



MATERIAL SAFETY DATASHEET

PENOSIL Premium Fire Rated Gunfoam B1

Date: 16.06.2010

Version nr.: 4

Revised: 30.08.2011

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

1.1. Product identifier: PENOSIL Premium Fire Rated Gunfoam B1

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

Foam is used for installation of fire protection doors, filling of holes and gaps, and for thermal insulation where high requirements for fire resistance are needed.

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.

Fire resistance tested according to European standard EN 13501-2:2007+A1:2009.

1.3. Details of supplier of the safety data sheet: INSULATION WHOLESALERS LTD

635A MAKERUA RD

RD4

PALMERSTON NORTH

06 329 8065 021 927038

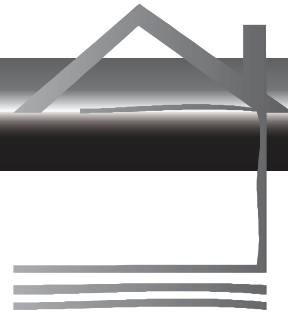
1.4. Emergency telephone number: 111

2. Hazards identification

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2.1. Classification of the mixture

According to 67/548/EC



Harmful Xn, Extremely flammable (F+)

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

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

1. Persons already sensitised to diisocyanates may develop allergic reactions when using this product.
2. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product.
3. 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:

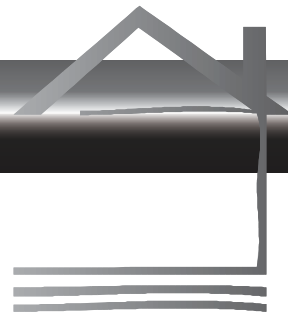


Harmful (Xn) Extremely flammable (F+)

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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

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

CAS-nr.	Chemical name	Content		Classification	
		Max.		According Directive 67/548/EEC	According Regulation 1272/2008 (CLP)

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9016-87-9	Diphenylmethane-4',4'-diisocyanate	40	%	Xn; R20 R36/37/38 R42/43 R40 R48/20	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2, H319 Resp. Sens. 1; H334 Skin Sens.1; H317 Carc. 2; H351 STOT SE 3; H335 STOT RE 2; H373
75-28-5	Isobutane	8	%	F+; R12	Flam. Gas 1; H220 Press. Gas; H280
74-98-6	Propane	4	%	F+; R12	Flam. Gas 1; H220 Press. Gas; H280
115-10-6	Dimethylether	4	%	F+; R12	Flam. Gas 1; H220 Press. Gas H280

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

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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.

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 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

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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.

7.3. Specific end use(s)

Foam is used for installation of fire protection doors, filling of holes and gaps, and for thermal insulation where high requirements for fire resistance are needed.

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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 ³ 1000 ppm
Diphenylmethane-4',4'-diisocyanate	9016-87-9	No information	0,05 mg/m ³ 8 hours 0.005 ppm 8 hours
Propane	74-98-6	No information	Short time: 2000 mg/m ³ , 1100 ppm Long time: 1500 mg/m ³ , 800 ppm
Butane	106-97-8	No information	Short time: 1810 mg/m ³ , 750 ppm Long time: 1450 mg/m ³ , 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

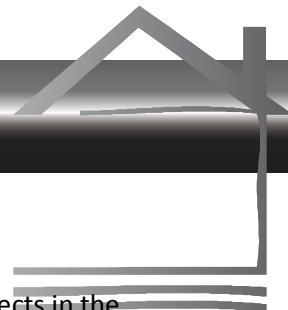
Skin protection: During the work make use of protective chemical resistant gloves classified under Standard EN374: protective gloves against chemicals and microorganisms.

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).

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8.2.3. 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
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

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Viscosity	ca 500 cP/+20 °C
Explosive properties	Contains flammable gases.
Oxidizing properties	Not applicable

9.2. Other information 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 provided are:

(a) Acute toxicity

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

(b) Skin corrosion / irritation

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

(c) Serious eye damage / irritation

	Dimethyl ether	Diphenylmethane-4',4' - diisocyanate	Isobutane / propane
Eye irritation	Not tested on animals Classification: Not classified as irritant Result: No eye irritation Not expected to cause eye irritation based on	Rabbit Result: No eye irritation Method: OECD test guide 405	No eye irritation

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	expert review of the properties of the substance.		
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(d) Respiratory or skin sensitization

	Dimethyl ether	Diphenylmethane-4',4'-diisocyanate	Isobutane / propane
Sensitization	Not tested on animals Classification: Not a skin sensitizer 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 Isocyanate vapor may cause asthmatic allergy	No sensitization effect

(e) Germ cell mutagenicity

	Dimethyl ether	Diphenylmethane-4',4'-diisocyanate	Isobutane / propane
Germ cell mutagenicity	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
Carcinogenicity	Animal testing did not show any carcinogenic effects.	Lack of data	Not applicable

(g) Reproductive toxicity

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

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		Method: OECD test guide 209	
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12.2. Persistence and degradability

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

12.3. Bio-accumulative potential:

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

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	This substance is not considered to be persistent, bio accumulating nor toxic (PBT).	No data available	Not applicable

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assessment	The substance is not considered to be very persistent nor very bio accumulating (vPvB).		
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12.6. Other adverse effects

Dimethyl ether	Diphenylmethane-4',4'-diisocyanate	Isobutane / propane
Ozone depletion potential: 0 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

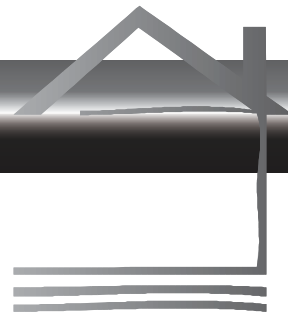
14.3 Road ADR Inflammable aerosol Class 2/5F

14.4 Railway RID Inflammable aerosol Class 2/5F

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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.

16.2. Abbreviations and acronyms

TWA: Time Weighted Average

LC50: Lethal Concentration Medium

EC50: effective Concentration Medium

STOT: Specific target organ toxicity

PBP: Persistent, bioaccumulativ and toxic

vPvB: very persistent very bioaccumulative

Acute Tox.4: Acute Toxicity: inhaled- Category 4

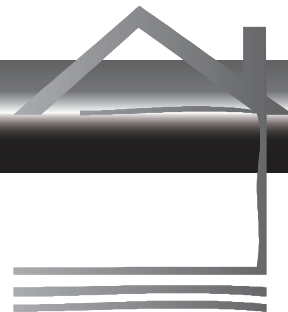
Carc. 2: Carcinogenicity- Category 2

Eye Irrit. 2: Serious eye damage/ eye irritation- Category 2

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Resp. Sens. 1: Respiratory sensitization- Category 1

Skin Irrit.2: Skin corrosion/irritation- Category 2

Skin Sens. 1: Skin sensitization- Category 1

STOT RE 2: Specific target organ toxicity (repeated exposure): inhalation- Category 2

STOT SE 3: Specific target organ toxicity (single exposure): inhalation- Category 3

Flam. Gas 1: Flammable Gas- category 1

Press. Gas: Gases under pressure

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. Relevant R-phrases and/or H-statements (specified in clause 3)

According Directive 67/548/EEC

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.

According Regulation 1272/2008 (CLP)

H220 Extremely flammable gas

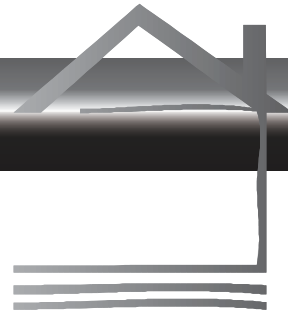
H280 Contains gas under pressure; may explode if heated

H315 Cause skin irritation

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H317 May cause an allergic skin reaction

H319 Causes serious eye irritation

H332 Harmful if inhaled

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

H335 May cause respiratory irritation

H351 Suspected of causing cancer

H373 May cause damage to organs through prolonged or repeated exposure if inhaled.

16.6. Training advice No specific recommendations.

16.7. Further information No specific recommendations.