

Tenuazonic acid

version number GHS 2.0
replaces version of 29.04.2019 (GHS 1)

Revision: 02.04.2025

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

1.1 Product identifier

| | |
|---------------------------------|---|
| Identification of the substance | Tenuazonic acid |
| CAS number | 610-88-8 |
| Alternative name(s) | 3-Acetyl-5-sec-butyl-4-hydroxy-3-pyrrolin-2-one |
| Article number | 10002868 |

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

| | |
|--------------------------|--|
| Relevant identified uses | Laboratory and analytical use |
| Uses advised against | Do not use for private purposes (household). |

1.3 Details of the supplier of the safety data sheet

Romer Labs® Division Holding GmbH
Erber Campus 1
3131
Getzersdorf
Austria
Telephone: +43 2782 803 0
e-mail: Office.RomerLabsEU@dsm-firmenich.com
Website: www.romerlabs.com

Additional information

| Manufacturer | | | | | |
|--------------|----------------------------------|--------------|--------------------|-------------------|--------------------------------------|
| Country | Name | Street | Postal code / city | Telephone | e-Mail |
| Austria | Romer Labs Division Holding GmbH | Technopark 5 | 3430 Tulln | +43 2272 615 33 0 | Office.RomerLabsEU@dsm-firmenich.com |

1.4 Emergency telephone number

| | |
|-------------------------------|---|
| Emergency information service | +43 2782 803 0 Mon - Thu 09:00 - 16:00, Fri 09:00 - 12:00, GMT+1 |
|-------------------------------|---|

| Poison centre | | |
|---------------|---------------------------------|-----------------------|
| Country | Name | Telephone |
| Austria | Vergiftungsinformationszentrale | +43 1 406 43 43 (24h) |

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

| Section | Hazard class | Category | Hazard class and category | Hazard statement |
|---------|-----------------------|----------|---------------------------|------------------|
| 3.10 | acute toxicity (oral) | 4 | Acute Tox. 4 | H302 |

For full text of abbreviations: see SECTION 16.

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2.2 Label elements

Labelling

- Signal word warning

- Pictograms

GHS07



- Hazard statements

H302 Harmful if swallowed.

- Precautionary statements

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P330 Rinse mouth.

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

2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance Tenuazonic acid

Identifiers

CAS No 610-88-8

| Specific Conc. Limits | M-Factors | ATE | Exposure route |
|-----------------------|-----------|-----------|----------------|
| - | - | 500 mg/kg | oral |

Molecular formula C₁₀H₁₄NO₃

Molar mass 197.2 g/mol

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

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Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water, Foam, ABC-powder

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

Nitrogen oxides (NO_x), Carbon monoxide (CO), Carbon dioxide (CO₂)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains, Take up mechanically

Advice on how to clean up a spill

Take up mechanically.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas.

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- Specific notes/details

Dust deposits may accumulate on all deposition surfaces in a technical room.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Managing of associated risks

- Explosive atmospheres

Removal of dust deposits.

7.3 Specific end use(s)

See section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)
this information is not available

8.2 Exposure controls

Appropriate engineering controls

Use local and general ventilation.

Individual protection measures (personal protective equipment)



Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Wear protective gloves.

- Other protection measures

Take recovery periods for skin regeneration. Wash hands thoroughly after handling.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|--|---|
| Physical state | solid |
| Colour | not determined |
| Odour | characteristic |
| Melting point/freezing point | not determined |
| Boiling point or initial boiling point and boiling range | not determined |
| Flammability | this material is combustible, but will not ignite readily |

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| | |
|---------------------------------|----------------------|
| Lower and upper explosion limit | not relevant (solid) |
| Flash point | not applicable |
| Auto-ignition temperature | not determined |
| Decomposition temperature | not relevant |
| pH (value) | not applicable |
| Kinematic viscosity | not relevant |
| Solubility(ies) | not determined |

Partition coefficient

| | |
|---|-----------------------------------|
| Partition coefficient n-octanol/water (log value) | this information is not available |
|---|-----------------------------------|

| | |
|-----------------|----------------|
| Vapour pressure | not determined |
|-----------------|----------------|

Density and/or relative density

| | |
|-------------------------|----------------------|
| Density | not determined |
| Relative vapour density | not relevant (solid) |

| | |
|--------------------------|-------------------|
| Particle characteristics | no data available |
|--------------------------|-------------------|

9.2 Other information

| | |
|--|---|
| Information with regard to physical hazard classes | hazard classes acc. to GHS (physical hazards): not relevant |
| Other safety characteristics | there is no additional information |

SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

Oxidisers

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification acc. to GHS

Acute toxicity

Harmful if swallowed.

- Acute toxicity estimate (ATE)

Oral 500 mg/kg

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Information on other hazards

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

12.2 Persistence and degradability

Data are not available.

12.3 Bioaccumulative potential

Data are not available.

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Endocrine disrupting properties

Information on this property is not available.

12.7 Other adverse effects

Data are not available.

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SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagings

Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

- | | |
|---|---|
| 14.1 UN number or ID number | not subject to transport regulations |
| 14.2 UN proper shipping name | not relevant |
| 14.3 Transport hazard class(es) | none |
| 14.4 Packing group | not assigned |
| 14.5 Environmental hazards | non-environmentally hazardous acc. to the dangerous goods regulations |
| 14.6 Special precautions for user | There is no additional information. |
| 14.7 Maritime transport in bulk according to IMO instruments | The cargo is not intended to be carried in bulk. |

Information for each of the UN Model Regulations

International Maritime Dangerous Goods Code (IMDG) - Additional information

Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Not subject to ICAO-IATA.

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
There is no additional information.
- 15.2 Chemical safety assessment**
No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|--|---|-----------------|
| 1.1 | Article number: 10002868 | | yes |
| 1.1 | | Article number: 10002868 | yes |
| 1.2 | Uses advised against: Do not use for products which come into contact | Uses advised against: Do not use for private purposes (household). | yes |

Safety Data Sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)

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| Section | Former entry (text/value) | Actual entry (text/value) | Safety-rel- evant |
|---------|---|---|----------------------|
| | with foodstuffs. Do not use for private purposes (household). | | |
| 1.3 | Details of the supplier of the safety data sheet: Romer Labs® Division Holding GmbH Erber Campus 1 3131 Getzersdorf Austria Telephone: +43 2782 803 0 e-mail: office-europe@romerlabs.com Website: www.romerlabs.com | Details of the supplier of the safety data sheet: Romer Labs® Division Holding GmbH Erber Campus 1 3131 Getzersdorf Austria Telephone: +43 2782 803 0 e-mail: Office.RomerLabsEU@dsm-firmenich.com Website: www.romerlabs.com | yes |
| 1.3 | Manufacturer | | yes |
| 1.3 | | Manufacturer: change in the listing (table) | yes |
| 1.3 | | Additional information | yes |
| 1.3 | | Manufacturer: change in the listing (table) | yes |
| 1.4 | Emergency information service: +43 2782 803 0 This number is only available during the following office hours: Mon - Thu 09:00 - 16:00, Fri 09:00 - 12:00, GMT+1 | Emergency information service: +43 2782 803 0 Mon - Thu 09:00 - 16:00, Fri 09:00 - 12:00, GMT+1 | yes |
| 1.4 | | Poison centre: change in the listing (table) | yes |
| 1.4 | | Poison centre: change in the listing (table) | yes |
| 2.2 | | - Precautionary statements: change in the listing (table) | yes |
| 3.1 | | CAS No: change in the listing (table) | yes |
| 4.1 | Following skin contact: Brush off loose particles from skin. Rinse skin with water/shower. | Following skin contact: Wash with plenty of soap and water. | yes |
| 5.2 | Special hazards arising from the substance or mix- ture: Deposited combustible dust has considerable ex- plosion potential. | Special hazards arising from the substance or mix- ture | yes |
| 7.1 | - Measures to prevent fire as well as aerosol and dust generation: Use local and general ventilation. Take precau- tionary measures against static discharge. Use only in well-ventilated areas. Ground/bond container and receiving equipment. | - Measures to prevent fire as well as aerosol and dust generation: Use local and general ventilation. Use only in well- ventilated areas. | yes |
| 7.1 | Specific notes/details: Dust deposits may accumulate on all deposition surfaces in a technical room. The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion. | Specific notes/details: Dust deposits may accumulate on all deposition surfaces in a technical room. | yes |
| 7.2 | - Ventilation requirements: Use local and general ventilation. | | yes |
| 8.1 | Control parameters: This information is not available. | Control parameters: Occupational exposure limit values (Workplace Ex- posure Limits) this information is not available | yes |
| 8.2 | Appropriate engineering controls: General ventilation. | Appropriate engineering controls: Use local and general ventilation. | yes |

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| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|---|--|-----------------|
| 8.2 | Individual protection measures (personal protective equipment): eye protection must be worn safety gloves must be worn respiratory equipment must be used wear protective clothing | Individual protection measures (personal protective equipment): eye protection must be worn safety gloves must be worn wear protective clothing | yes |
| 8.2 | Hand protection: Chemical protection gloves are suitable, which are tested according to EN 374. Wear protective gloves. Check leak-tightness/impermeability prior to use. | Hand protection: Wear protective gloves. | yes |
| 8.2 | Respiratory protection: Particulate filter device (EN 143). | | yes |
| 9.1 | Appearance | | yes |
| 9.1 | Colour: various | Colour: not determined | yes |
| 9.1 | Other safety parameters | | yes |
| 9.1 | | Lower and upper explosion limit: not relevant (solid) | yes |
| 9.1 | Evaporation rate: not determined | | yes |
| 9.1 | Explosion limits of dust clouds: not determined | | yes |
| 9.1 | | Decomposition temperature: not relevant | yes |
| 9.1 | | Kinematic viscosity: not relevant | yes |
| 9.1 | | Density and/or relative density | yes |
| 9.1 | Vapour density: this information is not available | | yes |
| 9.1 | Viscosity: not relevant (solid matter) | | yes |
| 9.1 | Explosive properties: none | | yes |
| 9.1 | Oxidising properties: none | | yes |
| 9.1 | Relative density: information on this property is not available | Relative vapour density: not relevant (solid) | yes |
| 9.1 | | Particle characteristics: no data available | yes |
| 9.2 | other information: there is no additional information | Other information | yes |
| 9.2 | | Information with regard to physical hazard classes: hazard classes acc. to GHS (physical hazards): not relevant | yes |
| 9.2 | | Other safety characteristics: there is no additional information | yes |
| 10.4 | Hints to prevent fire or explosion: The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion. | | yes |
| 11.2 | | Information on other hazards: There is no additional information. | yes |
| 12.6 | Endocrine disrupting potential: | Endocrine disrupting properties: | yes |

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| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|--|--|-----------------|
| | Not listed. | Information on this property is not available. | |
| 12.7 | Other adverse effects | Other adverse effects: Data are not available. | yes |
| 14.2 | UN proper shipping name: not assigned | UN proper shipping name: not relevant | yes |
| 14.3 | Transport hazard class(es): not assigned | Transport hazard class(es): none | yes |
| 14.7 | Transport information - National regulations - Additional information (UN RTDG): not assigned | | yes |
| 16 | | Abbreviations and acronyms: change in the listing (table) | yes |
| 16 | Disclaimer: This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product. copyright: Romer Labs | Disclaimer: This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product. © 2025 Romer Labs | yes |

Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations |
|----------|---|
| ATE | Acute Toxicity Estimate |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| IATA | International Air Transport Association |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |
| ICAO | International Civil Aviation Organization |
| IMDG | International Maritime Dangerous Goods Code |
| PBT | Persistent, Bioaccumulative and Toxic |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| vPvB | Very Persistent and very Bioaccumulative |

Key literature references and sources for data

UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

List of relevant phrases (code and full text as stated in section 2 and 3)

| Code | Text |
|------|-----------------------|
| H302 | Harmful if swallowed. |

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