

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Commercial Product Name: ALEXIT BR12H0-BladeRep Hardener 12  
Quality No.: 4053D00000000

Revision Date 30.01.2023  
Print Date 30.01.2023  
Version 3

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

### 1.1 Product identifier

Trade name : ALEXIT BR12H0-BladeRep Hardener 12 farblos / transparent

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

Use of the Sub- : Industrial serial painting  
stance/Mixture

### 1.3 Details of the supplier of the safety data sheet

Producer : Mankiewicz Gebr. & Co. (GmbH & Co. KG)  
Georg-Wilhelm-Strasse 189  
21107 Hamburg  
Germany

#### Only for UK:

Supplied by Mankiewicz UK LLP  
26 Ashville Way, Whetstone,  
Leicester LE8 6NU  
United Kingdom

Telephone : +49 (0) 40 75103 0  
Telefax : +49 (0) 40 75103 375  
E-mail address of person : sdb\_info@umco.de  
responsible for the SDS

### 1.4 Emergency telephone number

Emergency telephone num- : +44 1865 407333 (NCEC)  
ber

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 3	H226: Flammable liquid and vapour.
Acute toxicity, Category 4	H332: Harmful if inhaled.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Specific target organ toxicity - single exposure, Category 3, Central nervous system	H336: May cause drowsiness or dizziness.
Specific target organ toxicity - single ex-	H335: May cause respiratory irritation.

Mankiewicz Gebr. & Co. (GmbH & Co. KG)  
Georg-Wilhelm-Straße 189  
21107 Hamburg (Wilhelmsburg)  
Tel.: +49 (0) 40 / 75 10 30  
Fax: +49 (0) 40 / 75 10 33 75  
www.mankiewicz.de

Bank Name	Ort	Kto.-Nr.	BLZ	BIC	IBAN
Deutsche Bank	Hamburg	600227300	200 700 00	DEUTDE33HAN30	DE58 2007 0000 0600 2273 00
HypoVereinsbank	Hamburg	59273300	200 300 00	HYVEDE33HAN30	DE34 2003 0000 0059 2733 00
Postbank	Hamburg	373205	200 100 20	PBNKDE33HAN30	DE85 2001 0020 0000 3732 05

Sitz/Registriergericht Hamburg: HRA 42442  
Persönlich haftende Gesellschafterin:  
Grau Gebr. Beteiligungs-GmbH  
Sitz/Registriergericht Hamburg: HRB 17189  
Geschäftsführender Gesellschafter:  
Michael O. Grau

Bureau Veritas  
Certification:  
ISO 9001,  
TS 16949,  
EN 9100



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Commercial Product Name: ALEXIT BR12H0-BladeRep Hardener 12  
Quality No.: 4053D00000000

Revision Date 30.01.2023  
Print Date 30.01.2023  
Version 3

posure, Category 3, Respiratory system

## 2.2 Label elements

### Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Warning

Hazard statements : H226 Flammable liquid and vapour.  
H317 May cause an allergic skin reaction.  
H332 Harmful if inhaled.  
H335 May cause respiratory irritation.  
H336 May cause drowsiness or dizziness.

Supplemental Hazard Statements : EUH066 Repeated exposure may cause skin dryness or cracking.

Precautionary statements : **Prevention:**  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P261 Avoid breathing mist or vapours.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

### Response:

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.  
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

### Hazardous components which must be listed on the label:

Hexamethylene diisocyanate, oligomers  
n-butyl acetate

### Additional Labelling

"As from 24 August 2023 adequate training is required before industrial or professional use."

## 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Mankiewicz Gebr. & Co. (GmbH & Co. KG)  
Georg-Wilhelm-Straße 189  
21107 Hamburg (Wilhelmsburg)  
Tel.: +49 (0) 40 / 75 10 30  
Fax: +49 (0) 40 / 75 10 33 75  
www.mankiewicz.de

Bank Name	Ort	Kto.-Nr.	BLZ	BIC	IBAN
Deutsche Bank	Hamburg	600227300	200 700 00	DEUTDE33HAN	DE58 2007 0000 0600 2273 00
HypoVereinsbank	Hamburg	592733000	200 300 00	HYVEDE33HAN	DE34 2003 0000 0059 2733 00
Postbank	Hamburg	373205	200 100 20	PBNKDE33HAN	DE85 2001 0020 0000 3732 05

Sitz/Registriergericht Hamburg: HRA 42442  
Persönlich haftende Gesellschafterin:  
Grau Gebr. Beteiligungs-GmbH  
Sitz/Registriergericht Hamburg: HRB 17189  
Geschäftsführender Gesellschafter:  
Michael O. Grau

Bureau Veritas  
Certification:  
ISO 9001,  
TS 16949,  
EN 9100



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Commercial Product Name: ALEXIT BR12H0-BladeRep Hardener 12  
Quality No.: 4053D00000000

Revision Date 30.01.2023  
Print Date 30.01.2023  
Version 3

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Chemical nature : Hardener based on polyisocyanates

#### Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Hexamethylene diisocyanate, oligomers	28182-81-2 500-060-2 01-2119970543-34	Acute Tox. 4; H332 Skin Sens. 1; H317 STOT SE 3; H335 (Respiratory system)	$\geq 40 - \leq 100$
n-butyl acetate	123-86-4 204-658-1 607-025-00-1 01-2119485493-29	Flam. Liq. 3; H226 STOT SE 3; H336 (Central nervous system) EUH066	$\geq 25 - < 40$

These contain:

hexamethylene-di-isocyanate	822-06-0 212-485-8 615-011-00-1 01-2119457571-37	Acute Tox. 4; H302 Acute Tox. 1; H330 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Resp. Sens. 1; H334 Skin Sens. 1; H317 STOT SE 3; H335 (Respiratory system)  specific concentration limit Resp. Sens. 1; H334 $\geq 0.5\%$ Skin Sens. 1; H317 $\geq 0.5\%$	$> 0.25 - \leq 0.5$
-----------------------------	---	--	---------------------

For explanation of abbreviations see section 16.



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Commercial Product Name: ALEXIT BR12H0-BladeRep Hardener 12  
Quality No.: 4053D00000000

Revision Date 30.01.2023  
Print Date 30.01.2023  
Version 3

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

- General advice : In all cases of doubt, or when sickness symptoms persist, seek medical attention.  
Never give anything by mouth to an unconscious person.
- If inhaled : Remove to fresh air, keep patient warm and at rest.  
Irregular breathing/no breathing: artificial respiration.  
If unconscious place in recovery position and seek medical advice.
- In case of skin contact : Take off all contaminated clothing immediately.  
Wash skin thoroughly with soap and water or use recognised skin cleanser.  
Do NOT use solvents or thinners !
- In case of eye contact : Remove contact lenses, irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart and seek medical advice.
- If swallowed : Do NOT induce vomiting.  
If accidentally swallowed obtain immediate medical attention.  
Never give anything by mouth to an unconscious person.  
Keep at rest.

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

- Risks : May cause an allergic skin reaction.  
Harmful if inhaled.  
May cause respiratory irritation.  
May cause drowsiness or dizziness.  
Repeated exposure may cause skin dryness or cracking.

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

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

- Suitable extinguishing media : Alcohol resistant foam, CO2, powders
- Unsuitable extinguishing media : High volume water jet

### 5.2 Special hazards arising from the substance or mixture

- Specific hazards during fire-fighting : Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.

### 5.3 Advice for firefighters

- Special protective equipment for firefighters : Appropriate breathing apparatus may be required.

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Commercial Product Name: ALEXIT BR12H0-BladeRep Hardener 12  
Quality No.: 4053D00000000

Revision Date 30.01.2023  
Print Date 30.01.2023  
Version 3

Further information : Cool endangered containers with water in case of fire.  
DO NOT ALLOW RUN-OFF FROM FIRE FIGHTING TO  
ENTER DRAINS OR WATER COURSES!!

## SECTION 6: Accidental release measures

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

Personal precautions : Exclude sources of ignition and ventilate the area.  
Do not inhale vapours.  
Refer to protective measures listed in sections 7 and 8.  
Immediately clean contaminated areas with following substances:

Water	45 Vol.%
Ethanol or Isopropyl Alcohol	50 Vol.%
Ammonia solution (density=0,88)	5 Vol.%

Alternative applicable to that (not flammable):

Sodium Carbonate	5 Vol.%
Water	95 Vol.%

### 6.2 Environmental precautions

Environmental precautions : Do not let product enter drains.  
If the product contaminates lakes, rivers or sewage, inform appropriate authorities in accordance with local regulations.  
Add the same decontaminant to the remnants and let stand for several days until no further reaction in non-sealed container. Once this stage is reached, close container and dispose according to local regulations.

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

Methods for cleaning up : Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see chapter 13).  
Clean preferably with a detergent; avoid use of solvents.

### 6.4 Reference to other sections

For personal protection see section 8.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Advice on safe handling : Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this preparation is used !  
Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentrations higher than the occupational exposure limits.  
Comply with the health and safety at work laws.



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Commercial Product Name: ALEXIT BR12H0-BladeRep Hardener 12  
Quality No.: 4053D00000000

Revision Date 30.01.2023  
Print Date 30.01.2023  
Version 3

Smoking, eating and drinking should be prohibited in the application area.

Advice on protection against fire and explosion : The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Preparation may charge electrostatically: always use earthing leads when transferring from one container to another. Operators should wear anti-static footwear and clothing. No sparking tools should be used. Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air.

## 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Electrical equipment should be protected to the appropriate standard. Floors should be of the conducting type. Keep container tightly closed. Never use pressure to empty: container is not a pressure vessel. No smoking. Prevent unauthorized access. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Further information on storage conditions : Always keep in containers of same material as the original one. See also instructions on the label. Avoid heating and direct sunlight. Keep container dry in a cool, well-ventilated place. Precautions should be taken to minimise exposure to atmospheric humidity or water: CO<sub>2</sub> will be formed which in closed containers can result in pressurisation. **DO NOT KEEP THE CONTAINERS SEALED !!**

Advice on common storage : Keep away from oxidizing agents and strongly acid or alkaline materials.

Recommended storage temperature : 5 - 35 °C

## 7.3 Specific end use(s)

Specific use(s) : This information is not available.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Hexamethylene diisocyanate, oligomers	28182-81-2	TWA	0.02 mg/m <sup>3</sup> (NCO)	GB EH40
	Further information: Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific airway hyper-responsiveness via an immunological irritant or other mechanism. Once the airways have become hyper-responsive, further exposure to			



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Commercial Product Name: ALEXIT BR12H0-BladeRep Hardener 12  
Quality No.: 4053D00000000

Revision Date 30.01.2023  
Print Date 30.01.2023  
Version 3

the substance, sometimes even in tiny quantities, may cause respiratory symptoms. These symptoms can range in severity from a runny nose to asthma. Not all workers who are exposed to a sensitiser will become hyper-responsive and it is impossible to identify in advance those who are likely to become hyper-responsive. Substances that can cause occupational asthma should be distinguished from substances which may trigger the symptoms of asthma in people with pre-existing airway hyper-responsiveness, but which do not include the disease themselves. The latter substances are not classified as asthmagens or respiratory sensitisers. Further information can be found in the HSE publication Asthmagen? Critical assessments of the evidence for agents implicated in occupational asthma., Wherever it is reasonably practicable, exposure to substances that can cause occupational asthma should be prevented. Where this is not possible, the primary aim is to apply adequate standards of control to prevent workers from becoming hyper-responsive. For substances that can cause occupational asthma, COSHH requires that exposure be reduced to as low as is reasonably practicable. Activities giving rise to short-term peak concentrations should receive particular attention when risk management is being considered. Health surveillance is appropriate for all employees exposed or liable to be exposed to a substance which may cause occupational asthma and there should be appropriate consultation with an occupational health professional over the degree of risk and level of surveillance., Capable of causing occupational asthma., The 'Sen' notation in the list of WELs has been assigned only to those substances which may cause occupational asthma in the categories shown in Table 1. It should be remembered that other substances not in these tables may cause occupational asthma. HSE's asthma web pages ([www.hse.gov.uk/asthma](http://www.hse.gov.uk/asthma)) provide further information.

	STEL	0.07 mg/m3 (NCO)	GB EH40
--	------	------------------	---------

Further information: Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific airway hyper-responsiveness via an immunological irritant or other mechanism. Once the airways have become hyper-responsive, further exposure to the substance, sometimes even in tiny quantities, may cause respiratory symptoms. These symptoms can range in severity from a runny nose to asthma. Not all workers who are exposed to a sensitiser will become hyper-responsive and it is impossible to identify in advance those who are likely to become hyper-responsive. Substances that can cause occupational asthma should be distinguished from substances which may trigger the symptoms of asthma in people with pre-existing airway hyper-responsiveness, but which do not include the disease themselves. The latter substances are not classified as asthmagens or respiratory sensitisers. Further information can be found in the HSE publication Asthmagen? Critical assessments of the evidence for agents implicated in occupational asthma., Wherever it is reasonably practicable, exposure to substances that can cause occupational asthma should be prevented. Where this is not possible, the primary aim is to apply adequate standards of control to prevent workers from becoming hyper-responsive. For substances that can cause occupational asthma, COSHH requires that exposure be reduced to as low as is reasonably practicable. Activities giving rise to short-term peak concentrations should receive particular attention when risk management is being considered. Health surveillance is appropriate for all employees exposed or liable to be exposed to a substance which may cause occupational asthma and there should be appropriate consultation with an occupational health professional over the degree of risk and level of surveillance., Capable of causing occupational asthma., The 'Sen' notation in the list

Mankiewicz Gebr. & Co. (GmbH & Co. KG)  
Georg-Wilhelm-Straße 189  
21107 Hamburg (Wilhelmsburg)  
Tel.: +49 (0) 40 / 75 10 30  
Fax: +49 (0) 40 / 75 10 33 75  
[www.mankiewicz.de](http://www.mankiewicz.de)

Bank Name	Ort	Kto.-Nr.	BLZ	BIC	IBAN
Deutsche Bank	Hamburg	600227300	200 700 00	DEUTDE33HAN	DE58 2007 0000 0600 2273 00
HypoVereinsbank	Hamburg	59273300	200 300 00	HYVEDE33HAN	DE34 2003 0000 0059 2733 00
Postbank	Hamburg	373205	200 100 20	PBNKDE33HAN	DE85 2001 0020 0000 3732 05

Sitz/Registriergericht Hamburg: HRA 42442  
Bureau Veritas Certification: ISO 9001, TS 16949, EN 9100  
Sitz/Registriergericht Hamburg: HRB 17189  
Geschäftsführender Gesellschafter: Michael O. Grau



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Commercial Product Name: ALEXIT BR12H0-BladeRep Hardener 12  
Quality No.: 4053D00000000

Revision Date 30.01.2023  
Print Date 30.01.2023  
Version 3

	of WELs has been assigned only to those substances which may cause occupational asthma in the categories shown in Table 1. It should be remembered that other substances not in these tables may cause occupational asthma. HSE's asthma web pages ( <a href="http://www.hse.gov.uk/asthma">www.hse.gov.uk/asthma</a> ) provide further information.			
n-butyl acetate	123-86-4	TWA	150 ppm 724 mg/m3	GB EH40
		STEL	200 ppm 966 mg/m3	GB EH40
		STEL	150 ppm 723 mg/m3	2019/1831/E U
Further information: Indicative				
		TWA	50 ppm 241 mg/m3	2019/1831/E U
Further information: Indicative				
hexamethylene-diisocyanate	822-06-0	TWA	0.02 mg/m3 (NCO)	GB EH40
	Further information: Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific airway hyper-responsiveness via an immunological irritant or other mechanism. Once the airways have become hyper-responsive, further exposure to the substance, sometimes even in tiny quantities, may cause respiratory symptoms. These symptoms can range in severity from a runny nose to asthma. Not all workers who are exposed to a sensitiser will become hyper-responsive and it is impossible to identify in advance those who are likely to become hyper-responsive. Substances that can cause occupational asthma should be distinguished from substances which may trigger the symptoms of asthma in people with pre-existing airway hyper-responsiveness, but which do not include the disease themselves. The latter substances are not classified as asthmagens or respiratory sensitisers. Further information can be found in the HSE publication Asthmagen? Critical assessments of the evidence for agents implicated in occupational asthma., Wherever it is reasonably practicable, exposure to substances that can cause occupational asthma should be prevented. Where this is not possible, the primary aim is to apply adequate standards of control to prevent workers from becoming hyper-responsive. For substances that can cause occupational asthma, COSHH requires that exposure be reduced to as low as is reasonably practicable. Activities giving rise to short-term peak concentrations should receive particular attention when risk management is being considered. Health surveillance is appropriate for all employees exposed or liable to be exposed to a substance which may cause occupational asthma and there should be appropriate consultation with an occupational health professional over the degree of risk and level of surveillance., Capable of causing occupational asthma., The 'Sen' notation in the list of WELs has been assigned only to those substances which may cause occupational asthma in the categories shown in Table 1. It should be remembered that other substances not in these tables may cause occupational asthma. HSE's asthma web pages ( <a href="http://www.hse.gov.uk/asthma">www.hse.gov.uk/asthma</a> ) provide further information.			
		STEL	0.07 mg/m3 (NCO)	GB EH40
	Further information: Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific airway hyper-responsiveness via an immunological irritant or other mechanism. Once the airways have become hyper-responsive, further exposure to			

Mankiewicz Gebr. & Co. (GmbH & Co. KG)  
Georg-Wilhelm-Straße 189  
21107 Hamburg (Wilhelmsburg)  
Tel.: +49 (0) 40 / 75 10 30  
Fax: +49 (0) 40 / 75 10 33 75  
[www.mankiewicz.de](http://www.mankiewicz.de)

Bank Name Deutsche Bank  
Ort Hamburg  
Kto.-Nr. 600227300  
BLZ 200 700 00  
BIC DEUTDE33  
HYPovereinsbank Hamburg 59273300  
Postbank Hamburg 373205

IBAN 200 700 00 DEUTDE33  
200 300 00 HYVEDE33  
200 100 20 PBNKDE33

Sitz/Registergericht Hamburg: HRA 42442  
Persönlich haftende Gesellschafterin:  
Grau Gebr. Beteiligungs-GmbH  
Sitz/Registergericht Hamburg: HRB 17189  
Geschäftsführender Gesellschafter:  
Michael O. Grau

Bureau Veritas  
Certification:  
ISO 9001,  
TS 16949,  
EN 9100





# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Commercial Product Name: ALEXIT BR12H0-BladeRep Hardener 12  
Quality No.: 4053D00000000

Revision Date 30.01.2023  
Print Date 30.01.2023  
Version 3

the substance, sometimes even in tiny quantities, may cause respiratory symptoms. These symptoms can range in severity from a runny nose to asthma. Not all workers who are exposed to a sensitiser will become hyper-responsive and it is impossible to identify in advance those who are likely to become hyper-responsive. Substances that can cause occupational asthma should be distinguished from substances which may trigger the symptoms of asthma in people with pre-existing airway hyper-responsiveness, but which do not include the disease themselves. The latter substances are not classified as asthmagens or respiratory sensitisers. Further information can be found in the HSE publication Asthmagen? Critical assessments of the evidence for agents implicated in occupational asthma., Wherever it is reasonably practicable, exposure to substances that can cause occupational asthma should be prevented. Where this is not possible, the primary aim is to apply adequate standards of control to prevent workers from becoming hyper-responsive. For substances that can cause occupational asthma, COSHH requires that exposure be reduced to as low as is reasonably practicable. Activities giving rise to short-term peak concentrations should receive particular attention when risk management is being considered. Health surveillance is appropriate for all employees exposed or liable to be exposed to a substance which may cause occupational asthma and there should be appropriate consultation with an occupational health professional over the degree of risk and level of surveillance., Capable of causing occupational asthma., The 'Sen' notation in the list of WELs has been assigned only to those substances which may cause occupational asthma in the categories shown in Table 1. It should be remembered that other substances not in these tables may cause occupational asthma. HSE's asthma web pages ([www.hse.gov.uk/asthma](http://www.hse.gov.uk/asthma)) provide further information.

## Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
Hexamethylene diisocyanate, oligomers	28182-81-2	isocyanate-derived diamine (Isocyanates): 1 µmol/mol creatinine (Urine)	At the end of the period of exposure	GB EH40 BAT

## Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Hexamethylene diisocyanate, oligomers	Workers	Inhalation	Long-term local effects	0.5 mg/m <sup>3</sup>
n-butyl acetate	Workers	Inhalation	Long-term systemic effects	300 mg/m <sup>3</sup>
	Workers	Dermal	Long-term systemic effects	11 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	35.7 mg/m <sup>3</sup>
	Consumers	Dermal	Long-term systemic effects	6 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	2 mg/kg bw/day
Hexamethylene diisocyanate, oligomers	Workers	Inhalation	Long-term local effects	0.5 mg/m <sup>3</sup>
n-butyl acetate	Workers	Inhalation	Long-term systemic	300 mg/m <sup>3</sup>



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Commercial Product Name: ALEXIT BR12H0-BladeRep Hardener 12  
Quality No.: 4053D00000000

Revision Date 30.01.2023  
Print Date 30.01.2023  
Version 3

			effects	
	Workers	Dermal	Long-term systemic effects	11 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	35.7 mg/m3
	Consumers	Dermal	Long-term systemic effects	6 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	2 mg/kg bw/day

## Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value	
Hexamethylene diisocyanate, oligomers	Sewage treatment plant	6.46 mg/l	
n-butyl acetate	Fresh water	0.18 mg/l	
	Marine water	0.0018 mg/l	
	Fresh water sediment	0.981 mg/kg dry weight (d.w.)	
	Marine sediment	0.098 mg/kg dry weight (d.w.)	
	Sewage treatment plant	35.6 mg/l	
Hexamethylene diisocyanate, oligomers	Soil	0.09 mg/kg dry weight (d.w.)	
	Sewage treatment plant	6.46 mg/l	
	n-butyl acetate	Fresh water	0.18 mg/l
		Marine water	0.0018 mg/l
		Fresh water sediment	0.981 mg/kg dry weight (d.w.)
Marine sediment		0.098 mg/kg dry weight (d.w.)	
Hexamethylene diisocyanate, oligomers	Sewage treatment plant	35.6 mg/l	
	Soil	0.09 mg/kg dry weight (d.w.)	

## 8.2 Exposure controls

### Engineering measures

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and below the OEL (= Occupational Exposure Limit), suitable respiratory protection must be worn.

### Personal protective equipment

Eye/face protection : Wear safety goggles to protect against solvent splashes.

Hand protection

Remarks : Adhere to the professional organisation rule "Use of protective gloves". Appropriate chemicals resistant glove tested in compliance with EN 374.  
Recommendation for protection against components generally found in the products:

For short-term contact (i.e. splash protection):

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Commercial Product Name: ALEXIT BR12H0-BladeRep Hardener 12  
Quality No.: 4053D00000000

Revision Date 30.01.2023  
Print Date 30.01.2023  
Version 3

Appropriate material:  
nitrile rubber, Neoprene  
Material thickness: > 0,4 mm  
Breakthrough time: > 480 min

Before use, the protective glove should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties). Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves. Protective gloves shall be replaced immediately when physically damaged or worn. Preventive hand protection (skin protection cream) recommended. Wash immediately contaminated skin. Design operations thus to avoid permanent use of protective gloves.

- Skin and body protection : Depending on the probability of the occurrence of dangerously explosive atmospheres, adapted protective clothing must be worn.
- Respiratory protection : By spraying: air-fed respirator.  
By other operations than spraying: in well ventilated areas, air-fed respirators could be replaced by a combination of charcoal filter and particulate filter mask  
Use half-mask model with cartridge or air-fed.
- Protective measures : Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this preparation is used.  
Do not eat or drink during work - no smoking.  
Avoid product contact with skin, eyes and clothing.  
Avoid the inhalation of dust from sanding, particulates and spray mist arising from the application of this preparation.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- Physical state : liquid
- Colour : according product name
- Odour : characteristic
- Boiling point/boiling range : ca. 120 °C
- Upper explosion limit : 10.0 %(V)
- Lower explosion limit : 1.0 %(V)
- Flash point : 35 °C  
Method: ISO 13736



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Commercial Product Name: ALEXIT BR12H0-BladeRep Hardener 12  
Quality No.: 4053D00000000

Revision Date 30.01.2023  
Print Date 30.01.2023  
Version 3

Auto-ignition temperature	:	> 400 °C
pH	:	No data available
Viscosity		
Viscosity, kinematic	:	> 21 mm <sup>2</sup> s
Flow time	:	33 s Cross section: 4 mm Method: DIN 53211
		23 s Cross section: 6 mm Method: ISO 2431
Solubility(ies)		
Water solubility	:	insoluble
Vapour pressure	:	ca. 100 hPa (50 °C)
Density	:	ca. 1.06 g/cm <sup>3</sup> (20 °C)

## 9.2 Other information

Miscibility with water	:	immiscible
Solvent separation	:	< 3 %(V)

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No decomposition if stored and applied as directed.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.  
There are no data available on the preparation itself.

### 10.4 Conditions to avoid

Conditions to avoid : Stable under recommended storage and handling conditions  
(See section 7).

### 10.5 Incompatible materials

Materials to avoid : Keep away from oxidizing agents, strongly alkaline and  
strongly acid materials in order to avoid exothermic reactions.  
The product reacts slowly with water resulting in evolution of  
carbon dioxide. In closed containers, pressure build up could



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Commercial Product Name: ALEXIT BR12H0-BladeRep Hardener 12  
Quality No.: 4053D00000000

Revision Date 30.01.2023  
Print Date 30.01.2023  
Version 3

result distortion blowing and in extreme cases bursting of the container.

## 10.6 Hazardous decomposition products

In a fire, hazardous decomposition products, such as smoke, carbon monoxide, carbon dioxide, oxides of nitrogen, hydrogen cyanide, monomers of isocyanates, amines and alcohols may be produced.

## SECTION 11: Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute toxicity

Harmful if inhaled.

#### Product:

Acute inhalation toxicity : Assessment: The substance/mixture is not toxic on inhalation as defined by dangerous goods regulations.

Acute toxicity estimate: 14.67 mg/l

Exposure time: 4 h

Test atmosphere: vapour

Method: Calculation method

#### Components:

#### Hexamethylene diisocyanate, oligomers:

Acute inhalation toxicity : Assessment: The substance/mixture is not toxic on inhalation as defined by dangerous goods regulations.

#### Skin corrosion/irritation

Repeated exposure may cause skin dryness or cracking.

#### Serious eye damage/eye irritation

Not classified based on available information.

#### Respiratory or skin sensitisation

#### Skin sensitisation

May cause an allergic skin reaction.

#### Respiratory sensitisation

Not classified based on available information.

#### Components:

#### Hexamethylene diisocyanate, oligomers:

Species : Mouse

Assessment : May cause sensitisation by skin contact.

Method : OECD Test Guideline 429

#### Germ cell mutagenicity

Not classified based on available information.



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Commercial Product Name: ALEXIT BR12H0-BladeRep Hardener 12  
Quality No.: 4053D00000000

Revision Date 30.01.2023  
Print Date 30.01.2023  
Version 3

## Carcinogenicity

Not classified based on available information.

## Reproductive toxicity

Not classified based on available information.

## STOT - single exposure

May cause respiratory irritation.

May cause drowsiness or dizziness.

## Components:

### Hexamethylene diisocyanate, oligomers:

Assessment : May cause respiratory irritation.

## STOT - repeated exposure

Not classified based on available information.

## Aspiration toxicity

Not classified based on available information.

## 11.2 Information on other hazards

### Endocrine disrupting properties

#### Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### Further information

#### Product:

Remarks : Exposure of vapour concentration in excess of the stated OEL's may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue muscular weakness, drowsiness and in extrem cases, loss of consciousness. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and absorption through the skin. The liquid splashed in the eyes may cause irritation and reversible damage. Based on the properties of the isocyanate components and considering toxicological data on similar preparations: This preparation may cause acute irritation and/or sensitization of the respiratory system leading to an asthmatic condition, wheeziness and a tightness of the chest. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability.



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Commercial Product Name: ALEXIT BR12H0-BladeRep Hardener 12  
Quality No.: 4053D00000000

Revision Date 30.01.2023  
Print Date 30.01.2023  
Version 3

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Product:

#### Ecotoxicology Assessment

Acute aquatic toxicity : There are no data available on the preparation itself.

### 12.2 Persistence and degradability

#### Product:

Biodegradability : Remarks: There are no data available on the preparation itself.

### 12.3 Bioaccumulative potential

#### Product:

Bioaccumulation : Remarks: There are no data available on the preparation itself.

### 12.4 Mobility in soil

#### Product:

Mobility : Remarks: There are no data available on the preparation itself.

### 12.5 Results of PBT and vPvB assessment

#### Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Endocrine disrupting properties

#### Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Commercial Product Name: ALEXIT BR12H0-BladeRep Hardener 12  
Quality No.: 4053D00000000

Revision Date 30.01.2023  
Print Date 30.01.2023  
Version 3

## 12.7 Other adverse effects

### Product:

Additional ecological information : There are no data available on the preparation itself.

The product should not be allowed to enter drains or water courses.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : Dispose of in accordance with local regulations.

Contaminated packaging : Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse. Packaging that cannot be cleaned should be disposed off in agreement with the regional waste disposal company.

## SECTION 14: Transport information

### 14.1 UN number or ID number

ADR : UN 1263

IMDG : UN 1263

IATA : UN 1263

### 14.2 UN proper shipping name

ADR : PAINT RELATED MATERIAL

IMDG : PAINT RELATED MATERIAL

IATA : PAINT RELATED MATERIAL

### 14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADR	: 3	
IMDG	: 3	
IATA	: 3	

### 14.4 Packing group

ADR  
Packing group : III  
Classification Code : F1  
Hazard Identification Number : 30  
Labels : 3  
Tunnel restriction code : (D/E)  
Remarks : If transported within the user's premises: To be transported always in closed, upright and safe containers. Make sure that



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Commercial Product Name: ALEXIT BR12H0-BladeRep Hardener 12  
Quality No.: 4053D00000000

Revision Date 30.01.2023  
Print Date 30.01.2023  
Version 3

persons handling these containers are aware of the rules of conduct in case of incident or spillage.

## IMDG

Packing group : III  
Labels : 3  
EmS Code : F-E, S-E

## IATA (Cargo)

Packing instruction (cargo aircraft) : 366  
Packing group : III  
Labels : Flammable Liquids

## IATA (Passenger)

Packing instruction (passenger aircraft) : 355  
Packing instruction (LQ) : Y344  
Packing group : III  
Labels : Flammable Liquids

## 14.5 Environmental hazards

### ADR

Environmentally hazardous : no

### IMDG

Marine pollutant : no

## 14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

## 14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

## SECTION 15: Regulatory information

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

Relevant EU provisions transposed through retained EU law

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Conditions of restriction for the following entries should be considered:  
Number on list 3

822-06-0 (Number on list 74)

UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation : Not applicable

UK REACH List of substances subject to authorisation (Annex XIV) : Not applicable



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Commercial Product Name: ALEXIT BR12H0-BladeRep Hardener 12  
Quality No.: 4053D00000000

Revision Date 30.01.2023  
Print Date 30.01.2023  
Version 3

Volatile organic compounds :

Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)  
Volatile organic compounds (VOC) content: 25 %, 270 g/l

## Other regulations:

## 15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for the mixture.

## SECTION 16: Other information

### Full text of H-Statements

H226 : Flammable liquid and vapour.  
H302 : Harmful if swallowed.  
H315 : Causes skin irritation.  
H317 : May cause an allergic skin reaction.  
H319 : Causes serious eye irritation.  
EUH066 : Repeated exposure may cause skin dryness or cracking.

### Full text of other abbreviations

Acute Tox. : Acute toxicity  
Flam. Liq. : Flammable liquids  
Skin Sens. : Skin sensitisation  
STOT SE : Specific target organ toxicity - single exposure  
2019/1831/EU : Europe. Commission Directive 2019/1831/EU establishing a fifth list of indicative occupational exposure limit values  
GB EH40 : UK. EH40 WEL - Workplace Exposure Limits  
GB EH40 BAT : UK. Biological monitoring guidance values  
2019/1831/EU / TWA : Limit Value - eight hours  
2019/1831/EU / STEL : Short term exposure limit  
GB EH40 / TWA : Long-term exposure limit (8-hour TWA reference period)  
GB EH40 / STEL : Short-term exposure limit (15-minute reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization;

Mankiewicz Gebr. & Co. (GmbH & Co. KG) Georg-Wilhelm-Straße 189 21107 Hamburg (Wilhelmsburg) Tel.: +49 (0) 40 / 75 10 30 Fax: +49 (0) 40 / 75 10 33 75 www.mankiewicz.de	Bank Name Deutsche Bank HypoVereinsbank Postbank	Ort Hamburg Hamburg Hamburg	Kto.-Nr. 600227300 59273300 373205	BLZ 200 700 00 200 300 00 200 100 20	BIC DEUTDE33 HYVEDE33 PNBKDE33	IBAN DE58 2007 0000 0600 2273 00 DE34 2003 0000 0059 2733 00 DE85 2001 0020 0000 3732 05	Sitz/Registriergericht Hamburg; HRA 42442 Persönlich haftende Gesellschafterin: Grau Gebr. Beteiligungs-GmbH Sitz/Registriergericht Hamburg; HRB 17189 Geschäftsführender Gesellschafter: Michael O. Grau	Bureau Veritas Certification: ISO 9001, TS 16949, EN 9100	
---	---	--------------------------------------	---	---	---	---	--	---	--

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Commercial Product Name: ALEXIT BR12H0-BladeRep Hardener 12  
Quality No.: 4053D00000000

Revision Date 30.01.2023  
Print Date 30.01.2023  
Version 3

KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

## Further information

Other information : The information given in this material safety data sheet does not release the user from its duty of risk assessment and control in the work place defined in other health and safety law. Adhere to the national sanitary and occupational safety regulations when using this product.

This safety datasheet complies with the requirements of regulation (EC) No 1907/2006(2020/878).

## Classification of the mixture:

Flam. Liq. 3	H226
Acute Tox. 4	H332
Skin Sens. 1	H317
STOT SE 3	H336
STOT SE 3	H335

## Classification procedure:

Based on product data or assessment
Calculation method
Calculation method
Calculation method
Calculation method

## Department issuing safety data sheet

UMCO GmbH  
Georg-Wilhelm-Str.187, D-21107 Hamburg  
Telefon: +49(0)40/555 546 300 Fax: +49(0)40/555 546 357  
e-mail:umco@umco.de

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

GB / EN

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Commercial Product Name: ALEXIT BR12H0-BladeRep Hardener 12  
Quality No.: 4053D00000000

Revision Date 30.01.2023  
Print Date 30.01.2023  
Version 3

Mankiewicz Gebr. & Co. (GmbH & Co. KG)  
Georg-Wilhelm-Straße 189  
21107 Hamburg (Wilhelmsburg)  
Tel.: +49 (0) 40 / 75 10 30  
Fax: +49 (0) 40 / 75 10 33 75  
www.mankiewicz.de

Bank Name	Ort	Kto.-Nr.	BLZ	BIC	IBAN
Deutsche Bank	Hamburg	600227300	200 700 00	DEUTDE33HAN30	DE58 2007 0000 0600 2273 00
HypoVereinsbank	Hamburg	59273300	200 300 00	HYVEDE33HAN30	DE34 2003 0000 0059 2733 00
Postbank	Hamburg	373205	200 100 20	PBNKDE33HAN30	DE85 2001 0020 0000 3732 05

Sitz/Registergericht Hamburg: HRA 42442  
Persönlich haftende Gesellschafterin:  
Grau Gebr. Beteiligungs-GmbH  
Sitz/Registergericht Hamburg: HRB 17189  
Geschäftsführender Gesellschafter:  
Michael O. Grau

Bureau Veritas  
Certification:  
ISO 9001,  
TS 16949,  
EN 9100

