1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product information

Trade name : DORMEX®
Use of the Substance / Preparation : Agricultural products
Company : AlzChem LLC
650 Village Trace
Marietta, GA 30067
USA

Telephone : 770-804-0371
Telefax : 770-804-0375

US: CHEMTREC EMERGENCY NUMBER : 800-424-9300
CANADA: CANUTEC EMERGENCY NUMBER : 613-996-6666
Product Regulatory Services : 973-541-8060

2. HAZARDS IDENTIFICATION

*** EMERGENCY OVERVIEW ***

Form - aqueous solution  Color - blue  Odor - odourless

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

Toxic by inhalation and if swallowed.
Harmful in contact with skin.
Corrosive. Causes burns if swallowed or inhaled. Causes severe eye and skin burns.
May cause sensitization by skin contact.
Risk of serious damage to eyes.

Eye contact
Corrosive. May cause burns resulting in permanent damage.
Risk of serious damage to eyes.

Skin Contact
Corrosive. May cause burns resulting in permanent damage.
May cause skin sensitization, an allergic reaction, which becomes evident on re-exposure to this material.
Inhalation
Toxic.  Harmful if inhaled.
Corrosive.  May cause burns resulting in permanent damage.

Ingestion
Toxic. Harmful if swallowed.
Corrosive and may cause severe and permanent damage to mouth, throat and stomach.

Potential environmental effect
Toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature
aqueous preparation with cyanamide

Information on ingredients / Hazardous components

cyanamide; carbamonitril
   CAS-No. 420-04-2 Percent (Wt./ Wt.) 49 - 51 %

orthophosphoric acid
   CAS-No. 7664-38-2 Percent (Wt./ Wt.) < 2 %

Other information
The preparation itself has been tested/classified (see items 11 and 15).

This material is classified as hazardous under OSHA regulations.

4. FIRST AID MEASURES

General advice
If feeling unwell seek medical advice.
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.

Inhalation
Move to fresh air.
Consult a physician after significant exposure.

Skin contact
Take off all contaminated clothing immediately.
Wash off immediately with plenty of water.
Consult a physician immediately.

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.

Ingestion
Rinse out 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.

**Notes to physician**

**Symptoms:**
- erythema
- fall in blood pressure
- increased pulse frequency,
- discomfort
- nausea
- feeling of burning,
- headache
- irritation of mucous membranes
- after the intake of large amounts circulatory depression up to unconsciousness are possible

**Caution:** Alcoholic beverages interact with cyanamide. Symptoms showing flush are possible (difficulty in breathing, bright red face).

**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.

---

### 5. FIRE-FIGHTING MEASURES

**Flash point** not applicable

**Suitable extinguishing media**
carbon dioxide (CO2), dry powder, dry sand, water spray, foam

**Extinguishing media which must not be used for safety reasons**
high volume water jet

**Specific hazards during fire fighting**
In the case of fire, the following hazardous smoke fumes may be produced: ammonia nitrous gases Carbon oxides Hydro-cyanic acid

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained positive-pressure breathing apparatus, (MSHA/NIOSH approved or equivalent) and full protective gear.

**Further information**
Do not contaminate surface water. Cool containers / tanks with water spray.

---

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions**
Use personal protective equipment.
Avoid contact with skin, eyes and clothing.
Ensure adequate ventilation.

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.
Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, rivers, groundwater or soil.

Methods for cleaning up
Absorb with liquid-binding material, e.g.: saw dust, sand, universal binder
Sweep up and shovel.
Avoid dust formation.
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.
Clean contaminated floors and objects thoroughly while observing environmental regulations.
Rinse away any residue with plenty of water.

7. HANDLING AND STORAGE

Handling

Safe handling advice
For professional use only.
Do not consume alcoholic beverages during handling cyanamide.
Use only in well-ventilated areas.
Avoid contact with skin, eyes and clothing.
Handle in accordance with good industrial hygiene and safety practices.

Advice on protection against fire and explosion
Keep away from combustible material.
Avoid temperatures above 40°C.
Do not concentrate the product by evaporation. May cause violent decomposition.

Storage

Requirements for storage areas and containers
Keep away from direct sunlight.
Suitable materials: polyethylene, polypropylene, enamel, Austenitic steel

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

Storage stability
< 20 °C

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Product occupational exposure guidelines
• **Cyanamid**
  
  CAS-No. 420-04-2  
  EC-No. 206-992-3  
  Control parameters 2 mg/m³  
  Time Weighted Average (TWA): (ACGIH)  
  Control parameters 2 mg/m³  
  Time Weighted Average (TWA): (ACGIH)  
  Control parameters 5 mg/m³ as CN  
  Permissible Exposure Limit (PEL): (US CA OEL)  
  Control parameters as CN  
  Skin designation: (OSHA Z1)  

  Remarks  
  Can be absorbed through the skin.

### Component occupational exposure guidelines

**orthophosphoric acid**

- CAS-No. 7664-38-2  
- Control parameters 1 mg/m³  
- Time Weighted Average (TWA): (ACGIH)  
- Control parameters 3 mg/m³  
- Short Term Exposure Limit (STEL): (ACGIH)  
- Control parameters 1 mg/m³  
- PEL: (OSHA Z1)  
- Control parameters 1 mg/m³  
- Time Weighted Average (TWA): (US CA OEL)  
- Short Term Exposure Limit (STEL): (US CA OEL)  

**cyanamide; carbamonitril**

- CAS-No. 420-04-2  
- Control parameters 2 mg/m³  
- Time Weighted Average (TWA): (ACGIH)  
- Control parameters 2 mg/m³  
- Time Weighted Average (TWA): (ACGIH)  
- Control parameters 5 mg/m³ as CN  
- Permissible Exposure Limit (PEL): (US CA OEL)  
- as CN  
- Skin designation: (OSHA Z1)  

  Remarks  
  Can be absorbed through the skin.

### Personal protective equipment

#### 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

A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use.

Use NIOSH approved particulate mask with APF of 5. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.

#### Hand protection

Wear protective gloves made of the following materials:

- **Glove material**  
  - nitrile rubber, Recommendation: Camatril 730, Kächele-Cama Latex GmbH (KCL), Germany
- **Material thickness** 0.4 mm
- **Break through time** > 480 min
Method: DIN EN 374

Glove material: Polychloroprene with natural-latex liner, Recommendation: Camapren 722, Kächele-Cama Latex GmbH (KCL), Germany

Material thickness: 0.6 mm

Break through time: > 480 min

The above mentioned hand protection is based on knowledge of the chemistry and anticipated uses of this product but it may not be appropriate for all workplaces. A hazard assessment should be conducted prior to use to ensure suitability of gloves for specific work environments and processes prior to use.

Eye protection

Tightly fitting safety goggles

Skin and body protection

Complete suit protecting against chemicals

Hygiene measures

When using, do not eat, drink or smoke.

Wash hands before breaks and immediately after handling the product.

Do not consume alcoholic beverages prior to, during and 24 hours after handling the product.

Take off contaminated clothing and shoes immediately.

Wash contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form: aqueous solution

Color: blue

Odor: odourless

Physical state: liquid

Safety data

pH: 3.9 - 4.9 (20 °C)

Melting point/range: -15 °C

Flash point: not applicable

Vapor pressure: 0.005 hPa (20 °C) related to substance: cyanamide

Density: ca. 1.06 g/cm³ (20 °C)

Metal corrosion:

0.11 mm/a

Not corrosive to steel.

0.06 mm/a

Not corrosive to aluminium.

Water solubility:

(20 °C) completely miscible
### Partition coefficient (n-octanol/water)

- **log Pow:** -0.72

### Viscosity, dynamic

- 0.987 mPa.s (20 °C)
- **Method:** calculated

### Viscosity, kinematic

- 0.931 mm²/s (20 °C)
- **Method:** OECD 114

### Conductivity

- ca. 9.43 µS/cm

### Further information

- **Other information:** No further physicochemical data were determined.

### 10. STABILITY AND REACTIVITY

#### Conditions to avoid

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

#### Materials to avoid

- acids and bases, combustible substances

#### Hazardous decomposition products

- ammonia

#### Hazardous reactions

- Violent, exothermic reaction.
- Product is supplied in stabilised form.

### 11. TOXICOCLOGICAL INFORMATION

#### Product Acute oral toxicity

- **LD50 Rat (male/female):** 446 mg/kg
- **Method:** OECD Test Guideline 401
- **Own test result.**
- **related to substance:** Product

#### Product Acute inhalation toxicity

- Maximum attainable concentration Rat: > 2 mg/l / 4 h maximum concentration in the test: no animals died.
- **Own test result.**
- **related to substance:** Product

#### Product Acute dermal toxicity

- LD50 Rabbit: 1696 mg/kg
- **Method:** EPA FIFRA 81-2
- **Own test result.**
- **related to substance:** Product

#### Product Skin irritation

- **Human Skin Model / 0.05 - 1 h:** Causes burns.
- Corrosive to skin
- **Method:** OECD Guideline 431, In Vitro Skin Corrosion: Human Skin Model Test, “13 April 2004”
- **Own test result:**
related to substance: Product

Product Eye irritation
Causes serious eye damage.
related to substance: Product

Product Sensitization
guinea pig: sensitizing
Test substance: This information is derived from evaluation of or a test result for a similar compound (conclusion based on analogy).
Own test result.

Product Mutagenicity assessment
Not mutagenic in AMES Test.
Did not show mutagenic effects in animal experiments.
Own study

Product Human experience
Interactions with alcohol (ethanol).

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

Biodegradability
Not readily biodegradable.
Evidence for inherent biodegradability.
Biodegradable in the soil (sediment).

Ecotoxicity effects

Toxicity to fish
LC50 Oncorhynchus mykiss: 180 mg/l / 96 h
Method: OECD 204
Own test result.
related to substance: Product

NOEC Oncorhynchus mykiss: 7.4 mg/l / 21 d
Method: OECD 204
Own test result.
related to substance: Product

Toxicity to daphnia
EC50 Daphnia magna: 6.5 mg/l / 48 h
Method: OECD 202 part 1
Own test result.
related to substance: Product

Toxicity to algae
selenastrum capricornutum: 27.5 mg/l / 90 h
End point: growth rate
Method: OECD TG 201
Own test result.
related to substance: Product

Toxicity to bacteria
EC 10 Pseudomonas putida: 314 mg/l
Own test result.
related to substance: Product
Toxicity in other terrestrial non-mammals

LD50 honeybees: ca. 100 µg/insect related to substance: Product similar composition

General Ecological Information

Do not allow entrance in sewage water, soil stretches of water, groundwater, drainage systems.

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

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

Advice on disposal
Waste must be disposed of in accordance with federal, state and local regulations. Incineration is the preferred method.

14. TRANSPORT INFORMATION

D.O.T. Road/Rail

Class 8
UN-No 2922
Packing group II
Subsidiary risk 6.1
Proper shipping name CORROSIVE LIQUID, TOXIC, N.O.S.
Technical Name (cont. Cyanamide)

Sea transport IMDG-Code

Class 8
UN-No 2922
Packing group II
Subsidiary risk 6.1
EmS F-A, S-B
Proper technical name (Proper shipping name)
CORROSIVE LIQUID, TOXIC, N.O.S.
(cont. Cyanamide)

Air transport ICAO-TI/IATA-DGR

Class 8
UN-No 2922
Packing group II
Subsidiary risk 6.1
Proper technical name (Proper shipping name)
Corrosive liquid, toxic, n.o.s.
(cont. Cyanamide)

Loading instructions/Remarks

IATA_C ERG-Code 8P
IATA_P ERG-Code 8P
15. REGULATORY INFORMATION

Information on ingredients / Non-hazardous components

This product contains the following non-hazardous components

- **water**
  - CAS-No.: 7732-18-5
  - Percent (Wt./Wt.): <= 50 %

US Federal Regulations

OSHA

- If listed below, chemical specific standards apply to the product or components:
  - None listed

Clean Air Act Section (112)

- If listed below, components present at or above the de minimus level are hazardous air pollutants:
  - cyanamide; carbamoni
  - CAS-No.: 420-04-2

CERCLA Reportable Quantities

- If listed below, a reportable quantity (RQ) applies to the product based on the percent of the named component:
  - orthophosphoric acid
    - CAS-No.: 7664-38-2
    - Reportable Quantity: 263158 lbs

SARA Title III Section 311/312 Hazard Categories

- The product meets the criteria only for the listed hazard classes:
  - Acute Health Hazard

SARA Title III Section 313 Reportable Substances

- If listed below, components are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:
  - cyanamide; carbamoni
  - CAS-No.: 420-04-2

Toxic Substances Control Act (TSCA)

- If listed below, non-proprietary substances are subject to export notification under Section 12 (b) of TSCA:
State Regulations

California Proposition 65

A warning under the California Drinking Water Act is required only if listed below:

- None listed

International Chemical Inventory Status

Unless otherwise noted, this product is in compliance with the inventory listing of the countries shown below. For information on listing for countries not shown, contact the Product Regulatory Services Department.

- Europe (EINECS/ELINCS): Listed/registered
- USA (TSCA): Listed/registered
- Canada (DSL): Listed/registered
- Australia (AICS): Listed/registered
- Japan (MITI): Listed/registered
- Korea (TCCL): Listed/registered
- Philippines (PICCS): Not listed/Not registered
- China: Listed/registered
- New Zealand: Listed/registered

16. OTHER INFORMATION

HMIS Ratings

Health : 2
Flammability : 1
Physical Hazard : 2

Further information

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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.