DORMEX®

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

1.1 Product identifier

Trade name	:	DORMEX®
Registration number	:	if available listed in Chapter. 3

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

Use of the Substance/Mixture	:	Agricultural products

1.3 Details of the supplier of the safety data sheet

Company	:	AlzChem Trostberg GmbH Dr.-Albert-Frank-Str. 32 83308 Trostberg, Germany
Telephone	:	+49 8621 86-3351
E-mail address of person responsible for the SDS	:	alz-pst@alzchem.com

1.4 Emergency telephone number

Emergency telephone number	:	+49 8621 86-2776 AlzChem Trostberg GmbH, Fire Brigade

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 3	H301: Toxic if swallowed.
Acute toxicity, Category 4	H312: Harmful in contact with skin.
Skin corrosion, Category 1	H314: Causes severe skin burns and eye damage.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Carcinogenicity, Category 2	H351: Suspected of causing cancer.
Reproductive toxicity, Category 2	H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child.
Specific target organ toxicity - repeated exposure, Category 2	H373: May cause damage to organs through prolonged or repeated exposure.
Chronic aquatic toxicity, Category 3	H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Danger

Hazard statements :

H301	Toxic if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P260	Do not breathe mist or vapours.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ 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.

Storage:

P405	Store locked up.

2.3 Other hazards

A PBT/vPvB evaluation is not available, since a chemical safety evaluation is not required / has not been carried out.
Violent, exothermic reaction with acids, bases and temperatures above 40°C.
Use of alcoholic beverages enhances the toxic effects.
The oral take-up may lead to acute dysfunctions of the blood circuit and/or the central nervous system.
Dermal absorption possible

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : aqueous solution with cyanamide

Hazardous components

Chemical Name	CAS-No. EC-No.	Classification	Concentration (% w/w)

	Registration number		
cyanamide; carbamonitril	420-04-2 206-992-3 01-2119429091-49	Acute Tox. 3; H301 Acute Tox. 3; H311 Skin Corr. 1; H314 Eye Dam. 1; H318 Skin Sens. 1; H317 Carc. 2; H351 Repr. 2; H361fd STOT RE 2; H373 Aquatic Chronic 3; H412	49 - 51
Orthophosphoric acid	7664-38-2 231-633-2	Skin Corr. 1B; H314 Eye Dam. 1; H318	< 2

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Seek medical advice in case of symptoms caused by eye or skin contact, inhalation or swallowing.
After absorbing large amounts of substance:
Immediately contact a doctor or Poisons Information Centre, and follow the advice given.
Show this safety data sheet to the doctor in attendance.

If inhaled : Move to fresh air.
Consult a physician after significant exposure.

In case of skin contact : Take off immediately all contaminated clothing.
Wash off immediately with plenty of water.
Call a physician immediately.

In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Keep eye wide open while rinsing.

If swallowed : Rinse mouth.
If conscious, drink plenty of water.
Do NOT induce vomiting.
Call a physician immediately.
If conscious and medical aid is not available immediately, induce vomiting. Be sure to keep victim´s head below hips to avoid aspiration of vomitus into the lungs.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Erythema
Fall in blood pressure
increased pulse frequency,
Nausea
feeling of burning,
headache
Irritation of mucous membranes
after the intake of large amounts circulatory depression up to unconsciousness are possible

Risks	:	Caution: Alcoholic beverages interact with cyanamide. Symptoms showing flush are possible (difficulty in breathing, bright red face). The symptoms of this interaction disappear rapidly and are generally harmless.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	:	No specific antidote known. Symptomatic treatment. After the intake of small amounts: administer activated charcoal, sodium sulfate and much liquid orally. After the intake of large amounts: monitoring of circulatory functions, if necessary irrigation of the stomach preventing aspiration and taking into account the irritating properties to mucous membranes. In case of skin irritation, use corticoid containing external preparations.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Water spray, foam, CO2, dry powder.
Unsuitable extinguishing media	:	High volume water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products	:	Ammonia Nitrogen oxides (NOx) Carbon oxides Hydrocyanic acid (HCN)

5.3 Advice for firefighters

Special protective equipment for firefighters	:	In the case of fire, wear respiratory protective equipment independent of surrounding air and chemical protective suit.
Further information	:	Containers exposed to heat (fire) may build up pressure. Cool by splashing with water. Closed container may rupture if strongly heated. Do not contaminate surface water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Wear personal protective equipment; see section 8. Ensure adequate ventilation.

6.2 Environmental precautions

Environmental precautions : Try to prevent the material from entering drains or water courses.
Dike or contain spill.
Shut off source of leak if safe to do so.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Absorb with liquid-binding material, e. g.: saw dust, sand, universal binder
Pour into containers which can be tightly sealed.
Disposal according to local authority regulations.
Don't use a high-pressure cleaner in order to avoid the formation of aerosols.
Rinse away any residue with plenty of water.

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : For professional use only.
Use only in well-ventilated areas.
Do not consume alcoholic beverages during handling cyanamide.
Observe the rules usually applicable when handling chemicals.

Advice on protection against fire and explosion : Keep away from combustible material. Avoid temperatures above 35°C Do not concentrate the product by evaporation. May cause violent decomposition.

Hygiene measures : Do not inhale vapours / aerosols. Contact with skin, eyes and clothes must be strictly avoided Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Do not consume alcoholic beverages prior to, during and 24 hours after handling the product. Do not eat, drink or smoke while working. Wash hands, and/or face before breaks and when workday is finished. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep away from direct sunlight. Keep locked up.

Advice on common storage : Incompatible with acids and bases.
Keep away from food, drink and animal feedingstuffs.

Recommended storage temperature : < 20 °C

Packaging material : Suitable material: polyethylene, Polypropylene, enamel, Austenitic steel

7.3 Specific end use(s)

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
cyanamide; carbamonitril	420-04-2	TWA	0.58 ppm 1 mg/m3	2006/15/EC
Further information	Identifies the possibility of significant uptake through the skin, Indicative			
Orthophosphoric acid	7664-38-2	TWA	1 mg/m3	2000/39/EC
Further information	Indicative			
		STEL	2 mg/m3	2000/39/EC
Further information	Indicative			

8.2 Exposure controls

Personal protective equipment

Eye protection : Tightly fitting safety goggles

Hand protection
- Material : Nitrile rubber, Recommendation: Camatril® Velours (732)
- Break through time : > 480 min
- Glove thickness : 0.4 mm
- Glove length : elbow-length rubber gloves
- Directive : DIN EN 374
- Manufacturer : Kächele-Cama Latex GmbH (KCL), Germany

Skin and body protection : Chemical-resistant protective suit, type 3, EN 14605:2003, e.g. Pro-Chem® IC
rubber boots (EN 13832)

Respiratory protection : If workplace exposure limits are exceeded and/or larger amounts are released (leakage, spilling, dust) the indicated respiratory protection should be used.
Suitable filter: B, code colour grey

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : aqueous solution

Colour : blue

Odour : odourless

pH : 3.9 - 4.9, (20 °C)

Melting point/range : -15 °C

Flash point	:	Not applicable
Vapour pressure	:	0.005 hPa (20 °C) cyanamide
Density	:	ca. 1.06 g/cm3 (20 °C)
Solubility(ies)		
Water solubility	:	completely miscible (20 °C)
Partition coefficient: n-octanol/water	:	log Pow: -0.72
Viscosity		
Viscosity, kinematic	:	0.931 mm2/s (20 °C) Method: OECD 114

9.2 Other information

Conductivity	:	ca. 12 mS/cm at 10 °C

SECTION 10: Stability and reactivity

10.1 Reactivity

10.2 Chemical stability

Product is supplied in stabilised form.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Violent, exothermic reaction.

10.4 Conditions to avoid

Conditions to avoid	:	temperatures > 35 °C Keep away from direct sunlight. Do not concentrate the product by evaporation. May cause violent decomposition.

10.5 Incompatible materials

Materials to avoid	:	Acids and bases combustible substances

10.6 Hazardous decomposition products

Under fire conditions:, Ammonia, Nitrogen oxides (NOx), Carbon oxides, Hydrocyanic acid (HCN)

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute oral toxicity : Assessment: Toxic if swallowed.

Acute inhalation toxicity : Assessment: based on available data, the classification criteria are not met.

Acute dermal toxicity : LD50 (Rabbit): 1696 mg/kg
Method: US-EPA-method
Assessment: Harmful in contact with skin.
Remarks: IUCLID

Components:

cyanamide; carbamonitril:

Acute oral toxicity : LD50 (Rat, male/female): related to 100% active substance 142 mg/kg
Assessment: Toxic if swallowed.
Remarks: IUCLID

Acute inhalation toxicity : LC50 (rat): > 2 mg/l
Exposure time: 4 h
Method: OECD Test Guideline 403
Test substance: 50 % cyanamide (as aqueous solution)
Assessment: based on available data, the classification criteria are not met.
Remarks: maximum concentration in the test: no animals died.
IUCLID

Acute dermal toxicity : LD50 (Rabbit): related to 100% active substance 848 mg/kg
Assessment: Toxic in contact with skin.
Remarks: IUCLID

Skin corrosion/irritation

Product:

Species: Human Skin Model
Exposure time: 0.05 - 1 h
Method: OECD Test Guideline 431
Result: Causes burns.
Remarks: IUCLID

Components:

cyanamide; carbamonitril:
Species: Rabbit
Method: OECD Guide-line 404
Result: Causes burns.
Remarks: IUCLID

Serious eye damage/eye irritation

Product:

Assessment: Causes serious eye damage.

Components:

cyanamide; carbamonitril:
Assessment: Risk of serious damage to eyes.
Remarks: Due to the result "corrosive" of the acute dermal irritation study, no acute eye irritation study was performed.

Respiratory or skin sensitisation

Product:

Assessment: May cause an allergic skin reaction.

Components:

cyanamide; carbamonitril:
Test Type: maximization test
Species: guinea pig
Result: Sensitising
Remarks: IUCLID

Germ cell mutagenicity

Components:

cyanamide; carbamonitril:

Germ cell mutagenicity- Assessment	:	In vitro tests did not show mutagenic effects Remarks: IUCLID

Carcinogenicity

Product:

Carcinogenicity - Assessment	:	Suspected of causing cancer.

Components:

cyanamide; carbamonitril:

Carcinogenicity - Assessment	:	Suspected of causing cancer. Remarks: IUCLID

Reproductive toxicity

Product:

Reproductive toxicity - Assessment	:	Suspected of damaging fertility. Suspected of damaging the unborn child.

Components:

cyanamide; carbamonitril:

Reproductive toxicity - Assessment	:	May damage fertility. Suspected of damaging the unborn child. Remarks: IUCLID

STOT - single exposure

Components:

cyanamide; carbamonitril:
Assessment: based on available data, the classification criteria are not met.

STOT - repeated exposure

Product:

Assessment: May cause damage to organs through prolonged or repeated exposure.

Components:

cyanamide; carbamonitril:
Assessment: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

Experience with human exposure

Product:

General Information : Alcohol consumption increases the effect of the poison.

Components:

cyanamide; carbamonitril:

General Information : Interactions with alcohol (ethanol).
Use of alcoholic beverages enhances the toxic effects.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss): 180 mg/l
Exposure time: 96 h
Method: OECD 204
Remarks: IUCLID

NOEC (Oncorhynchus mykiss): 7.4 mg/l
Exposure time: 21 d
Method: OECD 204
Remarks: IUCLID

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna): 6.5 mg/l
Exposure time: 48 h
Method: OECD 202 part 1
Remarks: IUCLID

Toxicity to algae : ErC50 (selenastrum capricornutum): 27.5 mg/l
End point: growth rate
Exposure time: 90 h
Method: OECD 201
Remarks: IUCLID

Toxicity to bacteria	:	EC 10 (Pseudomonas putida): 314 mg/l Remarks: IUCLID
Toxicity to terrestrial organisms	:	LD50: ca. 100 µg/insect Species: honeybees Test substance: Product similar composition
Ecotoxicology Assessment Chronic aquatic toxicity	:	Harmful to aquatic life with long lasting effects.

Components:

cyanamide; carbamonitril:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss): related to 100% active substance 90 mg/l Exposure time: 96 h Remarks: IUCLID NOEC (Oncorhynchus mykiss): related to 100% active substance 3.7 mg/l Exposure time: 21 d Remarks: IUCLID
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna): related to 100% active substance 3.2 mg/l Exposure time: 48 h Remarks: IUCLID NOEC (Daphnia magna): related to 100% active substance 0.1044 mg/l Exposure time: 21 d Remarks: IUCLID
Toxicity to algae	:	ErC50 (selenastrum capricornutum): related to 100% active substance 13.5 mg/l End point: growth rate Exposure time: 90 h Remarks: IUCLID
Toxicity to bacteria	:	EC 10 (Pseudomonas putida): related to 100% active substance 157 mg/l Remarks: IUCLID
Toxicity to terrestrial organisms	:	LD50: ca. 100 µg/insect Species: honeybees Test substance: 50 % solution
Ecotoxicology Assessment Chronic aquatic toxicity	:	Harmful to aquatic life with long lasting effects.

12.2 Persistence and degradability

Product:

Biodegradability	:	Remarks: Readily biodegradable under environmental conditions.

Components:

cyanamide; carbamonitril:

Biodegradability : Inoculum: activated sludge
Biodegradation: > 99 %
Method: (CO2; modif. Sturm test / OECD 301 B)
Test substance: 50 % solution
Remarks: Readily biodegradable

Result: rapidly degradable
Method: Water-sediment test.
Test substance: 50 % solution
Remarks: Biodegradable in the soil (sediment).

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No bioaccumulation is to be expected (log Pow <= 4).

Components:

cyanamide; carbamonitril:

Partition coefficient: n-octanol/water : log Pow: -0.72
Remarks: (measured)

12.4 Mobility in soil

Product:

Distribution among environmental compartments : Remarks: Mobile in soils

Components:

cyanamide; carbamonitril:

Distribution among environmental compartments : Adsorption/Soil
Medium:Soil
Koc: < 6.81
: Remarks: Mobile in soils, IUCLID

12.5 Results of PBT and vPvB assessment

Product:

Assessment : A PBT/vPvB evaluation is not available, since a chemical safety evaluation is not required / has not been carried out..

12.6 Other adverse effects

Product:

Additional ecological information : Do not allow entrance in sewage water, soil stretches of water, groundwater, drainage systems.

Components:

cyanamide; carbamonitril:

Additional ecological information	:	Under acid conditions (pH < 4) the product hydrolyses to urea, which is easily biodegradable.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	Must be brought to an adequate waste treatment facility, in conformity with applicable waste disposal regulations.
Contaminated packaging	:	Packaging, that can not be reused after cleaning must be disposed or recycled in accordance with all federal, national and local regulations.

SECTION 14: Transport information

14.1 UN number

ADR	:	UN 2922
RID	:	UN 2922
IMDG	:	UN 2922
IATA	:	UN 2922

14.2 UN proper shipping name

ADR	:	CORROSIVE LIQUID, TOXIC, N.O.S. (cont. Cyanamide)
RID	:	CORROSIVE LIQUID, TOXIC, N.O.S. (cont. Cyanamide)
IMDG	:	CORROSIVE LIQUID, TOXIC, N.O.S. (cont. Cyanamide)
IATA	:	Corrosive liquid, toxic, n.o.s. (cont. Cyanamide)

14.3 Transport hazard class(es)

ADR	:	8 (6.1)
RID	:	8 (6.1)
IMDG	:	8 (6.1)
IATA	:	8 (6.1)

14.4 Packing group

ADR

Packing group	:	II
Classification Code	:	CT1
Hazard Identification Number	:	86
Labels	:	8 (6.1)
Tunnel restriction code	:	(E)

RID

Packing group	:	II

Classification Code	:	CT1
Hazard Identification Number	:	86
Labels	:	8 (6.1)

IMDG

Packing group	:	II
Labels	:	8 (6.1)
EmS Code	:	F-A, S-B

IATA

Packing instruction (cargo aircraft)	:	855
Packing instruction (passenger aircraft)	:	851
Packing instruction (LQ)	:	Y840
Packing group	:	II
Labels	:	Corrosives, Toxic Substances
Remarks	:	Clear of living quarters.
Remarks	:	ERG-Code 8P

14.5 Environmental hazards

ADR

Environmentally hazardous : no

RID

Environmentally hazardous : no

IMDG

Marine pollutant : no

14.6 Special precautions for user

Remarks : Keep separate from foodstuffs, luxury foods, feedstuffs

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

The components of this product are reported in the following inventories:

REACH	:	Listed
TSCA	:	Listed
DSL	:	Listed
IECSC	:	Listed
ENCS	:	Listed
KECI	:	Listed
AICS	:	Listed

NZIoC	:	Listed
TCSI	:	Listed

15.2 Chemical Safety Assessment

No substance safety assessment is required for this product because use of the substance is already regulated within the framework of specific legal regulations.

SECTION 16: Other information

Full text of H-Statements

H301	:	Toxic if swallowed.
H311	:	Toxic in contact with skin.
H314	:	Causes severe skin burns and eye damage.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
H351	:	Suspected of causing cancer.
H361fd	:	Suspected of damaging fertility. Suspected of damaging the unborn child.
H373	:	May cause damage to organs through prolonged or repeated exposure.
H412	:	Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Chronic	:	Chronic aquatic toxicity
Carc.	:	Carcinogenicity
Eye Dam.	:	Serious eye damage
Repr.	:	Reproductive toxicity
Skin Corr.	:	Skin corrosion
Skin Sens.	:	Skin sensitisation
STOT RE	:	Specific target organ toxicity - repeated exposure

(Q)SAR - (Quantitative) Structure Activity Relationship; 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; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; DIN - Standard of the German Institute for Standardisation; 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; ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; 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; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISO - International Organisation for Standardization; 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; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; 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; TRGS - Technical Rule for Hazardous Substances; UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative; DSL - Domestic Substances List (Canada); KECI - Korea Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); AICS - Australian Inventory of Chemical Substances; IECSC - Inventory of Existing Chemical Substances in China; ENCS - Existing and New Chemical Substances (Japan); ISHL - Industrial Safety and Health Law (Japan); PICCS - Philippines Inventory of Chemicals and Chemical Substances; NZIoC - New Zealand Inventory of Chemicals; TCSI - Taiwan Chemical Substance Inventory; CMR - Carcinogen, Mutagen or Reproductive Toxicant; GLP - Good Laboratory Practice

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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