5053 (Domestic) & 1-352-323-3500 (International)  
Email: responders@infotrac.net & During normal business hours: 1-973-339-6242

**SECTION 2: Hazards identification**

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
-  GHS05 corrosion
- Skin Corr. 1C H314 Causes severe skin burns and eye damage.
- Eye Dam. 1 H318 Causes serious eye damage.
-  GHS07
- Acute Tox. 4 H302 Harmful if swallowed.
- Acute Tox. 4 H312 Harmful in contact with skin.
- **Labelling according to Regulation (EC) No 1272/2008**  
The substance is classified and labelled according to the GB CLP regulation.
- **Hazard pictograms**
-  
- GHS05 GHS07
- **Signal word** Danger

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**Trade name: Crotonic Acid Nat**

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- **Hazard-determining components of labelling:**  
 2-Butenoic acid
- **Hazard statements**  
 H302+H312 Harmful if swallowed or in contact with skin.  
 H314 Causes severe skin burns and eye damage.
- **Precautionary statements**  
 P260 Do not breathe dusts or mists.  
 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].  
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P310 Immediately call a POISON CENTER/doctor.  
 P321 Specific treatment (see on this label).  
 P362+P364 Take off contaminated clothing and wash it before reuse.  
 P405 Store locked up.  
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

**SECTION 3: Composition/information on ingredients**

- **3.1 Substances**
- **CAS No. Description**  
 CAS: 3724-65-0 2-Butenoic acid
- **Identification number(s)**
- **EC number:** 223-077-4
- **Acute toxicity estimate (ATE) values**  
 LD50 oral: 800 mg/kg  
 LD50 dermal: 1,300 mg/kg

**SECTION 4: First aid measures**

- **4.1 Description of first aid measures**
- **General information:**  
 Immediately remove any clothing soiled by the product.  
 Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **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. Then consult a doctor.
- **After swallowing:** Call for a doctor immediately.
- **4.2 Most important symptoms and effects, both acute and delayed**  
 No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
 No further relevant information available.

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### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture**  
During heating or in case of fire poisonous gases are produced.
- **5.3 Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.
- **Additional information**  
Cool endangered receptacles with water spray.  
Collect contaminated fire fighting water separately. It must not enter the sewage system.

### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**  
Mount respiratory protective device.  
Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**  
Use neutralising agent.  
Dispose contaminated material as waste according to section 13.  
Ensure adequate ventilation.
- **6.4 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.

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**  
Thorough dedusting.  
Ensure good ventilation/exhaustion at the workplace.
- **Information about fire - and explosion protection:** Keep respiratory protective device available.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**  
No special requirements.  
Please refer to the product specification and/or Certificate of Analysis for product storage requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **7.3 Specific end use(s)** No further relevant information available.

### SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making were used as a basis.

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- **8.2 Exposure controls**
- **Appropriate engineering controls** No further data; see section 7.
- **Individual protection measures, such as 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 skin.  
 Avoid contact with the eyes and skin.
- **Respiratory protection:**  
 In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- **Hand protection**



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 should be based 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 determined by the manufacturer of the protective gloves and has to be observed.
- **Eye/face protection**



Tightly sealed goggles

**SECTION 9: Physical and chemical properties**

- **9.1 Information on basic physical and chemical properties**
- **General Information** Molecular Weight: 86.09 g/mol
- **Physical state** Solid
- **Colour:** According to product specification
- **Odour:** According to product specification
- **Odour threshold:** Not determined.
- **Melting point/freezing point:** 72 °C
- **Boiling point or initial boiling point and boiling range** 189 °C
- **Flammability** Product is not flammable.
- **Lower and upper explosion limit**
- **Lower:** Not determined.
- **Upper:** Not determined.

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· Flash point:	88 °C
· Auto-ignition temperature:	490 °C
· Decomposition temperature:	Not determined.
· pH	Not applicable.
· Viscosity:	
· Kinematic viscosity	Not applicable.
· Dynamic:	Not applicable.
· Solubility	
· water at 20 °C:	72 g/l
· Partition coefficient n-octanol/water (log value)	Not determined.
· Vapour pressure at 20 °C:	0.25 hPa
· Density and/or relative density	
· Density at 20 °C:	1.02 g/cm <sup>3</sup>
· Relative density	Not determined.
· Refractive Index	
· Vapour density	Not applicable.
· Particle characteristics	
See section 3.	

**9.2 Other information**

· Appearance:	
· Form:	Solid
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	Not determined.
· Explosive properties:	Product does not present an explosion hazard.
· Solvent content:	
· VOC (EC)	0.00 %
· Solids content:	100.0 %
· Change in condition	
· Evaporation rate	Not applicable.

**Information with regard to physical hazard classes**

· Explosives	Void
· Flammable gases	Void
· Aerosols	Void
· Oxidising gases	Void
· Gases under pressure	Void
· Flammable liquids	Void
· Flammable solids	Void
· Self-reactive substances and mixtures	Void
· Pyrophoric liquids	Void
· Pyrophoric solids	Void
· Self-heating substances and mixtures	Void
· Substances and mixtures, which emit flammable gases in contact with water	Void
· Oxidising liquids	Void
· Oxidising solids	Void
· Organic peroxides	Void
· Corrosive to metals	Void

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· Desensitised explosives Void

**SECTION 10: Stability and reactivity**

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

**SECTION 11: Toxicological information**

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Harmful if swallowed or in contact with skin.

· **LD/LC50 values relevant for classification:**

**ATE (Acute Toxicity Estimates)**

Oral	LD50	800 mg/kg (ATE)
Dermal	LD50	1,300 mg/kg (ATE)

**CAS: 3724-65-0 2-Butenoic acid**

Oral	LD50	800 mg/kg (ATE)
		1,000 mg/kg (rat)
Dermal	LD50	1,300 mg/kg (ATE)

- **Skin corrosion/irritation** Causes severe skin burns and eye damage.
- **Serious eye damage/irritation** Causes serious eye damage.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

· **11.2 Information on other hazards**

· **Endocrine disrupting properties**

Substance is not listed.

**SECTION 12: Ecological information**

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.

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- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties**  
 The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Additional ecological information:**
- **General notes:**  
 Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water  
 Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.  
 Must not reach sewage water or drainage ditch undiluted or unneutralised.

**SECTION 13: Disposal considerations**

- **13.1 Waste treatment methods**
- **Recommendation**  
 Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

**SECTION 14: Transport information**

- |   |                              |
|---|------------------------------|
| · <b>14.1 UN number or ID number</b>  |                              |
| · <b>ADR, IMDG, IATA</b>  | UN2823                       |
| · <b>14.2 UN proper shipping name</b>   |                              |
| · <b>ADR</b>  | 2823 CROTONIC ACID, SOLID    |
| · <b>IMDG, IATA</b>   | CROTONIC ACID, SOLID         |
| · <b>14.3 Transport hazard class(es)</b>  |                              |
| · <b>ADR</b>  |                              |
|  |                              |
| · <b>Class</b>  | 8 (C4) Corrosive substances. |
| · <b>Label</b>  | 8                            |
| -----   |                              |
| · <b>IMDG, IATA</b>   |                              |
|  |                              |
| · <b>Class</b>  | 8 Corrosive substances.      |
| · <b>Label</b>  | 8                            |
| · <b>14.4 Packing group</b>   |                              |
| · <b>ADR, IMDG, IATA</b>  | III                          |

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- **14.5 Environmental hazards:**
- **Marine pollutant:** No
- **14.6 Special precautions for user** Warning: Corrosive substances.
- **Hazard identification number (Kemler code):** 80
- **EMS Number:** F-A,S-B
- **Segregation groups** (SGG1) Acids
- **Stowage Category** A
- **Stowage Code** SW1 Protected from sources of heat.
- **Handling Code** H2 Keep as cool as reasonably practicable
- **Segregation Code** SG36 Stow "separated from" SGG18-alkalis.  
SG49 Stow "separated from" SGG6-cyanides

- **14.7 Maritime transport in bulk according to IMO instruments** Not applicable.

· **Transport/Additional information:**

- **ADR**
- **Limited quantities (LQ)** 5 kg
- **Excepted quantities (EQ)** Code: E1  
Maximum net quantity per inner packaging: 30 g  
Maximum net quantity per outer packaging: 1000 g
- **Transport category** 3
- **Tunnel restriction code** E

- **IMDG**
- **Limited quantities (LQ)** 5 kg
- **Excepted quantities (EQ)** Code: E1  
Maximum net quantity per inner packaging: 30 g  
Maximum net quantity per outer packaging: 1000 g

- **UN "Model Regulation":** UN 2823 CROTONIC ACID, SOLID, 8, III

**SECTION 15: Regulatory information**

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

· **Poisons Act**

· **Regulated explosives precursors**

Substance is not listed.

· **Regulated poisons**

Substance is not listed.

· **Reportable explosives precursors**

Substance is not listed.

· **Reportable poisons**

Substance is not listed.

· **Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the GB CLP regulation.

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· **Hazard pictograms**



GHS05 GHS07

· **Signal word** Danger

· **Hazard-determining components of labelling:**

2-Butenoic acid

· **Hazard statements**

H302+H312 Harmful if swallowed or in contact with skin.

H314 Causes severe skin burns and eye damage.

· **Precautionary statements**

P260 Do not breathe dusts or mists.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor.

P321 Specific treatment (see on this label).

P362+P364 Take off contaminated clothing and wash it before reuse.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I** Substance is not listed.

· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

Substance is not listed.

· **REGULATION (EU) 2019/1148**

· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

Substance is not listed.

· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

Substance is not listed.

· **Regulation (EC) No 273/2004 on drug precursors**

Substance is not listed.

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

Substance is not listed.

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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- **Department issuing SDS:** Product safety department
- **Contact:**  
Product Safety Department  
productsafety@adv-bio.com
- **Date of previous version:** 08.03.2023
- **Abbreviations and acronyms:**  
 ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 VOC: Volatile Organic Compounds (USA, EU)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent  
 PBT: Persistent, Bioaccumulative and Toxic  
 vPvB: very Persistent and very Bioaccumulative  
 ATE: Acute toxicity estimate values  
 Acute Tox. 4: Acute toxicity – Category 4  
 Skin Corr. 1C: Skin corrosion/irritation – Category 1C  
 Eye Dam. 1: Serious eye damage/eye irritation – Category 1

GB