SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH)

Expansion foam 500 ml (Expansionsschaum 500 ml)

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

1.1. Product identifier

Expansion foam 500 ml (Expansionsschaum 500 ml)

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

Use of the substance/mixture:

Adhesives, Sealants

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):

DOYMA GmbH & Co
SEALING SYSTEMS
FIRE CONTROL SYSTEMS

Industriestrasse 43-57
28876 Oyten

Fon: +49(0)4207/9166-300
Fax: +49(0)4207/9166-199
E-Mail: info@doyma.de
www.doyma.com

1.4. Emergency number

Giftinformationszentrum Nord (GIZ Nord) Universität Göttingen Fon: +49 55 1-19 240
England, Wales and Scotland dial: 111; Republic of Ireland dial: 01 809 2166

SECTION 2: Potential hazards

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard warnings	Categorisation procedure
Flammable aerosols *(Flam. Aerosol 1)*	H222: Extremely flammable aerosol.	
Acute toxicity (oral) *(Acute Tox. 4)*	H302: Harmful if swallowed.	
Corrosive/irritant effect on the skin *(Skin Irrit. 2)*	H315: Causes skin irritation.	
Sensitisation of the respiratory tract or skin *(Skin Sens. 1)*	H317: May cause allergic skin reactions.	
Serious eye damage/irritation *(Eye Irrit. 2)*	H319: Causes serious eye irritation.	
Acute toxicity (inhalation) *(Acute Tox. 4)*	H332: Harmful if inhaled.	
Specific target organ toxicity at single exposure *(STOT SE 3)*	H335: May irritate the respiratory tract.	
Carcinogenicity *(Carc. 2)*	H351: Can probably cause cancer.	
Specific target organ toxicity with repeated exposure *(STOT RE 2)*	H373: May cause damage to organs through prolonged or repeated exposure.	

2.2. Labelling elements

Labelling according to Regulation (EC) No 1272/2008 [CLP].

Hazard pictograms:

GHS02
Flame

GHS07
Exclamation mark

GHS08
Health hazard

Signal word: Danger

Hazard-determining components of labelling:

Contains: Diphenylmethane diisocyanate, isomers and homologues

Hazard warnings for physical hazards	
H222	Extremely flammable aerosol.
H229	Pressurised container: May burst when heated.

Hazard warnings for health hazards	
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause allergic skin reactions.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May irritate the respiratory tract.
H351	Can probably cause cancer.
H373	May cause damage to organs through prolonged or repeated exposure.

Supplementary hazard characteristics (EU)	
EUH204	Contains isocyanates. May cause allergic reactions.

Safety instructions	
P102	Keep out of the reach of children.

Safety instructions Prevention	
P210	Keep away from heat, hot surfaces, sparks, open flames and other sources of ignition. Do not smoke.
P251	Do not pierce or burn, even after use.
P261	Avoid inhalation of dust/fume/gas/mist/vapour/aerosol.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Safety instructions Reaction	
P302 + P352	IF ON SKIN: Wash with plenty of water/soap.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if possible. Continue rinsing.

Safety instructions Storage	
P410 + P412	Protect from sunlight. Do not expose to temperatures above 50 °C/122 °F.

Safety instructions Disposal	
P501	Dispose of contents/container to hazardous waste collection point.

2.3. Other hazards

No data available

SECTION 3: Composition / Information on ingredients

3.2. Mixtures

Description:

Prepolymer (mixed polyol and polymeric isocyanate) with freon-free low-boiling blowing agent

Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to 67/548/EEC Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS-No.: 9016-87-9	**Diphenylmethane diisocyanate isomers + homologues, CAS 9016-87-9** STOT SE 3, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, Resp. Sens. 1, Skin Sens. 1, Carc. 2, STOT RE 2 **Danger** H315-H317-H319-H332-H334-H335-H351-H373 Carc. Cat. 3; R40 — Xi; R36/37/38 — Xn; R20 — Xn; R48/20 — R42/43	40 – 50 Weight %
CAS-No.: 13674-84-5 **EC No.:** 237-158-7	**Tris(2-chloro-1-methylethyl)phosphate** Acute Tox. 4 **Attention** H302 Xn; R22	15 – 25 Weight %
CAS-No.: 115-10-6 **EC No.:** 204-065-8	**Dimethyl ether** Flam. Gas 1, Press. Gas **Danger** H220 F+; R12	5 – 10 Weight %
CAS-No.: 75-28-5 **EC No.:** 200-857-2	**Isobutane** Flam. Gas 1, Press. Gas **Danger** H220 F+; R12	5 – 10 Weight %
CAS-No.: 74-98-6 **EC No.:** 200-827-9	**Propane** Flam. Gas 1, Press. Gas **Danger** H220 F+; R12	3 – 5 Weight %

Wording of R-, H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:

In case of accident or if you feel unwell, seek medical advice immediately (if possible, show operating instructions or safety data sheet). Remove the victim from the danger zone. Remove soiled, soaked clothing. If unconscious, place in recovery position and seek medical advice. Do not leave the victim unattended. Attention first aiders: Pay attention to self-protection!

After inhalation:

Provide fresh air. If respiratory tract irritation occurs, seek medical attention. If breathing is difficult or stopped, give artificial respiration. Do not give mouth-to-mouth or mouth-to-nose resuscitation. Use a breathing bag or ventilator. Get medical advice/attention if you feel unwell.

In case of skin contact:

In case of contact with skin, wash off immediately with plenty of soap and water. In case of skin irritation or rash: Seek medical advice/attention. Remove all contaminated clothing immediately.

After eye contact:

Rinse immediately carefully and thoroughly with eye wash or water. If eye irritation occurs, consult an ophthalmologist

After ingestion:
Rinse out mouth. If you feel unwell, seek medical advice/attention

Self-protection of the first aider:
First aiders: Pay attention to self-protection! Use personal protective equipment. No direct breathing by the first aider.

4.2. Most important symptoms and effects, both acute and delayed
Skin corrosion/irritation, Serious eye damage/irritation, Allergic reactions, Asthmatic complaints, Difficulty breathing, Respiratory tract irritation, Nausea, Vomiting.

4.3. Information on immediate medical assistance or specialised treatment
Symptomatic treatment.

SECTION 5: Fire-fighting measures

5.1. Extinguishing agent
Suitable extinguishing agents:
Extinguishing powder, carbon dioxide (CO2), sand.

Unsuitable extinguishing agents:
Water.

5.2. Special hazards arising from the substance or mixture
Gases / vapours, highly flammable. Flammable. Vapours are heavier than air, spread on the ground and form explosive mixtures with air. Watch out for re-ignition. Lower explosion limit (vol-%) for substances/ gases contained in the product: approx. 1.5 vol-%

Hazardous combustion products:
In case of fire: Soot Gases/vapours, toxic

5.3. Instructions for firefighting
Wear self-contained breathing apparatus and chemical protection suit.

5.4. Additional notes
Collect contaminated extinguishing water separately. Do not allow to enter the sewage system or bodies of water.

Use water spray jet to protect persons and to cool containers in the danger zone.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
6.1.1. Staff not trained for emergencies
Personal precautions:
Move people to safety. Avoid contact with skin, eyes and clothing. Do not inhale gas/vapour/aerosol. Ensure adequate ventilation. Use explosion-proof electrical equipment/ventilation systems/lighting/etc. Prevent vapours from entering cellars, sewers and pits due to risk of explosion.

Protective equipment:
Wear protective gloves/protective clothing/eye protection/face protection.

6.1.2. Emergency services
Personal protective equipment:
Personal protective equipment: see section 8

6.2. Environmental protection measures
Do not allow to enter drains or waterways.

6.3. Methods and material for retention and cleaning

For retention:

Suitable material to pick up: Earth, sand. Allow to solidify. Pick up mechanically.

For cleaning:

Uncured foam can be removed with PU CLEANER or organic solvents such as acetone.

6.4. Reference to other sections

Safe handling: see section 7 Personal protective equipment: see section 8 Disposal: see section 13

6.5. Additional notes

Use suitable containers to avoid contamination of the environment.

SECTION 7: Handling and storage

7.1. Protective measures for safe handling

Protective measures

Instructions for safe handling:

Avoid contact with skin, eyes and clothing.
Wear personal protective equipment (see section 8).

Fire protection measures:

Keep away from sources of ignition - No smoking. Use explosion-proof electrical equipment/ventilation systems/lighting/.... Take measures against electrostatic charges.

Notes on general industrial hygiene

Do not eat, drink or smoke while working. Avoid contact with eyes and skin. Take off soiled, soaked clothing. Wash hands before breaks and at the end of work. Use greasy skin care products after cleaning.

7.2. Conditions for safe storage in consideration of incompatibilities

Technical measures and storage conditions:

Keep container tightly closed and store in a cool, well-ventilated place. Protect from sunlight. Do not expose to temperatures above 50 °C/122 °F.

Storage instructions:

Keep away from food, drink and animal feed.

Storage class: 2 B

7.3. Specific end uses

Recommendation:

Adhesives, sealants

SECTION 8: Exposure controls/personal protective equipment

8.1. Parameters to be monitored

8.1.1. Occupational exposure limits

Limit value type (Country of origin)	Substance name	
		① Long-term occupational exposure limit ② Short-term workplace limit value ③ Instantaneous value ④ Monitoring or observation procedure ⑤ Remark

TRGS 900 (DE)	Diphenylmethane diisocyanat isomers + homologues, CAS 9016-87-9 CAS No.: 9016-87-9	① 0,05 mg/m³ ② 0,05 mg/m³ ③ 0,1 mg/m³ ⑤ (calculated as MDI), (inhalable fraction)
TRGS 900 (DE)	Dimethyl ether CAS No.: 115-10-6	① 1.000 ppm (1.900 mg/m³) ② 8.000 ppm (15.200 mg/m³)
IOELV (EU)	Dimethyl ether CAS No.: 115-10-6	① 1.000 ppm (1.920 mg/m³)
Limit value type (Country of origin)	**Substance name**	① **Long-term occupational exposure limit** ② **Short-term workplace limit value** ③ **Instantaneous value** ④ **Monitoring or observation procedure** ⑤ **Remark**
TRGS 900 (DE)	Isobutane CAS-No: 75-28-5	① 1.000 ppm (2.400 mg/m³) ② 4.000 ppm (9.600 mg/m³)
TRGS 900 (DE)	Propane CAS-No: 74-98-6	① 1.000 ppm (1.800 mg/m³) ② 4.000 ppm (7.200 mg/m³)
TRGS 900 (DE)	4,4'-diphenylmethane diisocyanate CAS-No: 101-68-8	① 0,05 mg/m³ ② 0,05 mg/m³ ③ 0,1 mg/m³ ⑤ (inhalable fraction)

8.1.2. Biological limit values

Limit value type (Country of origin)	**Substance name**	**Limit value**	① **Parameters** ② **Test material** ③ **Sampling time** ④ **Remark**
TRGS 903 (DE)	4,4'-diphenylmethane diisocyanate CAS-No: 101-68-8	10 µg/g Creatinin	① 4,4'-Diaminodiphenylmethane ② Urine ③ End of exposure or end of shift

8.1.3. DNEL/PNEC values

Substance name	**DNEL value**	① **DNEL Type** ② **Exposure path** ③ **Exposure duration**
4,4'-diphenylmethane diisocyanate CAS-No: 101-68-8	0,0001 g/m³	① DNEL Employees ② DNEL Acute inhalation (systemic)
4,4'-diphenylmethane diisocyanate CAS-No: 101-68-8	0,0001 g/m³	① DNEL Employees ② DNEL Acute inhalation (local)
4,4'-diphenylmethane diisocyanate CAS-No: 101-68-8	0,05 mg/m³	① DNEL Employees ② DNEL Long-term inhalation (systemic)
4,4'-diphenylmethane diisocyanate CAS-No: 101-68-8	0,05 mg/m³	① DNEL Employees ② DNEL Long-term inhalation (local)
4,4'-diphenylmethane diisocyanate CAS-No: 101-68-8	50 mg/kg	① DNEL Employees ② DNEL acute dermal, short-term (systemic) ③ 24h
4,4'-diphenylmethane diisocyanate CAS-No: 101-68-8	28,7 mg/m³	① DNEL Employees ② DNEL acute dermal, short-term (local)

Substance name	PNEC value	① PNEC Type
4,4'-diphenylmethane diisocyanate CAS-No: 101-68-8	1 mg/l	① PNEC Waters, Fresh water
4,4'-diphenylmethane diisocyanate CAS-No: 101-68-8	0,1 mg/l	① PNEC Waters, Sea water
4,4'-diphenylmethane diisocyanate CAS-No: 101-68-8	10 mg/l	① PNEC Waters, Periodic release
4,4'-diphenylmethane diisocyanate CAS-No: 101-68-8	1 mg/l	① PNEC Sewage treatment plant (STP)
4,4'-diphenylmethane diisocyanate CAS-No: 101-68-8	1 mg/kg	① PNEC Floor, Fresh water

8.2. Exposure controls and monitoring

8.2.1. Suitable technical control equipment

Recommendation: If local extraction is not possible or insufficient, good ventilation of the work area should be ensured wherever possible.

8.2.2. Personal protective equipment

Eye/face protection:

Frame spectacles with side protection

Skin protection:

Tested protective gloves must be worn DIN EN 374
Suitable material: Butyl rubber, FKM (fluororubber), CR (polychloroprene, chloroprene rubber) Thickness of the glove material; >= 0.5 mm
Penetration time (maximum wearing time): 480 min
If reuse is intended, clean gloves before removing and store in a well-ventilated place. Breakthrough times and swelling properties of the material must be taken into account.

Respiratory protection:

Normally no personal respiratory protection necessary. Ventilate the affected area. If technical extraction or ventilation measures are not possible or insufficient, respiratory protection must be worn.
Combination filter device (EN 14387): A1

8.2.3. Limitation and monitoring of environmental exposure

No data available

8.3. Additional notes

No data available

SECTION 9: Physical and chemical properties

9.1. Information on the basic physical and chemical properties

Appearance

Physical state: The product is a foam aerosol. **Colour:** not determined
Odour: not determined

Safety-relevant basic data

		at °C	Method	Remark
pH value	*not applicable*			
Melting point/freezing point	*not determined*			
Freezing point	*not determined*			
Boiling start and boiling range	*not determined*			
Decomposition temperature (°C):	*not determined*			

Flash point	> 200 °C			MDI
Evaporation rate	*not determined*			
Ignition temperature in °C	> 350 °C			MDI: > 500 °C, DIN 51794
Upper/lower flammability or explosion limits	1,5 – 16 Vol-%			Gas
Vapour pressure	0,00001 hPa	20 °C		MDI
Vapour density	*not determined*			
Density	1,045 g/ml	20 °C		1,214 g/cm3 (with 20 °C) Liquid without propellant gas
Bulk density	*not applicable*			

		at °C	**Method**	**Remark**
Water solubility (g/L)				insoluble, reacts with water
Partition coefficient n-octanol/ water	*not determined*			
Viscosity, dynamic	*not determined*			
Viscosity, kinematic	*not determined*	40 °C		
Auto-ignition temperature	> 260 °C			
Conductivity				Non-conductor
Maximum VOC content:	17 wt-%			

9.2. Other information
Non-conductor

SECTION 10: Stability and reactivity

10.1. Reactivity
Flammable gas. Explosion hazard when heated under confinement. Flammable.

10.2. Chemical stability
The product is stable when stored at normal ambient temperatures.

10.3. Possibility of hazardous reactions
No hazardous reactions will occur if handled and stored as directed.

10.4. Conditions to avoid
Keep away from sources of ignition - No smoking.

10.5. Incompatible materials
Strong acid, oxidising agent, water

10.6. Hazardous decomposition products
In case of fire: Soot Gases/vapours, toxic

SECTION 11: Toxicological information

11.1. Information on toxicological effects

CAS-No	**Substance name**	**Toxicological information**
9016-87-9	Diphenylmethane diisocyanate isomers + homologues, CAS 9016-87-9	**LC_{50} inhalativ:** 0,31 mg/l 4 h (Rat,male/ female) OECD 403
13674-84-5	Tris(2-chloro-1-methylethyl)phosphate	**LD_{50} oral:** 1.500 mg/kg (Rat)
75-28-5	Isobutane	**LC_{50} inhalativ:** >20 mg/l 4 h (Rat)
74-98-6	Propane	**LC_{50} inhalativ:** >20 mg/l 4 h (Rat)

Acute oral toxicity:
Toxic if swallowed.

Acute inhalation toxicity:
Toxic by inhalation.

Corrosive/irritant effect on the skin:
Causes severe skin burns and eye damage.

Eye damage/irritation:
Causes serious eye damage.

Sensitisation of the respiratory tract or skin:
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Carcinogenicity:
May cause cancer if inhaled.

Specific target organ toxicity at single exposure:
May irritate the respiratory tract.

Specific target organ toxicity with repeated exposure:
May cause damage to organs through prolonged or repeated exposure.

SECTION 12: Environmental information

12.1. Toxicity

Aquatic toxicity:
Toxicological data are not available.

Behaviour in wastewater treatment plants:
Mechanical separation in cleaning systems possible.

Assessment/classification:
According to the criteria of the EC classification and labelling "dangerous for the environment", the substance/product is not to be labelled as dangerous for the environment.

12.2. Persistence and degradability

Biological degradation:
Readily biodegradable.

12.3. Bioaccumulative potential

Accumulation / Valuation:
The substance is not soluble in water. No indication of bioaccumulation potential.

12.4. Mobility in soil

No data available

12.5. Results of the PBT and vPvB assessment

The substances in the mixture do not fulfil the PBT/vPvB criteria according to REACH, Annex XIII.

12.6. Other harmful effects

No data available

SECTION 13: Disposal instructions

13.1. Waste treatment processes

13.1.1. Disposal of the product/packaging

Waste codes/waste designations according to EAK/AVV

Waste code Product:

08 04 10	Waste adhesives and sealants other than those mentioned in 08 04 09
08 04 09 *	Waste adhesives and sealants containing organic solvents or other hazardous substances

*: Proof of disposal is required.

Waste code Packaging:

15 01 11 *	Metal packaging containing a hazardous solid porous matrix (e.g. asbestos), including emptied pressurised containers
15 01 04	Metal packaging
17 04 05	Iron and steel

*: Proof of disposal is required.

Waste treatment solutions

Proper disposal / product:
Dispose of in accordance with official regulations. Contact the responsible authorised waste disposal company for waste disposal.

Proper disposal / packaging:
Completely emptied packaging can be recycled.

13.2. Additional information
No data available

SECTION 14: Transport information

Land transport (ADR/ RID)	Inland waterway transport (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1. UN no.			
1950	1950	1950	1950
14.2. UN proper shipping name			
PRESSURISED GAS PACKAGES, Flammable	PRESSURISED GAS PACKAGES, Flammable	PRESSURISED GAS PACKAGES, Flammable	PRESSURISED GAS PACKAGES, Flammable
14.3. Transport hazard classes			
 2.1	 2.1	 2.1	 2.1
14.4. Packaging group			
No data available			
14.5. Environmental hazards			
No	No	No	No
14.6. Special precautions for the user			
Special regulations: not determined **Limited quantity (LQ):** not determined **Hazard no. (Kemler number):** 23 **Classification code:** F **Remark:** -	**Special regulations:** not determined **Limited quantity (LQ):** not determined **Classification code:** F **Remark:**	**Special regulations:** not determined **Limited quantity (LQ):** not determined **EmS no:** **Remark:** -	**Special regulations:** not determined **Limited quantity (LQ):** not determined **Remark:** -

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

not determined

SECTION 15: Legislation

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

15.1.1. EU regulations

Other EU regulations:

Observe employment restrictions in accordance with the Youth Labour Protection Act (94/33/EC). Observe employment restrictions according to the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.Aerosol Directive (75/324/EEC)

15.1.2. National regulations

[DE] National regulations

Water hazard class (WGK)

WGK: 1 - slightly hazardous to water

Description:

Classification according to VwVwS, Annex 4.

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture have not been carried out.

15.3. Additional information

No data available

SECTION 16: Other information

16.1. Change notes

No data available

16.2. Abbreviations and acronyms

No data available

16.3. Important literature references and data sources

No data available

16.4. Classification of mixtures and assessment method used according to Regulation (EC) No 1272/2008 [CLP].

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard warnings	Categorisation procedure
Flammable aerosols *(Flam. Aerosol 1)*	H222: Extremely flammable aerosol.	
Acute toxicity (oral) *(Acute Tox. 4)*	H302: Harmful if swallowed.	
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Specific target organ toxicity at single exposure *(STOT SE 3)*	H335: May irritate the respiratory tract.	
Carcinogenicity *(Carc. 2)*	H351: Can probably cause cancer.	
Specific target organ toxicity with repeated exposure *(STOT RE 2)*	H373: May cause damage to organs through prolonged or repeated exposure.	

16.5. Wording of R-, H- and EUH-phrases (number and full text)

Hazard statements (R-phrases)	
R12	Highly flammable.
R20	Harmful if inhaled.
R22	Harmful if swallowed.
R36/37/38	Irritating to eyes, respiratory system and skin.
R40	Suspected carcinogenic effect.
R42/43	May cause sensitisation by inhalation and skin contact.
R48/20	Harmful: Danger of serious damage to health by prolonged exposure through inhalation.

Hazard warnings	
H220	Extremely flammable gas.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause allergic skin reactions.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May irritate the respiratory tract.
Hazard warnings	
H351	Can probably cause cancer.
H373	May cause damage to organs through prolonged or repeated exposure.

16.6. Training instructions

No data available

16.7. Additional notes

The information in this safety data sheet is correct to the best of our knowledge, information and belief at the date of printing. The information is intended to provide you with guidelines for the safe handling of the product mentioned in this safety data sheet during storage, processing, transport and disposal. The information is not transferable to other products. If the product is mixed, blended or processed with other materials or subjected to processing, the information in this safety data sheet cannot be transferred to the new material produced in this way, unless expressly stated otherwise.