

**1C B2 polyurethane foam**

Print date: 03.06.2014

Page 1 of 11

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

**1.1. Product identifier**

1C B2 polyurethane foam

**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**

|                         |                                   |                |
|-------------------------|-----------------------------------|----------------|
| Company name:           | HAGO Chemotechnik GmbH & Co. KG   |                |
| Street:                 | Bodenseestr. 217                  |                |
| Place:                  | D-81243 München                   |                |
| Telephone:              | +49 (0)89 897702-0                |                |
| e-mail:                 | msds@hago.de                      |                |
| Contact person:         | Claudia Meyer-Pundsack            | Telephone: -58 |
| e-mail:                 | claudia.meyer-pundsack@hago.de    |                |
| Internet:               | www.hago.de                       |                |
| Responsible Department: | Dept. Development and Application |                |

**1.4. Emergency telephone number:** public emergency number  
Giftnotruf Berlin 030-30686-790 (24 h)

**SECTION 2: Hazards identification**

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

Indications of danger: F+ - Extremely flammable, Xn - Harmful, Xi - Irritant  
 R phrases:  
 Extremely flammable.  
 Irritating to eyes, respiratory system and skin.  
 Limited evidence of a carcinogenic effect.  
 May cause sensitisation by inhalation and skin contact.  
 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

**GHS classification**

Hazard categories:  
 Aerosol: Aerosol 1  
 Skin corrosion/irritation: Skin Irrit. 2  
 Serious eye damage/eye irritation: Eye Irrit. 2  
 Respiratory/skin sensitization: Resp. Sens. 1  
 Respiratory/skin sensitization: Skin Sens. 1  
 Carcinogenicity: Carc. 2  
 Specific target organ toxicity - single exposure: STOT SE 3  
 Specific target organ toxicity - repeated exposure: STOT RE 2  
 Hazard Statements:  
 Extremely flammable aerosol.  
 Pressurised container: May burst if heated.  
 Causes skin irritation.  
 May cause an allergic skin reaction.  
 Causes serious eye irritation.  
 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 May cause respiratory irritation.  
 Suspected of causing cancer.  
 May cause damage to organs through prolonged or repeated exposure.

**2.2. Label elements**

**1C B2 polyurethane foam**

Print date: 03.06.2014

Page 2 of 11

**Hazardous components which must be listed on the label**

Diphenylmethanediisocyanate, isomers and homologues

Signal word:

Danger

Pictograms:

GHS02-GHS07-GHS08



**Hazard statements**

- |      |  |
|------|--|
| H222 | Extremely flammable aerosol.   |
| H229 | Pressurised container: May burst if heated.                                |
| H315 | Causes skin irritation.  |
| H317 | May cause an allergic skin reaction.                                       |
| H319 | Causes serious eye irritation.   |
| 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.         |

**Precautionary statements**

- |                |  |
|----------------|--|
| P410+P412      | Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.   |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P304+P340      | IF INHALED: Remove person to fresh air and keep comfortable for breathing.   |
| P280           | Wear protective gloves/protective clothing/eye protection/face protection.   |
| P271           | Use only outdoors or in a well-ventilated area.  |
| P260           | Do not breathe vapour/aerosol.   |
| P251           | Do not pierce or burn, even after use.   |
| P211           | Do not spray on an open flame or other ignition source.  |
| P210           | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.                                   |
| P102           | Keep out of reach of children.   |

**Special labelling of certain mixtures**

- |        |   |
|--------|---|
| EUH204 | Contains isocyanates. May produce an allergic reaction. |
|--------|---|

**2.3. Other hazards**

In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop.

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.

**SECTION 3: Composition/information on ingredients**

**3.2. Mixtures**

**1C B2 polyurethane foam**

Print date: 03.06.2014

Page 3 of 11

**Hazardous components**

| EC No            | Chemical name  | Quantity     |
|------------------|--|--------------|
| CAS No           | Classification   |              |
| Index No         | GHS classification   |              |
| REACH No         |  |              |
|                  | Diphenylmethanediisocyanate, isomers and homologues  | 5 - < 20 %   |
| 9016-87-9        | Carc. Cat. 3, Xn - Harmful, Xi - Irritant R40-20-48/20-36/37/38-42/43  |              |
| 615-005-01-6     | Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, Resp. Sens. 1, Skin Sens. 1, Carc. 2, STOT SE 3, STOT RE 2; H332 H315 H319 H334 H317 H351 H335 H373 |              |
| 237-158-7        | Tris (2-Chloroisopropyl) Phosphate   | 10 - < 25 %  |
| 13674-84-5       | Xn - Harmful R22   |              |
|                  | Acute Tox. 4; H302   |              |
| 01-2119486772-26 |  |              |
| 204-065-8        | dimethyl ether   | 2.5 - < 10 % |
| 115-10-6         | F+ - Extremely flammable R12   |              |
| 603-019-00-8     | Flam. Gas 1; H220  |              |
| 01-2119472128-37 |  |              |
| 200-857-2        | isobutane  | 2.5 - < 10 % |
| 75-28-5          | F+ - Extremely flammable R12   |              |
| 601-004-00-0     | Flam. Gas 1; H220  |              |
| 200-827-9        | propane  | 1 - < 10 %   |
| 74-98-6          | F+ - Extremely flammable R12   |              |
| 601-003-00-5     | Flam. Gas 1; H220  |              |

Full text of R and H phrases: see Section 16.

**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

**General information**

Move victim out of danger zone. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

**After inhalation**

Provide fresh air. In case of irregular breathing or respiratory arrest provide artificial respiration.

**After contact with skin**

After contact with skin, wash immediately with: Water and soap. In case of skin irritation, seek medical treatment.

**After contact with eyes**

In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

**After ingestion**

Do NOT induce vomiting. Call a physician immediately.

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

Allergic reactions. May cause sensitization by inhalation and skin contact.  
Danger of sticking eyes and skin due to curing foam.

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

First Aid, decontamination, treatment of symptoms.

**SECTION 5: Firefighting measures**

**1C B2 polyurethane foam**

Print date: 03.06.2014

Page 4 of 11

**5.1. Extinguishing media**

**Suitable extinguishing media**

Carbon dioxide (CO2). Foam. Extinguishing powder.

**Unsuitable extinguishing media**

High power water jet.

**5.2. Special hazards arising from the substance or mixture**

In case of fire may be liberated: Carbon monoxide. Carbon dioxide (CO2). Nitrogen oxides (NOx).

Hydrogen chloride (HCl). Hydrocyanic acid (hydrocyanic acid).

Vapours may form explosive mixtures with air.

**5.3. Advice for firefighters**

In case of fire and/or explosion do not breathe fumes. Wear a self-contained breathing apparatus and chemical protective clothing.

**Additional information**

Use water spray jet to protect personnel and to cool endangered containers. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

Provide adequate ventilation. Remove all sources of ignition.

Avoid contact with skin, eyes and clothes. Do not breathe vapour/aerosol.

**6.2. Environmental precautions**

Do not allow to enter into surface water or drains.

Do not allow to enter into soil/subsoil.

**6.3. Methods and material for containment and cleaning up**

Provide adequate ventilation. Allow stiffening. Take up mechanically.

**6.4. Reference to other sections**

Treat the recovered material as prescribed in the section on waste disposal.

Handling, Personal protection equipment: See protective measures under point 7 and 8.

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

**Advice on safe handling**

Provide adequate ventilation as well as local exhaust at critical locations. Do not use in enclosed rooms.

**Advice on protection against fire and explosion**

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C. Do not pierce or burn, even after use. Do not spray on a naked flame or any incandescent material. Keep away from sources of ignition - No smoking. Keep out of the reach of children. Vapours may form explosive mixtures with air. Take precautionary measures against static discharge.

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

**Requirements for storage rooms and vessels**

Keep in a cool, well-ventilated place.

**Advice on storage compatibility**

Do not store together with: Oxidizing agents.

**Further information on storage conditions**

Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

Recommended storage temperature: 15 - 23 °C. Storage above 23 °C will reduce shelf life significantly, depending on temperature and duration.

**7.3. Specific end use(s)**

**1C B2 polyurethane foam**

Print date: 03.06.2014

Page 5 of 11

not applicable

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**Exposure limits (EH40)**

| CAS No    | Substance   | ppm | mg/m <sup>3</sup> | fibres/ml | Category      | Origin |
|-----------|---|-----|-------------------|-----------|---------------|--------|
| 9016-87-9 | Diphenylmethanediisocyanate, isomers and homologues |     | 0,05              |           | TWA (8 h)     | AGW    |
|           |   |     |                   |           | STEL (15 min) | AGW    |
| 115-10-6  | Dimethyl ether                                      | 400 | 766               |           | TWA (8 h)     | WEL    |
|           |   | 500 | 958               |           | STEL (15 min) | WEL    |

**8.2. Exposure controls**

**Appropriate engineering controls**

Personal protective equipment has to be chosen in accordance with workplace specific conditions, e. g. concentration of the product. Chemical resistance has to be clarified with the supplier of protective equipment.

**Protective and hygiene measures**

Wash hands before breaks and after work. Do not eat, drink, smoke or sneeze at the workplace. Take off immediately all contaminated clothing.

**Eye/face protection**

Tightly sealed safety glasses.

**Hand protection**

Suitable material: Butyl rubber.

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

**Skin protection**

For the protection against direct skin contact, body protective clothing is essential (in addition to the usual working clothes).

**Respiratory protection**

Respiratory protection necessary at: insufficient ventilation.

Suitable respiratory protective equipment: gas filtering equipment (EN 141).

**Environmental exposure controls**

refer to chapter 7. No further action is necessary.

**SECTION 9: Physical and chemical properties**

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

Physical state: Aerosol  
 Colour: depending on type  
 Odour: characteristic

**Test method**

pH-Value: not applicable

**Changes in the physical state**

Melting point: not applicable

Initial boiling point and boiling range: not applicable

Flash point: not applicable

**1C B2 polyurethane foam**

Print date: 03.06.2014

Page 6 of 11

**Explosive properties**

In use, may form flammable/explosive vapour-air mixture.

|                         |                       |
|-------------------------|-----------------------|
| Lower explosion limits: | 1,5 vol. %            |
| Upper explosion limits: | 26,2 vol. %           |
| Ignition temperature:   | > 230 °C              |
| Vapour pressure:        | 5500 - 6000 hPa       |
| Density:                | not determined        |
| Water solubility:       | practically insoluble |
| Partition coefficient:  | not determined        |
| Viscosity / dynamic:    | not applicable        |
| Viscosity / kinematic:  | not applicable        |
| Vapour density:         | not determined        |
| Evaporation rate:       | not determined        |

**9.2. Other information**

none

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

There are no data available on the mixture itself.

**10.2. Chemical stability**

The product is stable under storage at normal ambient temperatures.

**10.3. Possibility of hazardous reactions**

Exothermic reactions with: Oxidizing agents, strong.  
In use, may form flammable/explosive vapour-air mixture.

**10.4. Conditions to avoid**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Do not expose to temperatures above 50 °C. Heating causes rise in pressure with risk of bursting.

**10.5. Incompatible materials**

Exothermic reactions with: Oxidizing agents, strong.

**10.6. Hazardous decomposition products**

Hazardous decomposition products: Carbon monoxide. Carbon dioxide. Nitrogen oxides (NOx).  
Hydrogen chloride (HCl). Hydrocyanic acid (hydrocyanic acid).

**SECTION 11: Toxicological information**

**11.1. Information on toxicological effects**

**Toxicokinetics, metabolism and distribution**

There are no data available on the mixture itself.

**Acute toxicity**

Based on available data, the classification criteria are not met.

**1C B2 polyurethane foam**

Print date: 03.06.2014

Page 7 of 11

**Acute toxicity**

| CAS No     | Chemical name                                       |        |                  |         |        |
|------------|---|--------|------------------|---------|--------|
|            | Exposure routes                                     | Method | Dose             | Species | Source |
| 9016-87-9  | Diphenylmethanediisocyanate, isomers and homologues |        |                  |         |        |
|            | oral  | LD50   | >10000 mg/kg     | Rat     |        |
|            | dermal  | LD50   | > 10000 mg/kg    | Rabbit  |        |
|            | inhalative vapour                                   | ATE    | 11 mg/l          |         |        |
|            | inhalative aerosol                                  | ATE    | 1,5 mg/l         |         |        |
| 13674-84-5 | Tris (2-Chloroisopropyl) Phosphate                  |        |                  |         |        |
|            | oral  | LD50   | 630 - 2000 mg/kg | Rat     |        |
|            | dermal  | LD50   | > 5000 mg/kg     | Rabbit  |        |
|            | inhalative (4 h) vapour                             | LC50   | > 7 mg/l         | Rat     |        |
| 115-10-6   | dimethyl ether                                      |        |                  |         |        |
|            | inhalative (4 h) gas                                | LC50   | 309 ppm          | Rat     |        |

**Irritation and corrosivity**

Causes skin irritation.  
Causes serious eye irritation.

**Sensitising effects**

May cause an allergic skin reaction. (Diphenylmethanediisocyanate, isomers and homologues)  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
(Diphenylmethanediisocyanate, isomers and homologues)  
Do not apply to the cured foam.

**STOT-single exposure**

May cause respiratory irritation. (Diphenylmethanediisocyanate, isomers and homologues)

**Severe effects after repeated or prolonged exposure**

May cause damage to organs through prolonged or repeated exposure.  
(Diphenylmethanediisocyanate, isomers and homologues)

**Carcinogenic/mutagenic/toxic effects for reproduction**

Suspected of causing cancer. (Diphenylmethanediisocyanate, isomers and homologues)

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**SECTION 12: Ecological information**

**12.1. Toxicity**

There are no data available on the mixture itself.

**1C B2 polyurethane foam**

Print date: 03.06.2014

Page 8 of 11

| CAS No     | Chemical name                                       |        |             |           |                                |        |
|------------|---|--------|-------------|-----------|--------------------------------|--------|
|            | Aquatic toxicity                                    | Method | Dose        | [h]   [d] | Species                        | Source |
| 9016-87-9  | Diphenylmethanediisocyanate, isomers and homologues |        |             |           |                                |        |
|            | Acute fish toxicity                                 | LC50   | > 1000 mg/l | 96 h      | Brachydanio rerio (zebra-fish) |        |
| 13674-84-5 | Tris (2-Chloroisopropyl) Phosphate                  |        |             |           |                                |        |
|            | Acute fish toxicity                                 | LC50   | 56,2 mg/l   | 96 h      |                                |        |
|            | Acute algae toxicity                                | ErC50  | 82 mg/l     | 72 h      |                                |        |
|            | Acute crustacea toxicity                            | EC50   | 131 mg/l    | 48 h      | Daphnia magna                  |        |
| 115-10-6   | dimethyl ether                                      |        |             |           |                                |        |
|            | Acute fish toxicity                                 | LC50   | > 4,1 mg/l  | 96 h      | Poecilia reticulata (Guppy)    |        |
|            | Acute algae toxicity                                | ErC50  | 154,9 mg/l  | 96 h      |                                |        |
|            | Acute crustacea toxicity                            | EC50   | > 4,4 mg/l  | 48 h      | Daphnia magna (Big water flea) |        |

**12.2. Persistence and degradability**

There are no data available on the mixture itself.

| CAS No    | Chemical name                                       |        |    |        |
|-----------|---|--------|----|--------|
|           | Method  | Value  | d  | Source |
|           | Evaluation  |        |    |        |
| 9016-87-9 | Diphenylmethanediisocyanate, isomers and homologues |        |    |        |
|           | OECD 302C   | < 10 % | 28 |        |
|           | Poorly biodegradable.                               |        |    |        |

**12.3. Bioaccumulative potential**

There are no data available on the mixture itself.

**Partition coefficient n-octanol/water**

| CAS No     | Chemical name                      | Log Pow |
|------------|------------------------------------|---------|
| 13674-84-5 | Tris (2-Chloroisopropyl) Phosphate | -2,68   |
| 115-10-6   | dimethyl ether                     | 0,1     |
| 75-28-5    | isobutane                          | 2,8     |
| 74-98-6    | propane                            | 2,36    |

**12.4. Mobility in soil**

There are no data available on the mixture itself.

**12.5. Results of PBT and vPvB assessment**

There are no data available on the mixture itself.

**12.6. Other adverse effects**

none

**Further information**

According to the criteria of the European classification and labelling system, the substance/the product has not to be labelled as "dangerous for the environment".

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

**Advice on disposal**

Dispose of waste according to applicable legislation.

**Waste disposal number of waste from residues/unused products**

**1C B2 polyurethane foam**

Print date: 03.06.2014

Page 9 of 11

160504 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; gases in pressure containers (including halons) containing dangerous substances  
Classified as hazardous waste.

**Waste disposal number of used product**

170203 CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES); wood, glass and plastic; plastic

**Waste disposal number of contaminated packaging**

080409 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes from MFSU of adhesives and sealants (including waterproofing products); waste adhesives and sealants containing organic solvents or other dangerous substances  
Classified as hazardous waste.

**Contaminated packaging**

In Germany: Taking back without additional costs by PU-Dosen-Recycling GmbH & Co. BetriebsKG (PDR), Am alten Sägewerk 3, D-95349 Thurnau. Order and pickup: phone 0800-7836736 or fax 0800-7836737.

**SECTION 14: Transport information**

**Land transport (ADR/RID)**

14.1. UN number: UN 1950  
 14.2. UN proper shipping name: AEROSOLS  
 14.3. Transport hazard class(es): 2  
 14.4. Packing group: -  
 Hazard label: 2.1



Classification code: 5F  
 Limited quantity: 1 L  
 Transport category: 2  
 Tunnel restriction code: D

**Other applicable information (land transport)**

Transport as "limited quantity" according to chapter 3.4 ADR/RID.

**Inland waterways transport (ADN)**

14.1. UN number: UN 1950  
 14.2. UN proper shipping name: AEROSOLS  
 14.3. Transport hazard class(es): 2  
 14.4. Packing group: -  
 Hazard label: 2.1



Classification code: 5F  
 Limited quantity: 1 L

**Marine transport (IMDG)**

14.1. UN number: UN 1950  
 14.2. UN proper shipping name: AEROSOLS

**1C B2 polyurethane foam**

Print date: 03.06.2014 Page 10 of 11

**14.3. Transport hazard class(es):** 2.1  
**14.4. Packing group:** -  
 Hazard label: 2.1

Marine pollutant: -  
 Limited quantity: See SP277  
 EmS: F-D, S-U



**Air transport (ICAO)**

**14.1. UN number:** UN 1950  
**14.2. UN proper shipping name:** AEROSOLS, flammable  
**14.3. Transport hazard class(es):** 2.1  
 Hazard label: 2.1



Limited quantity Passenger: 30 kg G

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: no

**14.6. Special precautions for user**

see chapter 6 - 8

**14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

not relevant

**SECTION 15: Regulatory information**

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

**EU regulatory information**

1999/13/EC (VOC): (please refer to the manufacturer)

**National regulatory information**

Employment restrictions: Observe employment restrictions for young people. Observe employment restrictions for child bearing mothers and nursing.

Water contaminating class (D): - - not water contaminating

Skin resorption/Sensitization: Causes allergic hypersensitivity reactions.

**15.2. Chemical safety assessment**

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

**SECTION 16: Other information**

**Changes**

Section: 2, 11, 12, 13

**Full text of R phrases referred to under Sections 2 and 3**

- 12 Extremely flammable.
- 20 Harmful by inhalation.
- 22 Harmful if swallowed.
- 36/37/38 Irritating to eyes, respiratory system and skin.
- 40 Limited evidence of a carcinogenic effect.

**1C B2 polyurethane foam**

Print date: 03.06.2014

Page 11 of 11

- 42/43 May cause sensitisation by inhalation and skin contact.
- 48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

**Full text of H statements referred to under Sections 2 and 3**

- H220 Extremely flammable gas.
- H222 Extremely flammable aerosol.
- H229 Pressurised container: May burst if heated.
- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- 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.

**Further Information**

Data sources: Data arise from reference works and literature.

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

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*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*