

## SAFETY DATA SHEET

# PENOSIL Premium Polystyrol FixFoam

Date: 16.06.2010  
Version nr.: 4  
Revised: 30.08.2011

### 1. Identification of the substance/mixture and of the company/undertaking

**1.1. Product identifier:** PENOSIL Premium Polystyrol FixFoam

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

Used for installation of insulation panels made of polystyrene foam (also known as polystyrol foam, EPS or XPS) on facades and foundations of new construction works as well as for insulating old buildings. For the fixing of stone wool. Installation and insulation of roof tiles. Insulation and installation of pipes. Adheres well to most building materials, with the exception of teflon, polyethylene and silicon surfaces. Cured foam is sensitive to UV-light and direct sunlight.

**1.3. Details of supplier of the safety data sheet:** Krimelte Ltd  
13619 Tallinn  
Suur-Paala 10  
Estonia  
Tel. +372 605 93 00  
Fax: (+372) 605 93 15  
112

**1.4. Emergency telephone number:**

### 2. Hazards identification

**2.1. Classification of the substance or mixture**

**According to 67/548/EC**

Harmful Xn<sub>1</sub>      Extremely flammable (F+)

|           |  |
|-----------|--|
| R12       | Extremely flammable  |
| R20       | Harmful by inhalation  |
| R36/37/38 | Irritating to eyes, respiratory system and skin                                      |
| R40       | Limited evidence of a carcinogenic effect  |
| R42/43    | May cause sensitization by inhalation and skin contact.                              |
| R48/20    | Harmful: danger of serious damage to health by prolonged exposure through inhalation |

#### Health

The vapor will irritate throat and lungs. Vapor is dangerous in huge amounts. Irritating to eyes. Occasionally, contact produces skin allergy.

#### Environment

May cause long-term adverse effects in the aquatic environment.

#### Fire

The propellant is inflammable and explosive.

### 2.2. Label elements

- Persons already sensitised to diisocyanates may develop allergic reactions when using this product.
- Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product.
- This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (i.e. type A1 according to standard EN 14387) is used

2.2.1 Hazard symbol: Harmful (Xn)      Extremely flammable (F+)

2.2.2 Hazardous ingredients: Consists isocyanate. See information applied by the manufacturer.

2.2.3 R-phrases      R12      Extremely flammable  
R20      Harmful by inhalation

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|                    |           |   |
|--------------------|-----------|---|
|                    | R36/37/38 | Irritating to eyes, respiratory system and skin   |
|                    | R40       | Limited evidence of a carcinogenic effect   |
|                    | R42/43    | May cause sensitization by inhalation and skin contact.   |
|                    | R48/20    | Harmful: danger of serious damage to health by prolonged exposure through inhalation                        |
| 2.2.4 S-phrases    | S2        | Keep out of the reach of children   |
|                    | S9        | Keep container in a well-ventilated place   |
|                    | S16       | Keep away from sources of ignition -- No smoking  |
|                    | S 23      | Do not breathe gas/vapor  |
|                    | S33       | Take precautionary measures against static discharges.  |
|                    | S36/37    | Wear suitable protective clothing and gloves  |
|                    | S45       | In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). |
|                    | S51       | Use only in well-ventilated areas   |
| 2.3. Other hazards |           | No data available.  |

### 3. Composition/information on ingredients

#### 3.1. Substances

##### Classification of substances according to 67/548/EEC

| CAS-nr.   | Chemical name                      | Content |   | Classification |  |
|-----------|------------------------------------|---------|---|----------------|--|
|           |                                    | Max.    | % | Symbol         | R-phrase                               |
| 9016-87-9 | Diphenylmethane-4',4'-diisocyanate | 40      | % | Xn             | 20<br>36/37/38<br>42/43<br>40<br>48/20 |
| 75-28-5   | Isobutane                          | 8       | % | F+             | 12                                     |
| 74-98-6   | Propane                            | 4       | % | F+             | 12                                     |
| 115-10-6  | Dimethylether                      | 4       | % | F+             | 12                                     |

### 4. First aid measures

#### 4.1 Description of first aid measures

|                    |   |
|--------------------|---|
| Inhalation:        | Move the exposed person to fresh air. Seek medical attention.   |
| Skin contact:      | Wash off with plenty of soap and water. Remove contaminated clothing. Seek medical attention if irritation or symptoms persist. |
| Contact with eyes: | Rinse eyes immediately with plenty of water, keeping the eye open. Seek medical attention.                                      |
| Ingestion:         | Do not induce vomiting or give water to drink. Seek medical attention and show product label.                                   |

#### 4.2. Most important symptoms and effects, both acute and delayed

|                   |                                     |
|-------------------|-------------------------------------|
| Inhalation        | Irritating to respiratory system.   |
| Skin contact      | Irritating to skin.                 |
| Contact with eyes | Irritating to eyes                  |
| Ingestion         | May cause suffocation and vomiting. |

#### 4.3. Indication of any immediate medical attention and special treatment needed

As a general rule, and in all cases of doubt or when symptoms persist, always seek medical attention.

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### 5. Fire fighting measures

#### 5.1 Extinguishing media

5.1.1. Suitable extinguishing media: Use extinguishing media appropriate the surrounding fire conditions. Use as appropriate: water spray, dry extinguishing media, foam and carbon dioxide.

5.1.2 Unsuitable extinguishing media: No specific recommendations.

**5.2. Special hazards arising from the substance or mixture** Due to heat pressure in the aerosol-can is rising and there is a risk for explosion. In contact with fire product forms toxic fumes. Explosive propellant-air mix can be formed.

**5.3. Advice for fire-fighters** No specific recommendations.

### 6. Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation of the working area. Wear protective clothing, goggles and protective chemical resistant gloves classified under Standard EN374: protective gloves against chemicals and microorganisms.

Avoid contact with skin and eyes. Do not inhale fumes. Use a protective mask with an appropriate gas filter (i.e. type A1 according to standard EN 14387), when you use product in the room which has a poor ventilation

**6.2 Environmental precautions:** Spillages shall be absorbed by sand or cloths and stored in suitable container, or allow the foam to solidify. The waste must be handled in accordance with legal requirements.

#### 6.3 Methods and material for containment and cleaning up

Fresh foam can be removed with acetone, cured foam only mechanically.

### 7. Handling and storage

#### 7.1 Precaution for safe handling:

During operation, note that the product contains a flammable gas. Keep away from heat. Do not break or burn even after use. Should not be sprayed on a open flame or any incandescent material.

7.1.1. Protective measures Ensure good ventilation. Keep away from heat. Keep away from sources of ignition- No smoking. Avoid contact with eyes and skin. Avoid static electricity. Make use of protective goggles and protective chemical resistant gloves classified under Standard EN374: protective gloves against chemicals and microorganisms.

#### 7.1.2. Advice on general occupational hygiene

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

#### 7.2. Conditions for safe storage, including any incompatibilities

Storage: Keep in a cool, dry, well-ventilated area in an upright position away from direct sunlight and other heat sources. Do not store in the direct sunlight and not more than +50 °C. Storage: temperature +5°C to +30 °C.

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### 7.3. Specific end use(s)

Used for installation of insulation panels made of polystyrene foam (also known as polystyrol foam, EPS or XPS) on facades and foundations of new construction works as well as for insulating old buildings. For the fixing of stone wool. Installation and insulation of roof tiles. Insulation and installation of pipes. Adheres well to most building materials, with the exception of teflon, polyethylene and silicon surfaces. Cured foam is sensitive to UV-light and direct sunlight.

## 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limit value

| Components                        | CAS-No.   | Type form of exposure | Control parameters   |
|-----------------------------------|-----------|-----------------------|--|
| Dimethyl ether                    | 115-10-6  | TWA                   | 1920 mg/m <sup>3</sup><br>1000 ppm   |
| Diphenylmethane-4,4'-diisocyanate | 9016-87-9 | No information        | 0,05 mg/m <sup>3</sup> 8 hours<br>0.005 ppm 8 hours  |
| Propane                           | 74-98-6   | No information        | Short time: 2000 mg/m <sup>3</sup> , 1100 ppm<br>Long time: 1500 mg/m <sup>3</sup> , 800 ppm |
| Butane                            | 106-97-8  | No information        | Short time: 1810 mg/m <sup>3</sup> , 750 ppm<br>Long time: 1450 mg/m <sup>3</sup> , 600 ppm  |

### 8.2. Exposure controls

#### 8.2.1. Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas.

#### 8.2.2. Individual protection measures, such as personal protective equipment

Eye/face protection:

During the work make use of protective goggles

Skin protection:

During the work make use of protective chemical resistant gloves classified under Standard EN374: protective gloves against chemicals and microorganisms.

Respiratory protection:

Use the product only in well-ventilated rooms. Do not inhale fumes. When using in poorly ventilated area, wear a suitable filter of the mask (ie type A1 in accordance with EN 14387).

**8.3. Environmental exposure controls** Do not let into environment. May cause long-term adverse effects in the aquatic environment.

## 9. Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|                                |                               |
|--------------------------------|-------------------------------|
| Appearance                     | Aerosol                       |
| Colour                         | Pale beige                    |
| Odour                          | Characteristic                |
| pH                             | Not applicable                |
| Melting point / freezing point | Not relevant                  |
| Boiling point                  | Over +100 °C                  |
| Flash point                    | Below -20 °C                  |
| Evaporation rate               | Not relevant                  |
| Flammability                   | Above +100 °C                 |
| Explosion limits               | Low: 2 % vol, high: 10% vol.  |
| Vapor pressure                 | 5 Bar/+20 °C    10 Bar/+50 °C |
| Vapor density                  | Not applicable                |
| Relative density               | 1.1 g/ml/+20 °C               |

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|  |                           |
|--|---------------------------|
| Solubility in water                    | insoluble                 |
| Solubility in other solvents           | In acetone soluble        |
| Partition coefficient: n-octanol/water | Not applicable            |
| Auto-ignition temperature              | Not applicable            |
| Decomposition temperature              | + 200 °C                  |
| Viscosity                              | ca 500 cP/+20 °C          |
| Explosive properties                   | Contains flammable gases. |
| Oxidizing properties                   | Not applicable            |
| <b>9.2. Other information</b>          | Lack of data              |

## 10. Stability and reactivity

- 10.1. Reactivity** The mixture is not reactive under recommended storage and handling conditions (see section 7).
- 10.2. Chemical stability** The mixture is stable under recommended storage and handling conditions (see section 7).
- 10.3. Possibility of hazardous reactions** In case of fire, the product can create corrosive and hazard gases.
- 10.4 Conditions to avoid:** An aerosol container is under pressure, do not expose to heat. Do not store in the sun, and not more than +50 °C. Do not break or burn even after use. Should not be sprayed on a open flame, or any incandescent material.
- 10.5. Incompatible materials:** No data available
- 10.6. Hazardous decomposition products:** In case of fire, the product can create corrosive and hazard gases.

## 11. Toxicological information

### 11.1. Information on toxicological effects

#### 11.1.1. Substances

11.1.1.1. The relevant hazard classes for which information shall be provides, are:

#### (a) Acute toxicity

|                                  | Dimethyl ether   | Diphenylmethane-4',4'-diisocyanate   | Isobutane / propane |
|----------------------------------|--|--|---------------------|
| <b>Acute Oral toxicity</b>       | Not applicable   | LD50 (rat): > 2.000 mg/kg  | Not applicable      |
| <b>Acute Dermal toxicity</b>     | Not applicable   | Not applicable   | Not applicable      |
| <b>Acute Inhalation toxicity</b> | LC50 (rat): 164 000 ppm<br>Respiratory effects Anaesthetic effects Central nervous system depression narcosis Cardiac irregularities Coma. | LC50 (rat): 490 mg/m <sup>3</sup> 4h<br>Tested substance:<br>Aerosol<br>Saturated vapour concentration at 25 °C:<br>0,09 mg/m <sup>3</sup> | Not applicable      |

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### (b) Skin corrosion / irritation

|                        | Dimethyl ether  | Diphenylmethane-4',4'-diisocyanate                                  | Isobutane / propane |
|------------------------|---|---|---------------------|
| <b>Skin irritation</b> | Not tested on animals<br>Classification: Not classified as irritant<br>Result: No skin irritation<br>Not expected to cause skin irritation based on expert review of the properties of the substance. | Rabbit<br>Result: No skin irritation<br>Method: OECD test guide 404 | No skin irritation  |

### (c) Serious eye damage / irritation

|                       | Dimethyl ether  | Diphenylmethane-4',4'-diisocyanate                                 | Isobutane / propane |
|-----------------------|---|--|---------------------|
| <b>Eye irritation</b> | Not tested on animals<br>Classification: Not classified as irritant<br>Result: No eye irritation<br>Not expected to cause eye irritation based on expert review of the properties of the substance. | Rabbit<br>Result: No eye irritation<br>Method: OECD test guide 405 | No eye irritation   |

### (d) Respiratory or skin sensitization

|                      | Dimethyl ether  | Diphenylmethane-4',4'-diisocyanate   | Isobutane / propane     |
|----------------------|---|--|-------------------------|
| <b>Sensitization</b> | Not tested on animals<br>Classification: Not a skin sensitizer<br>Not expected to cause eye irritation based on expert review of the properties of the substance. | Result: May cause sensitization by inhalation and skin contact<br>Isocyanate vapor may cause asthmatic allergy | No sensitization effect |

### (e) Germ cell mutagenicity

|                               | Dimethyl ether   | Diphenylmethane-4',4'-diisocyanate | Isobutane / propane |
|-------------------------------|--|------------------------------------|---------------------|
| <b>Germ cell mutagenicity</b> | Animal testing did not show any mutagenic effects. Tests on bacterial or mammalian cell cultures did not show mutagenic effects. | Lack of data                       | Not applicable      |

### (f) Carcinogenicity

|                        | Dimethyl ether  | Diphenylmethane-4',4'-diisocyanate | Isobutane / propane |
|------------------------|---|------------------------------------|---------------------|
| <b>Carcinogenicity</b> | Animal testing did not show any carcinogenic effects. | Lack of data                       | Not applicable      |

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### (g) Reproductive toxicity

|                              | Dimethyl ether  | Diphenylmethane-4',4'-diisocyanate | Isobutane / propane |
|------------------------------|---|------------------------------------|---------------------|
| <b>Reproductive toxicity</b> | No toxicity on reproduction<br>May cause cardiac arrhythmia. Rapid evaporation of the liquid may cause frostbite. | Lack of data                       | Not applicable      |

### (h) STOT-single exposure

Lack of data

### (i) STOT-repeated exposure

Lack of data

## 12. Ecological information

### 12.1. Toxicity

|  | Dimethyl ether   | Diphenylmethane-4',4'-diisocyanate                                    | Isobutane / propane |
|--|--|---|---------------------|
| <b>Toxicity to fish</b>                  | LC50 /96h/ Poecilia reticulata (guppy): > 4000 mg/l                        | LC50 /96h/ danio rerio: > 1.000 mg/l<br>Method: OECD test guide 203   | Not applicable      |
| <b>Toxicity to aquatic invertebrates</b> | EC50 /48h/ Daphnia: > 4000 mg/l<br>LC50 /48h/ Daphnia: 755,5 mg/l          | EC50 /24h/ Daphnia magna: > 1.000 mg/l<br>Method: OECD test guide 202 | Not applicable      |
| <b>Chronic toxicity to fish</b>          | Due to its physical properties, there is no potential for adverse effects. | Lack of data  | Lack of data        |
| <b>Toxicity to bacteria</b>              | Lack of data   | EC50 /3h/ activated sludge: >100 mg/l<br>Method: OECD test guide 209  | Lack of data        |

### 12.2. Persistence and degradability

|                                      | Dimethyl ether   | Diphenylmethane-4',4'-diisocyanate                                | Isobutane / propane |
|--------------------------------------|--|---|---------------------|
| <b>Persistence and degradability</b> | Method: Closed Bottle test<br>According to the results of tests of biodegradability this product is not readily biodegradable. | Biodegradability 28 days<br>0 %.<br>Method: OECD test guide 302 C | Not applicable      |

### 12.3. Bio-accumulative potential:

|                        | Dimethyl ether    | Diphenylmethane-4',4'-diisocyanate | Isobutane / propane |
|------------------------|-------------------|------------------------------------|---------------------|
| <b>Bioaccumulation</b> | No data available | No data available                  | Not applicable      |

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### 12.4. Mobility in soil:

|                  | Dimethyl ether | Diphenylmethane-4',4'-diisocyanate | Isobutane / propane |
|------------------|----------------|------------------------------------|---------------------|
| Mobility in soil | Koc: 7,759     | No data available                  | Not applicable      |

### 12.5. Results of PBT and vPvB assessment:

|                         | Dimethyl ether   | Diphenylmethane-4',4'-diisocyanate | Isobutane / propane |
|-------------------------|--|------------------------------------|---------------------|
| PBT and vPvB assessment | This substance is not considered to be persistent, bio accumulating nor toxic (PBT). The substance is not considered to be very persistent nor very bio accumulating (vPvB). | No data available                  | Not applicable      |

### 12.6. Other adverse effects

| Dimethyl ether  | Diphenylmethane-4',4'-diisocyanate | Isobutane / propane |
|---|------------------------------------|---------------------|
| Ozone depletion potential: 0<br>Global warming potential (GWP): 1 | Not applicable                     | Not applicable      |

## 13. Disposal considerations

### 13.1. Waste treatment methods

13.1.1. Product / Packaging disposal: The product and packages must be handled in accordance with national and local requirements.

13.1.2. Waste treatment options: Foam bottles are recyclable.

13.2. Additional information: No specific recommendations.

## 14. Transport information

|  |                                |
|--|--------------------------------|
| 14.1 UN number                         | 1950                           |
| 14.2 Packing Group                     | Not known                      |
| 14.3 Road ADR                          | Inflammable aerosol Class 2/5F |
| 14.4 Railway RID                       | Inflammable aerosol Class 2/5F |
| 14.5 Transport by sea GGVSee/IMDG-Code | aerosol Class 2                |
| 14.6 Air transport ICAO-TI/IATA-DGR    | -                              |

## 15. Regulatory information

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

Not applicable

### 15.2. Chemical safety assessment

Chemical safety assessment has been carried out for dimethyl ether and still at work for diphenylmethane-4',4'-diisocyanate.

## 16. Other information

### 16.1. Date of preparation of the latest version of the SDS

Written in the beginning of the safety data sheet.

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### 16.2. Abbreviations and acronyms

TWA: Time Weighted Average  
LC50: Lethal Concentration Medium  
EC50: effective Concentration Medium  
STOT: Specific target organ toxicity  
PBT: Persistent, bioaccumulativ and toxic  
vPvB: very persistent very bioaccumulative

### 16.3. Key literature references and sources of data

The safety data sheet meets the requirements of the European Parliament and Council Regulation (EC) No.1907/2006 and the Chemicals Act of the Republic of Estonia and regulation No 130 of Minister of Social Affairs.

### 16.4. Classification and classification procedure used for mixtures

#### 16.5. Text of R-phrases (specified in clause 3)

R12 Extremely flammable  
R20 Harmful by inhalation.  
R36/37/38 Irritating to eyes, respiratory system and skin.  
R42/43 May cause sensitization by inhalation and skin contact.  
R40 Limited evidence of a carcinogenic effect  
R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

#### 16.6. Training advice

No specific recommendations.

#### 16.7. Further information

No specific recommendations.