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

1.1. Product identifier

Vernetzer GermanBond RE

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

Use of the substance/mixture

Hardener, Adhesives, sealants, Reserved for industrial and professional use.

Uses advised against

Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheet

Company name:	germanBelt GmbH	
Street:	Carl-Vollrath-Str. 8	
Place:	D-07422 Bad Blankenburg	
Telephone:	+49 (0)36741 / 5680-0	Telefax: +49 (0)36741 / 5680-70
e-mail:	sales@germanbelt.de	

1.4. Emergency telephone number:

Giftnotruf England: +44 (171) 635 91 91, Giftnotruf England: +44 (171) 635 91 91, Giftnotruf Norwegen: +47 (22) 591 300,

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:
Flammable liquid: Flam. Liq. 2
Acute toxicity: Acute Tox. 4
Skin corrosion/irritation: Skin Irrit. 2
Serious eye damage/eye irritation: Eye Irrit. 2
Respiratory or skin sensitisation: Resp. Sens. 1
Respiratory or skin sensitisation: Skin Sens. 1
Specific target organ toxicity - single exposure: STOT SE 3
Specific target organ toxicity - single exposure: STOT SE 3
Hazard Statements:
Highly flammable liquid and vapour.
Harmful if inhaled.
Causes skin irritation.
Causes serious eye irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause drowsiness or dizziness.
May cause respiratory irritation.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling

Triphenylmethan-4,4`,4"-triisocyanat, ethyl acetate

Signal word: Danger

Pictograms:

Hazard statements

H225	Highly flammable liquid and vapour.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H336	May cause drowsiness or dizziness.

Precautionary statements

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P403+P235	Store in a well-ventilated place. Keep cool.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P312	Call a POISON CENTER/doctor if you feel unwell.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P284	Wear respiratory protection.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Special labelling of certain mixtures

EUH066	Repeated exposure may cause skin dryness or cracking.
EUH204	Contains isocyanates. May produce an allergic reaction.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Aromatic polyisocyanate

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]			
141-78-6	ethyl acetate			ca. 70 %
	205-500-4	607-022-00-5	01-2119475103-46	
	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336 EUH066			
2422-91-5	Triphenylmethan-4,4`,4"-triisocyanat			ca. 27 %
	219-351-8		01-2120039442-63	
	Acute Tox. 2, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, Resp. Sens. 1, Skin Sens. 1B, STOT SE 3; H330 H302 H315 H319 H334 H317 H335			
108-90-7	chlorobenzene			< 2,5 %
	203-628-5	602-033-00-1	01-2119432722-45	
	Flam. Liq. 3, Acute Tox. 4, Skin Irrit. 2, Aquatic Chronic 2; H226 H332 H315 H411			
101-68-8	4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate			< 0,1 %
	202-966-0	615-005-00-9		
	Carc. 2, Acute Tox. 4, STOT RE 2, Eye Irrit. 2, STOT SE 3, Skin Irrit. 2, Resp. Sens. 1, Skin Sens. 1; H351 H332 H373 ** H319 H335 H315 H334 H317			
103-71-9	Phenylisoyanat			< 0,05 %
	203-137-6			
	Flam. Liq. 3, Acute Tox. 1, Acute Tox. 4, Skin Corr. 1B, Eye Dam. 1, Resp. Sens. 1, Skin Sens. 1, STOT SE 3; H226 H330 H302 H314 H318 H334 H317 H335			

Full text of H and EUH statements: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Take off immediately all contaminated clothing.

After inhalation

In case of respiratory tract irritation, consult a physician. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

After contact with skin

In case of skin irritation, consult a physician. In case of skin contact, wash immediately with large quantities of water/polyethylene glycol 400 (Roticlean).

After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

After ingestion

If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

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

Respiratory or skin sensitisation

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

No information available.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO2). Foam. Extinguishing powder Water spray jet

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

In case of fire and/or explosion do not breathe fumes. In case of fire may be liberated: Carbon dioxide (CO2). Carbon monoxide Nitrogen oxides (NOx) Hydrogen cyanide (hydrocyanic acid)

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.

Additional information

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

Personal protection equipment: see section 8 Remove all sources of ignition. Provide adequate ventilation.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Do not empty into drains; dispose of this material and its container in a safe way.

6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

6.4. Reference to other sections

Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Never add water to this product.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Use explosion-proof machinery, apparatus, ventilation facilities, tools etc. Take precautionary measures against static discharges. Vapours may form explosive mixtures with air.

Further information on handling

Keep away from food, drink and animal feedingstuffs. Wash hands before breaks and after work. Personal protection equipment: see section 8

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed in a cool, well-ventilated place.

Advice on storage compatibility

Keep away from food, drink and animal feedingstuffs.

7.3. Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
108-90-7	Chlorobenzene	1	4.7		TWA (8 h)	WEL
		3	14		STEL (15 min)	WEL
-	Isocyanates, all (as -NCO) Except methyl isocyanate	-	0.02		TWA (8 h)	WEL
		-	0.07		STEL (15 min)	WEL

DNEL/DMEL values

CAS No	Substance		
DNEL type	Exposure route	Effect	Value
141-78-6	ethyl acetate		
Worker DNEL, acute	inhalation	local	1468 mg/m³
Worker DNEL, long-term	inhalation	local	734 mg/m³
Consumer DNEL, acute	inhalation	local	734 mg/m³
Worker DNEL, long-term	dermal		63 mg/kg bw/day
Consumer DNEL, long-term	dermal		37 mg/kg bw/day
Consumer DNEL, long-term	inhalation	local	367 mg/m³
Consumer DNEL, long-term	oral		4,5 mg/kg bw/day
2422-91-5	Triphenylmethan-4,4`,4"-triisocyanat		
Worker DNEL, acute	inhalation	local	0,096 mg/m³
Worker DNEL, long-term	inhalation	local	0,048 mg/m³

PNEC values

CAS No	Substance
Environmental compartment	Value
141-78-6	ethyl acetate
Freshwater	0,26 mg/l
Marine water	0,026 mg/l
Freshwater sediment	0,34 mg/kg
Marine sediment	0,034 mg/kg
Soil	0,22 mg/kg
2422-91-5	Triphenylmethan-4,4`,4"-triisocyanat
Freshwater	0,1 mg/l
Marine water	0,01 mg/l
Freshwater sediment	16700 mg/kg
Marine sediment	1670 mg/kg
Micro-organisms in sewage treatment plants (STP)	100 mg/l
Soil	3330 mg/kg

8.2. Exposure controls

Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Protective and hygiene measures

When using do not eat, drink, smoke, sniff.

Eye/face protection

Wear eye/face protection.

Hand protection

Wear protective gloves. , EN 374: Butyl caoutchouc (butyl rubber), Thickness of the glove material: >= 0,5 mm, Breakthrough time (maximum wearing time): >= 60 min;

Skin protection

Wear suitable protective clothing.

Respiratory protection

If technical exhaust or ventilation measures are not possible or insufficient , respiratory protection must be worn. Combination filtering device (EN 14387) A2-P2, Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be exposed to any process in which this product is used.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	liquid:
Colour:	cloudy, reddish, brownish, violet, greenish, bluish, yellowish
Odour:	fruity

		Test method
pH-Value:	not determined	
Changes in the physical state		
Melting point:	not determined	
Initial boiling point and boiling range:	ca. 77 °C	
Sublimation point:	not determined	
Softening point:	not applicable	
Pour point:	not determined	
Flash point:	ca. -4 °C	DIN 51755
Sustaining combustion:	No data available	
Explosive properties not determined		
Lower explosion limits:	2,2 vol. %	
Upper explosion limits:	11,5 vol. %	
Ignition temperature:	ca. 460 °C	
Auto-ignition temperature		
Gas:	not applicable	
Decomposition temperature:	not determined	
Oxidizing properties not determined		
Vapour pressure: (at 20 °C)	97 hPa	
Density (at 20 °C):	ca. 1,0 g/cm³	DIN 51757
Water solubility:	Immiscible	
Solubility in other solvents not determined		
Viscosity / dynamic: (at 20 °C)	ca. 3 mPa·s	DIN 53015
Vapour density:	not determined	

Evaporation rate: not determined

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

No data available

10.3. Possibility of hazardous reactions

Exothermic reaction with: Amines, Alcohols; After contact with water: Formation of: Carbon dioxide (CO_2).

10.4. Conditions to avoid

Heating may cause an explosion.

10.5. Incompatible materials

Reacts with : Alcohol, Amines, Oxidising agent, Water

10.6. Hazardous decomposition products

The product is stable under storage at normal ambient temperatures.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Harmful if inhaled.
ATEmix (inhal.): 1,62 mg/l, 4 h
Prüfatmosphäre: Staub/Nebel
ATEmix calculated:

CAS No	Chemical name					
	Exposure route	Dose		Species	Source	Method
141-78-6	ethyl acetate					
	oral	LD50 mg/kg	5600	Rat		
	dermal	LD50 mg/kg	18000	Rabbit		
	inhalative vapour	LC50	58 mg/l	Rat		
2422-91-5	Triphenylmethan-4,4`,4"-triisocyanat					
	oral	ATE mg/kg	500			
	inhalative vapour	ATE	0,5 mg/l			
	inhalative (4 h) aerosol	LC50 mg/l	0,437	Ratte	OECD 403	
108-90-7	chlorobenzene					
	oral	LD50 mg/kg	22550	Kaninchen		
	inhalative vapour	ATE	11 mg/l			
	inhalative aerosol	ATE	1,5 mg/l			
101-68-8	4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate					
	oral	LD50 mg/kg	9200	Rat	GESTIS	
	inhalative (4 h) vapour	LC50 mg/l	0,178	Ratte		
	inhalative aerosol	ATE	1,5 mg/l			
103-71-9	Phenylisoyanat					
	oral	ATE mg/kg	500			
	inhalative vapour	ATE	0,05 mg/l			
	inhalative aerosol	ATE mg/l	0,005			

Irritation and corrosivity

Causes serious eye irritation.
Causes skin irritation.

Sensitising effects

May cause allergy or asthma symptoms or breathing difficulties if inhaled.
(Triphenylmethan-4,4`,4"-triisocyanat; 4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate; Phenylisoyanat)
May cause an allergic skin reaction. (Triphenylmethan-4,4`,4"-triisocyanat; 4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate; Phenylisoyanat)

Carcinogenic/mutagenic/toxic effects for reproduction

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

STOT-single exposure

May cause respiratory irritation. (Triphenylmethan-4,4`,4"-triisocyanat)
May cause drowsiness or dizziness. (ethyl acetate)

STOT-repeated exposure

Repeated exposure may cause skin dryness or cracking.

Aspiration hazard

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

SECTION 12: Ecological information

12.1. Toxicity

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] | [d]	Species	Source	Method
141-78-6	ethyl acetate						
	Acute fish toxicity	LC50	230 mg/l	96 h	Pimephales promelas (fathead minnow)		
	Acute crustacea toxicity	EC50	717 mg/l	48 h	Daphnia magna (Big water flea)		
	Fish toxicity	NOEC mg/l	< 9,65	32 d	Promephales promelas		
108-90-7	chlorobenzene						
	Acute algae toxicity	ErC50 mg/l	12,5	96 h	Selenastrum capricornutum	IUCLID	
	Acute crustacea toxicity	EC50	20 mg/l	48 h	Daphnia magna		

12.2. Persistence and degradability

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
141-78-6	ethyl acetate			
	OECD 301 D	79 %	20	
2422-91-5	Triphenylmethan-4,4`,4"-triisocyanat			
	OECD 301 F	41,5 %	28	
	Not readily biodegradable (according to OECD criteria)			

12.3. Bioaccumulative potential

Ethyl acetate : Does not significantly accumulate in organisms.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
108-90-7	chlorobenzene	2,84

BCF

CAS No	Chemical name	BCF	Species	Source
141-78-6	ethyl acetate	30		

12.4. Mobility in soil

Ethyl acetate: No adsoption in soil or sediment.; Highly mobile in soils.; Triphenylmethan-4,4`,4"-triisocyanat: Koc-Wert:1670000, log Koc-Wert: 6,22

12.5. Results of PBT and vPvB assessment

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

12.6. Other adverse effects

Isocyanates: After contact with water: Formation of: polyurea (According to experiences this product is inert and not degradable.)

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

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 hazardous substances; hazardous waste

Contaminated packaging

Contaminated packages must be completely emptied and can be re-used following proper cleaning. Packing which cannot be properly cleaned must be disposed of. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number:	UN 1993
14.2. UN proper shipping name:	FLAMMABLE LIQUID, N.O.S. (ethyl acetate, Monochlorobenzene)
14.3. Transport hazard class(es):	3
14.4. Packing group:	II
Hazard label:	3

Classification code:	F1
Special Provisions:	274 601 640D
Limited quantity:	1 L
Excepted quantity:	E2
Transport category:	2
Hazard No:	33
Tunnel restriction code:	D/E

Inland waterways transport (ADN)

14.1. UN number:	UN 1993
14.2. UN proper shipping name:	FLAMMABLE LIQUID, N.O.S. (ethyl acetate, Monochlorobenzene)
14.3. Transport hazard class(es):	3
14.4. Packing group:	II
Hazard label:	3

Classification code:	F1
Special Provisions:	274 601 640D
Limited quantity:	1 L
Excepted quantity:	E2

Marine transport (IMDG)

14.1. UN number:	UN 1993
14.2. UN proper shipping name:	FLAMMABLE LIQUID, N.O.S. (Ethyl Acetate, Monochlorobenzene)
14.3. Transport hazard class(es):	3
14.4. Packing group:	II
Hazard label:	3

Special Provisions:	274
Limited quantity:	1 L
Excepted quantity:	E2
EmS:	F-E, S-E

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number:	UN 1993
14.2. UN proper shipping name:	FLAMMABLE LIQUID, N.O.S. (Ethyl Acetate, Monochlorobenzene)
14.3. Transport hazard class(es):	3
14.4. Packing group:	II
Hazard label:	3

Special Provisions:	A3
Limited quantity Passenger:	1 L
Passenger LQ:	Y341
Excepted quantity:	E2
IATA-packing instructions - Passenger:	353
IATA-max. quantity - Passenger:	5 L
IATA-packing instructions - Cargo:	364
IATA-max. quantity - Cargo:	60 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

Highly flammable; Thermal sensitivity >40°C; Store in a cool dry place. Keep away from food, drink and animal feedingstuffs.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

No data available

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 56: 4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate

2010/75/EU (VOC):	73 %
2004/42/EC (VOC):	73 %
Information according to 2012/18/EU (SEVESO III):	P5c FLAMMABLE LIQUIDS

National regulatory information

Water contaminating class (D): 1 - slightly water contaminating

Additional information

Merkblätter der BG Chemie M 044 "Polyurethan-Herstellung und Verarbeitung/Isocyanate" und M 017 "Lösemittel".

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 9.

Relevant H and EUH statements (number and full text)

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.
EUH204	Contains isocyanates. May produce an allergic reaction.

Further Information

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.

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