

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

1.1 Product identifier

Trade name : D-Panthenol

REACH Registration Number : 01-2119953737-24-0000

Substance name : Butanamide, 2,4-dihydroxy-N-(3-hydroxypropyl)-3,3-dimethyl-, (2R)-

CAS-No. : 81-13-0

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

Use of the Substance/Mixture : Ingredient for pharmaceutical products, Ingredient for personal care products

1.3 Details of the supplier of the safety data sheet

Company : DSM Nutritional Products Europe Ltd
PO Box 2676
CH-4002 Basel

Telephone : +41618157777

Telefax : +41618157770

E-mail address of person responsible for the SDS : sds.nutritionalproducts@dsm.com

1.4 Emergency telephone number

+41 848 00 11 77 (Carechem 24 International)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)
Not a hazardous substance or mixture.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)
Not a hazardous substance or mixture.

2.3 Other hazards

None known.

SECTION 3: Composition/information on ingredients

Synonyms : (R)-2,4-dihydroxy-N-(3-hydroxypropyl)-3,3-dimethylbutyramide

Brief description of the product : Substance

Molecular formula : C9-H19-N-O4

3.1 Substances

Hazardous components

Remarks : No hazardous ingredients

Further ingredients

Chemical name	CAS-No.	GHS Classification	Concentration
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	EC-No. Registration number		[%]
dexpanthenol (provitamin B5)	81-13-0 201-327-3 01-2119953737-24		>= 98 - <= 100

SECTION 4: First aid measures**4.1 Description of first aid measures**

- General advice : No hazards which require special first aid measures.
- If inhaled : Move to fresh air.
If symptoms persist, call a physician.
- In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
- In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : No specific symptoms known.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically.

SECTION 5: Firefighting measures**5.1 Extinguishing media**

- Suitable extinguishing media : Alcohol-resistant foam
Dry chemical
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special hazards arising from the substance or mixture

- Specific hazards during fire-fighting : Heating or fire can release toxic gas.

5.3 Advice for firefighters

- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
- Further information : Standard procedure for chemical fires.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

- Use personal protective equipment.

6.2 Environmental precautions

Try to prevent the material from entering drains or water courses.

6.3 Methods and material for containment and cleaning up

Wipe up with absorbent material (e.g. cloth, fleece).
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For personal protection see section 8.
For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Advice on safe handling : For personal protection see section 8.
- Advice on protection against fire and explosion : Take necessary action to avoid static electricity discharge. Product will burn under fire conditions.
- Hygiene measures : General industrial hygiene practice.

7.2 Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : To maintain product quality, do not store in heat or direct sunlight.
Keep container tightly closed and dry.
- Advice on common storage : No special restrictions on storage with other products.

7.3 Specific end use(s)

- Specific use(s) : Not applicable

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Personal protective equipment

- Eye protection : Safety glasses
- Hand protection : Glove material: for example nitrile rubber
- Skin and body protection : Lightweight protective clothing
- Respiratory protection : No personal respiratory protective equipment normally required.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

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Appearance	: clear, viscous liquid
Colour	: colourless - pale yellow
Odour	: odourless
Odour Threshold	: No information available.
pH	: 9.0 - 10.5 (5%) (as aqueous solution)
Freezing point	: -25.0 °C (995 hPa; OECD Test Guideline 102)
Boiling point/boiling range	: 235.6 °C (995 hPa; OECD Test Guideline 103) with decomposition 118 - 120 °C (0.027 hPa)
Flash point	: 150.5 °C (closed cup, Tested according to Directive 92/69/EEC.)
Evaporation rate	: not determined
Lower explosion limit	: not determined
Upper explosion limit	: not determined
Vapour pressure	: < 0.00001 hPa (25 °C; OECD Test Guideline 104) 0.0017 hPa (70 °C; OECD Test Guideline 104) 0.039 hPa (90 °C; OECD Test Guideline 104)
Relative vapour density	: not determined
Density	: 1.2 g/cm ³ (20 °C)
Water solubility	: > 509 g/l (22 °C; OECD Test Guideline 105)
Solubility in other solvents	: Methanol: easily soluble Ethanol: easily soluble Diethylether: slightly soluble Oils and fats: insoluble
Partition coefficient: n-octanol/water	: log Pow -1.06 (22 °C, pH 8; OECD Test Guideline 107)
Auto-ignition temperature	: not pyrophoric
Ignition temperature	: > 400 °C (ca. 1,030 hPa, Tested according to Directive 92/69/EEC.)
Thermal decomposition	: Not relevant
Viscosity, dynamic	: > 200,000 mPa.s (20 °C) Very viscous ca. 128 mPa.s (100 °C)
Explosive properties	: Not explosive
Oxidizing properties	: No data available

9.2 Other information

Refractive index	: 1.497 - 1.501 (589 nm)
Molecular weight	: 205.25 g/mol
Further information	: hygroscopic

SECTION 10: Stability and reactivity

10.1 Reactivity

No hazards to be specially mentioned.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Possible incompatibility with materials listed under section 10.5.

10.4 Conditions to avoid

Heat

10.5 Incompatible materials

Strong acids and strong bases
Strong oxidizing agents

10.6 Hazardous decomposition products

Nitrogen oxides (NO_x)
Carbon oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity	: LD50 (Rat): > 10,000 mg/kg
	: LD50 (Mouse): 15,000 mg/kg
Acute inhalation toxicity	: No data available
Acute dermal toxicity	: LD50 (Rat): > 3,500 mg/kg
Skin irritation	: No skin irritation (Rabbit, OECD Test Guideline 404)
	: no phototoxic skin reaction (Guinea pig, CTFA Test Guideline)
Eye irritation	: No eye irritation (Rabbit, OECD Test Guideline 405)
Sensitisation	: Did not cause sensitization. (Guinea pig)
	: no photoallergenic skin reaction (Guinea pig, CTFA Test Guideline)
Genotoxicity in vitro	: not mutagenic (In vitro gene mutation study in mammalian cells, OECD Test Guideline 476)
	: not genotoxic (Chromosome aberration test in vitro, OECD Test Guideline 473)

Carcinogenicity	: No indication for carcinogenicity known.
Reproductive toxicity	: This information is not available.
Teratogenicity	: No human information is available.
STOT - single exposure (Acute exposure)	: The substance or mixture is not classified as specific target organ toxicant, single exposure.
STOT - repeated exposure	: NOAEL (Oral, Rat) : 200 mg/kg bw/d Sub-chronic toxicity study (90-day)
Experience with human exposure	: Hypervitaminosis from provitamin B5 and vitamin B5 is unknown.
Experience with human exposure: Skin contact	: Allergic contact dermatitis (Cases have been reported rarely.)
Aspiration toxicity	: No aspiration toxicity classification

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish	: Oncorhynchus mykiss (rainbow trout) LC50 (96 h) > 1,000 mg/l (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	: Daphnia magna (Water flea) EC50 (48 h) > 100 mg/l (OECD Test Guideline 202)
Toxicity to algae	: Desmodesmus subspicatus (green algae) EbC50 (72 h) > 100 mg/l (OECD Test Guideline 201) : NOEC (72 h) 100 mg/l
Toxicity to bacteria	: activated sludge NOEC 569 mg/l No inhibition was observed under the biodegradation test conditions. (OECD Test Guideline 302B) : Pseudomonas putida EC50 (17 h) > 10,000 mg/l (nominal concentration) (DIN 38412)

12.2 Persistence and degradability

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Biodegradability : Readily biodegradable.
97 % (21 d)
(OECD Test Guideline 301A)

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water : log Pow -1.06 (22 °C , pH 8; OECD Test Guideline 107)

12.4 Mobility in soil

Distribution among environmental compartments : No data available

12.5 Results of PBT and vPvB assessment

Assessment : The substance does not fulfill the PBT criteria.
: The substance does not fulfill the vPvB criteria.

12.6 Other adverse effects

Additional ecological information : There is no data available for this product.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

14.1 UN number

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Remarks : Not classified as dangerous in the meaning of transport regulations.

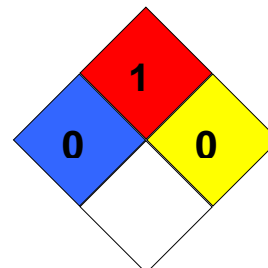
14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

NFPA Classification : Health hazard: 0
Fire Hazard: 1
Reactivity Hazard: 0



15.2 Chemical safety assessment

A Chemical Safety Assessment is not required for this substance.

SECTION 16: Other information

Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief 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

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to be considered a warranty or quality specification. 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.

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