

DSM Nutritional Products

Product Data Sheet



Allantoin

Description

Allantoin is a white to off-white, practically odourless crystalline powder.

Product Identification

Product code: 50 0494 2

Chemical names: 5-ureido-hydantoin; 2,5-dioxo-4-imidazolidinyl urea

Synonyms: glyoxyldiureide

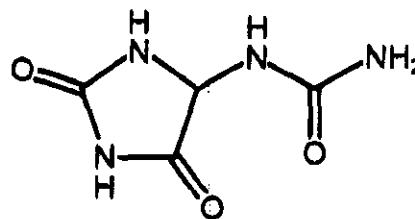
CAS No.: 97-59-6

EINECS No.: 202-592-8

INCI name: Allantoin

Empirical formula: $C_4H_6N_4O_3$

Molecular mass: 158,12 g/mol



Specifications

Appearance: white to off-white crystalline powder

Identity: corresponds

Assay: 99.0–101.0%

Solution 2% in water: clear and colourless

pH (0.5% in water): 4.0–6.0

Loss on drying: max. 0.1%

Solubility

Allantoin is readily soluble in warm water, and slightly soluble in water at 20 °C and in alcohol.

Stability and storage

Allantoin may be stored for 60 months from the date of manufacture in the unopened original packaging and at a temperature below 25 °C. Exposure to direct sunlight should be avoided. The 'best use before' date is printed on the label.

Uses

As an active ingredient in personal care products and topical pharmaceutical preparations.

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Compendial compliance

Allantoin meets all requirements of the Ph. Eur. and USP when tested according to these compendia.

Safety

This product is safe for the intended use. Avoid ingestion, inhalation of dust or direct contact by applying suitable protective measures and personal hygiene.

For full safety information and necessary precautions, please refer to the respective DSM Material Safety Data Sheet.

Legal notice

The information given in this publication is based on our current knowledge and experience, and may be used at your discretion and risk. It does not relieve you from carrying out your own precautions and tests. We do not assume any liability in connection with your product or its use. You must comply with all applicable laws and regulations, and observe all third party rights.

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Safety Data Sheet

Allantoin

1. Product and Company Identification

| | | |
|---------------------|-----------------------------|-----------------------|
| Product name | Allantoin | |
| Product code | 50 0494 2 | |
| Company information | Enquiries: | Local representation: |
| | DSM Nutritional Products AG | LV0000 |
| | Wurmliweg 576 | LV1111 |
| | CH-4303 Kaiseraugst | LV2222 |
| | Switzerland | LV3333 |
| | | LV4444 |
| | Phone +41-62 866 23 14 | LV5555 |
| | Fax +41-62 866 25 10 | LV6666 |
| | | LV7777 |

2. Composition/Information on Ingredients

| | |
|-------------------|-------------------------------------------------------------|
| Chemical name | - (2,5-Dioxo-4-imidazolidinyl) urea |
| Synonyms | - 5-Ureidohydantoin - Glyoxyldiureide |
| CAS number | 97-59-6 |
| EINECS number | 202 592 8 |
| Empirical formula | C ₄ H ₆ N ₄ O ₃ |
| Molecular mass | 158.12 g/mol |

3. Hazards Identification

| | |
|------------------------|--------------------------------|
| Most important hazards | - No particular hazards known. |
|------------------------|--------------------------------|

4. First-aid measures

| | |
|-------------------|--------------------------------------------------------------------------------------------------------------|
| Eye contact | - rinse immediately with tap water for 10 minutes - open eyelids forcibly |
| Skin contact | - remove immediately contaminated clothes, wash affected skin with water and soap - do not use any solvents |
| Inhalation | - remove the casualty to fresh air and keep him/her calm - in the event of symptoms get medical treatment |
| Note to physician | - treat symptomatically |

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5. Fire-fighting measures

- | | |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Suitable extinguishing media | - water spray jet, dry powder, foam, carbon dioxide |
| Specific hazards | - formation of toxic combustion gases (nitrogen oxides (NO _x)) possible - consider dust explosion hazard |

6. Accidental release measures

- | | |
|-------------------------|------------------------------------------------------------------------|
| Methods for cleaning up | - collect solids (avoid dust formation) and hand over to waste removal |
|-------------------------|------------------------------------------------------------------------|

7. Handling and storage

Handling

- | | |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Technical measures | - avoid dust formation; consider dust explosion hazard - take precautionary measures against electrostatic charging - processing in closed systems, if possible superposed by inert gas (e.g. nitrogen) |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Storage

- | | |
|--------------------|------------------------------------------|
| Storage conditions | - cool and dry - in closed containers |
|--------------------|------------------------------------------|

8. Exposure controls/Personal protection

- | | |
|----------------------|----------|
| Engineering Measures | - see 7. |
|----------------------|----------|

Personal protective equipment

- | | |
|------------------------|--------------------------------------------------------------------|
| Respiratory protection | - respiratory protection not necessary during normal operations |
| Hand protection | - protective gloves (eg made of neoprene, nitrile or butyl rubber) |
| Eye protection | - safety glasses |

9. Physical and chemical properties

- | | |
|--------------|---------------------------------|
| Colour | white |
| Form | crystalline powder |
| Odour | odourless |
| Density | ~ 1.7 g/cm ³ (20 °C) |
| Bulk density | ~ 800 kg/m ³ |

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| | |
|---------------------|----------------------------------------------------------------------------------------------------|
| Solubility | 5.7 g/l, water (25 °C) 40 g/l, water (75 °C) 2 g/l, ethanol (20 °C) insoluble, chloroform |
| pH value (20 °C) | 4.0 to 6.0 (5 g/l) |
| Melting temperature | 225 to 236 °C (with decomposition) |

10. Stability and reactivity

| | |
|-----------|----------------------------------|
| Stability | - stable under normal conditions |
|-----------|----------------------------------|

11. Toxicological information

| | |
|----------------|----------------------------------------------|
| Acute toxicity | - LD ₅₀ > 5'000 mg/kg (oral, rat) |
| Local effects | - eye: non-irritant (rabbit) |
| Mutagenicity | - not mutagenic (Ames test) |

12. Ecological information

| | |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Ready biodegradability | - readily biodegradable |
| Inherent biodegradability | - well inherently biodegradable > 80 %, 28 d (Zahn-Wellens test, OECD No. 302 B) |
| Ecotoxicity | - barely toxic for fish (zebrafish) LC ₅₀ > 5000 mg/l (OECD No. 203) - <i>Pseudomonas putida</i> EC ₀ > 10 g/l |

13. Disposal considerations

| | |
|---------------------|---------------------------------------------------------------|
| Waste from residues | - observe local/national regulations regarding waste disposal |
|---------------------|---------------------------------------------------------------|

14. Transport information

| | |
|------|-------------------------------------------|
| Note | - not classified by transport regulations |
|------|-------------------------------------------|

15. Regulatory information

| | |
|------------------------------|-----------------------------------------------------------------------------------------------|
| Note | - no classification and labelling according to EU directives |
| Water hazard class (Germany) | 1: weakly hazardous for water (own classification according to directive VwVwS of 17.05.1999) |

Allantoin

16. Other information

| | |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------|
| Use | <ul style="list-style-type: none">- additive for cosmetics- ingredient in pharmaceutical preparations |
| Edition documentation | <ul style="list-style-type: none">- first edition |

Important Notice

DSM N.V., headquartered in Heerlen, The Netherlands, has acquired the vitamins, carotenoids, enzymes, food and feed ingredients, cosmetics ingredients and fine chemicals business (VFC Business) of the Roche group of companies, headquartered in Basel, Switzerland. Within the United States, DSM Nutritional Products, Inc. has purchased certain assets and assumed certain liabilities of the VFC Business formerly conducted by Roche Vitamins Inc. Please note that corporate names, trade names, trade and service marks and domain names containing the word "Roche" and the "Roche" logo will continue to appear on our business documentation during our transition. We appreciate your understanding and cooperation as we complete our rebranding program. Should you have any questions, or if DSM can be of further assistance to you, please do not hesitate to contact your Account Manager or our Account Management Center at: +41-62 866 23 14.