

Vitamin B12 Crystalline

0429155

Version 4.0

Revision Date 20.04.2016

Date of last issue: 14.10.2015

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

1.1 Product identifier

Trade name : Vitamin B12 Crystalline

Substance name : cyanocobalamin
CAS-No. : 68-19-9

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

Use of the Sub-
stance/Mixture : Ingredient/additive for dietary supplements, Ingredient for
pharmaceutical products

1.3 Details of the supplier of the safety data sheet

Company : DSM Nutritional Products Europe Ltd
PO Box 2676
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.

Other hazards

Risk of dust explosion.

SECTION 3: Composition/information on ingredients

Brief description of the prod-
uct : Substance
Molecular formula : C63-H88-Co-N14-O14-P

3.1 Substances

Hazardous components

Remarks : No hazardous ingredients

Further ingredients

Chemical name	CAS-No. EC-No. Registration number	GHS Classification	Concentration [%]
cyanocobalamin (Vitamin B12)	68-19-9 200-680-0		>= 96

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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 : Water
Foam

5.2 Special hazards arising from the substance or mixture

- Specific hazards during fire-fighting : None known.

5.3 Advice for firefighters

- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
- Further information : Consider dust explosion hazard.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Use personal protective equipment.
Avoid dust formation.

6.2 Environmental precautions

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

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6.3 Methods and material for containment and cleaning up

Sweep up and shovel.

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 : Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed. Take precautionary measures against static discharges.

Hygiene measures : General industrial hygiene practice.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Protect against light.
Protect from humidity.

Keep container tightly closed and dry.

Advice on common storage : No special restrictions on storage with other products.

Recommended storage temperature : < 25 °C

7.3 Specific end use(s)

Specific use(s) : Not applicable

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
cyanocobalamin	68-19-9	TWA	0.3 mg/m ³	DSM Internal Limit

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 : In the case of dust or aerosol formation use respirator with an approved filter.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

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Appearance	: crystalline, powder
Colour	: red - purple
Odour	: odourless
Odour Threshold	: No information available.
pH	: 6.0 (1 g/l, 20 °C)
Melting point/range	: > 300 °C with decomposition
Boiling point/boiling range	: not determined
Flash point	: Not applicable
Flammability (solid, gas)	: May form combustible dust concentrations in air.
Vapour pressure	: < 0.00001 hPa (calculated (citation from literature))
Relative vapour density	: Not applicable
Density	: not determined
Water solubility	: ca. 12.5 g/l
Solubility in other solvents	: Ethanol: slightly soluble Acetone: insoluble Chloroform: insoluble Ether: insoluble
Partition coefficient: n-octanol/water	: log Pow ca. -2.6
Auto-ignition temperature	: No data available
Thermal decomposition	: Decomposes on heating. Potential for exothermic hazard
Explosive properties	: Not explosive
Oxidizing properties	: No data available

9.2 Other information

Combustibility index for deposited dust	: 3 (23 °C) : 3 (100 °C)
Dust explosion class	: St(H)1 (Milled sample, Median value of the tested sample 0.034 mm, Loss on drying 2.5 %; The value was determined in the modified Hartmann tube.)
Minimum ignition energy	: 30 - 100 mJ (Milled sample, Median value of the tested sample 0.034 mm, Loss on drying 2.5 %, EN 13821) The Minimum ignition energy (MIE) of a dust/air mix depends on the particle size the water content and the temperature of the dust. The finer and the dryer the dust the lower the MIE. : General remark: The indicated dust explosion characteristics are only valid for this product and are sensitive to the sample's parameters.
Powder volume resistivity	: ca. 6E+11 Ohmm (Product sample, Median value of the tested sample 0.193 mm, Loss on drying 1.5 %)

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The material can accumulate static charge and can therefore cause electrical ignition.

Minimum ignition temperature of a dust/air mix : 470 °C (Median value of the tested sample 0.193 mm) determined in the BAM oven

Molecular weight : 1,355.4 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

Dust may form explosive mixture in air.

10.4 Conditions to avoid

Heat

10.5 Incompatible materials

Strong acids and strong bases
Strong oxidizing agents

10.6 Hazardous decomposition products

Carbon oxides, Nitrogen oxides (NOx), Phosphorus compounds

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity : LD50 (Mouse): > 5,000 mg/kg

Skin irritation : Prolonged skin contact may cause skin irritation.

Eye irritation : No eye irritation (Rabbit)
: Dust contact with the eyes can lead to mechanical irritation.

Sensitisation : No data available

Carcinogenicity : No indication for carcinogenicity known.

Genotoxicity in vitro : negative (Ames test)

Reproductive toxicity : This information is not available.

Teratogenicity	: not teratogenic
STOT - single exposure (Acute exposure)	: The substance or mixture is not classified as specific target organ toxicant, single exposure.
STOT - repeated exposure	: This information is not available.
Experience with human exposure	: RDA (Recommended Daily Allowance) 0.001 mg
Experience with human exposure: Skin contact	: May cause sensitisation by skin contact., (Cases have been reported rarely.)
Further information	: May cause skin discolorations.
Aspiration toxicity	: No aspiration toxicity classification

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to daphnia and other aquatic invertebrates	: Daphnia magna (Water flea) EC50 (48 h) > 100 mg/l
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12.2 Persistence and degradability

Biodegradability	: Not readily biodegradable. <= 5 %
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12.3 Bioaccumulative potential

Bioaccumulation	: Species: Chasmichthys gulosus / marine fish Exposure time: 7 d Temperature: 15 °C Bioconcentration factor (BCF): 3 Elimination: Depuration DT50: ca. 40 days Does not bioaccumulate.
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Partition coefficient: n-octanol/water	: log Pow ca. -2.6
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12.4 Mobility in soil

Distribution among environmental compartments	: No data available
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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.
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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.

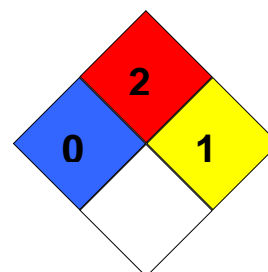
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

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: 2
Reactivity Hazard: 1



15.2 Chemical safety assessment

A Chemical Safety Assessment is not required for this substance.

SECTION 16: Other information

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



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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 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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