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

Product identifier

Trade name:
Rigidur joint adhesive

Relevant identified uses of the mixture and uses advised
Adhesive

Uses of the substance/mixture: construction product (perforated plasterboard)

Details of the supplier of the Safety Data Sheet

Manufacturer/Supplier:
Saint-Gobain Rigips GmbH
Schanzenstraße 84
D-40549 Düsseldorf
Germany

National contact:
Saint-Gobain Rigips GmbH - Ladenburg Development Center – Gypsum Development
Dr.-Albert-Reimann-Straße 20
D – 68526 Ladenburg
+49(0)621-4701691
Email forschung-entwicklung@rigips.de

Emergency telephone number:
Tel +49 (0)621 4701691 (only at daily working-times)

European Emergency Number: 112

2 Hazards identification

2.1 Classification of the substance or mixture

2.1.1 Classification according to regulation (EC) Nr. 1272/2008

Hazard class	Hazard categorie	Hazard statement
Eye Irrit.	2	H319-Causes serious eye irritation
STOT SE	3	H335-May cause respiratory irritation
Skin Irrit.	2	H315-Causes skin irritation
Resp. Sens.	1	H334- May cause allergy or asthma symptoms or breathing difficulties if inhaled
Skin Sens.	1	H317-May cause an allergic skin reaction
STOT RE	2	H373-May cause damage to organs through prolonged or repeated exposure
Carc.	2	H351-Suspected of causing cancer.

2.2 Label elements
2.2.1 Labeling according to Regulation (EC) 1272/2008 (CLP)

Danger

Hazard statements
H319-Causes serious eye irritation
H335-May cause respiratory irritation
H315-Causes skin irritation
H334- May cause allergy or asthma symptoms or breathing difficulties if inhaled
H317-May cause an allergic skin reaction
H373-May cause damage to organs through prolonged or repeated exposure
H351-Suspected of causing cancer.

Prevention
P201-Obtain special instruction before use
P260-Do not breathe vapours or spray
P280-Wear protective gloves/protective clothing and eye protection/face protection
P284-Wear respiratory protection

Response
P302+P352-IF ON SKIN: Wash with plenty water and soap
P304+P340-IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338-IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308+P313-IF EXPOSED OR CONCERNED: Get medical advice/attention

EUH204-Contains isocyanates. May produce an allergic reaction

Diphenylmethanediisocyanate, isomeres and homologues
4,4'-methylenediphenyl diisocyanate
o-(p-isocyanatobenzyl)phenylisocyanate
2,2'-methylenediphenyl diisocyanate

2.3 Other hazards
The mixture does not contain any vPvB substance (vPvB=very persistent, very bioaccumulative) or is not included under XIII of the regulation (EC) 1907/2006.
The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or is not included under XIII of the regulation (EC) 1907/2006.

3 Composition/information on ingredients

3.1 Substance:
n.a.

3.2 Mixture

Diphenylmethanediisocyanate, isomeres and homologues	
Registration number (REACH)	--
Index	--
EINECS, ELINCS, NLP	--
CAS	CAS 9016-87-9
content %	10-<25
Classification according to Regulation (EC) Nr. 1272/2008 (CLP)	Acute Tox. 4, H332 Eye Irrit. 2, H319 STOT SE 3, H335 Skin Irrit. 2, H315 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT RE 2, R373

4,4'-methylenediphenyl diisocyanate	
Registration number (REACH)	01-2119457014-47-XXXX
Index	615-005-00-9
EINECS, ELINCS, NLP	202-966-0
CAS	CAS 101-68-8
content %	1-10
Classification according to Regulation (EC) Nr. 1272/2008 (CLP)	Acute Tox. 4, H332 Eye Irrit. 2, H319 STOT SE 3, H335 Skin Irrit. 2, H315 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT RE 2, R373

o-(p-isocyanatobenzyl)phenylisocyanate	
Registration number (REACH)	01-2119480143-45-XXXX
Index	615-005-00-9
EINECS, ELINCS, NLP	227-534-9
CAS	CAS 5873-54-1
content %	1-10
Classification according to Regulation (EC) Nr. 1272/2008 (CLP)	Acute Tox. 4, H332 Eye Irrit. 2, H319 STOT SE 3, H335 Skin Irrit. 2, H315 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT RE 2, R373

Propylene carbonat	
Registration number (REACH)	01-2119537232-48-XXXX
Index	607-194-00-1
EINECS, ELINCS, NLP	203-572-1
CAS	CAS 108-32-7
content %	1-5
Classification according to Regulation (EC) Nr. 1272/2008 (CLP)	Eye Irrit. 2, H319

2,2'-methylenediphenyl diisocyanate	
Registration number (REACH)	01-2119927323-43-XXXX
Index	615-005-00-9
EINECS, ELINCS, NLP	219-799-4
CAS	CAS 2536-05-2
content %	0,1-<1
Classification according to Regulation (EC) Nr. 1272/2008 (CLP)	Acute Tox. 4, H332 Eye Irrit. 2, H319 STOT SE 3, H335 Skin Irrit. 2, H315 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT RE 2, R373

For the text of the H-phrases and classification codes (GHS/CLP), see Section 16.
The substances named in this section are given with their actual, appropriate classification!
For substances that are listed in appendix VI, table 3.1/3.2 of the regulation (EC) no 1272/2008 (CLP regulation) this means that all notes that may be given here for the named classification have been taken into account.

4 First aid measures

4.1 Description of first aid measures

Inhalation:
Remove person from danger area.
Supply person with fresh air and consult doctor according to symptoms
If the person is unconscious, place in a stable side position and consult a doctor.
Respiratory arrest – Artificial respiration apparatus necessary.

Skin contact:
Wipe off residual product carefully with a soft, dry cloth.
Remove polluted, soaked clothing immediately, wash thoroughly with plenty of water and soap, in case of irritation of the skin (flare), consult a doctor.
Dab away with polyethylene glycol 400.

Eye contact:
Remove contact lenses.
Wash thoroughly for several minutes using copious water – call doctor immediately, have Data Sheet available.

Ingestion:
Rinse the mouth thoroughly with water.
Do not induce vomiting – give copious water to drink. Consult doctor immediately.
Never pour anything into the mouth of an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed
If applicable delayed symptoms and effects can be found in section 11 and the absorption route in section 4.1.
The following may occur:
Dermatitis (skin inflammation)
Drying of the skin

Allergic contact eczema
Discoloration of the skin
Irritant to mucosa of the nose and throat
Coughing
Headaches
Effect on the central nervous system
Asthmatic symptoms
In case of sensitivity, concentrations below the limit value may already result in asthmatic symptoms.
Respiratory distress
In certain cases, the symptoms of poisoning may only appear after an extended period/after several hours.

4.3 Indication of any immediate medical attention and special treatment needed
In case of irritation to the lungs, perform first-aid with controlled-dosage aerosol dexamethasone.
Pulmonary oedema prophylaxis
Medical supervision necessary due to possibility of delayed reaction.

5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:
CO_2
Extinction powder
Water jet spray.
Foam

Unsuitable extinguishing media:
High volume water jet

5.2 Special hazards arising from the substance or mixture:
In case of fire the following can develop:
Oxides in carbon
Oxides in nitrogen
Isocyanates
Hydrocyanic acid (hydrogen cyanide)
Toxic gases
Danger of bursting (explosion) when heated

5.3 Advice for firefighters:
In case of fire and/or explosion do not breathe fumes.
Protective respirator with independent air supply
According to size of fire
Full protection, if necessary
Cool container at risk with water
Dispose of contaminated extinction water according to official regulations.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Ensure sufficient supply of air
Avoid inhalation and contact with eyes or skin
If applicable, caution – risk of slipping.

6.2 Environmental precautions:
If leakage occurs, dam up
Resolve leaks if this possible without risk
Prevent surface and ground-water infiltration, as well as ground penetration
Prevent from entering drainage system
If accidental entry into drainage system occurs, inform responsible authorities.

6.3 Methods and material for containment and cleaning up:
Soak up with absorbent material (e.g. universal binding agent, sand, diatemaceous earth, sawdust) and dispose of according to Section 13.
Allow to stand for a few days in an unclosed container until reaction no longer occurs.
Keep moist.
Do not close packing drum.
CO2 formation in closed tanks causes pressure to rise.

6.4 Reference to other sections
For personal protective equipment see Section 8 and for disposal instructions see Section 13.

7 Handling and storage

In addition to information given in this section, relevant information can also be found in section 8 and 6.1.

7.1 Precautions for safe handling

7.1.1 General recommendations
Ensure good ventilation
Avoid inhalation of the vapours.
If applicable, suction measures at the workstation or on the processing machine necessary.
Avoid contact with eyes or skin
No contact with products of this type in case of allergies, asthma and chronic respiratory tract disorders
Eating, drinking, smoking, as well as food-storage, is prohibited in work-room
Observe directions on label and instructions for use
Use working methods according to operating instructions.

7.1.2 Notes on general hygiene measures at the workplace:
General hygiene measures for the handling of chemicals are applicable
Wash hands before breaks and at end of work
Keep away from food, drink and animal feedingstuffs
Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

7.1.3 Conditions for safe storage, including any incompatibilities
Keep out of access to unauthorized individuals.
Not to be stored in gangways of stair wells.
Store product closed and only in original packing.
Keep protected from direct sunlight and temperatures over 50 °C.
Only store at temperatures from 15 °C to 25 °C.
Store in a dry place

7.3 Specific end use(s)
Adhesive

8 Exposure controls/personal protection

8.1 Control parameters

Chem. Name	Diphenylmethanediisocyanate, isomeres and homologues	Content % 10-<25
WEL-TWA: 0,02 mg/m³ (Isocyanates, all (as-NCO))	WEL-STEL: 0,07 mg/m³ (Isocyanates, all (as-NCO))	--
BMGV: 1µmol urinary diamine/mol creatinine in urine (Isocyanate, post task)	Other information: Sen (Isocyanats, all (as-NCO))	

Chem. Name	4,4'-methylenediphenyl diisocyanate	Content % 1-10
WEL-TWA: 0,02 mg/m³ (Isocyanates, all (as-NCO))	WEL-STEL: 0,07 mg/m³ (Isocyanates, all (as-NCO))	--
BMGV: 1µmol urinary diamine/mol creatinine in urine (Isocyanate, post task)	Other information: Sen (Isocyanats, all (as-NCO))	

Chem. Name	o-(p-isocyanatobenzyl)phenylisocyanate	Content % 1-10
WEL-TWA: 0,02 mg/m³ (Isocyanates, all (as-NCO))	WEL-STEL: 0,07 mg/m³ (Isocyanates, all (as-NCO))	--
BMGV: 1µmol urinary diamine/mol creatinine in urine (Isocyanate, post task)	Other information: Sen (Isocyanats, all (as-NCO))	

Chem. Name	2,2'-methylenediphenyl diisocyanate	Content % 0,1-<1
WEL-TWA: 0,02 mg/m³ (Isocyanates, all (as-NCO))	WEL-STEL: 0,07 mg/m³ (Isocyanates, all (as-NCO))	--
BMGV: 1µmol urinary diamine/mol creatinine in urine (Isocyanate, post task)	Other information: Sen (Isocyanats, all (as-NCO))	

Chem. Name	Silica, amorphous	Content %
WEL-TWA: 6 mg/m³ (total inh. dust), 2,4 mg/m³ (resp. dust)	WEL-STEL: --	--
BMGV: --	Other information: --	

Chem. Name	Calcium carbonate	Content %
WEL-TWA: 4 mg/m³ (respirable dust), 10 mg/m³ (total inhalable dust)	WEL-STEL: --	--
BMGV: --	Other information: --	

WEL-TWA = Workplace Exposure Limit – Long-term exposure limit (8-hour TWA (=time weighted average) reference period) EH40. AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany).I WEL-STEL = Workplace Exposure Limit – Short-term exposure limit (15-minute reference period) I BMGV = Workplace Exposure Limit – Short-term exposure limit (15-minute reference period). I BMGV = Biological monitoring guidance value EH40. BGW = "Biologischer Grenzwert" (biological limit value, Germany) I Other information: Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.
** = The exposure limit for this substance is repealed through the TRGS 900 (Germany) of January 2006 with the goal of revision.

4,4'-methylenediphenyl diisocyanate						
Area of application	Exposure route/ Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
Workers/ employees	Human-dermal	Short term, systemic effects	DNEL	50	mg/kg bw/d	
Workers/ employees	Human-inhalation	Short term, systemic effects	DNEL	0,1	mg/m³	
Workers/ employees	Human-dermal	Short term, local effects	DNEL	28,7	mg/cm²	
Workers/ employees	Human-inhalation	Short term, local effects	DNEL	0,1	mg/m³	
Workers/ employees	Human-inhalation	Long term, systemic effects	DNEL	0,05	mg/m³	
Workers/ employees	Human-inhalation	Long term, local effects	DNEL	0,05	mg/m³	
Consumer	Human-dermal	Short term, systemic effects	DNEL	25	mg/kg bw/d	
Consumer	Human-inhalation	Short term, systemic effects	DNEL	0,05	mg/m³	
Consumer	Human-oral	Short term, systemic effects	DNEL	20	mg/kg bw/d	
Consumer	Human-dermal	Short term, local effects	DNEL	17,2	mg/cm²	
Consumer	Human-inhalation	Short term, local effects	DNEL	0,05	mg/m³	
Consumer	Human-inhalation	Long term, systemic effects	DNEL	0,025	mg/m³	
Consumer	Human-inhalation	Long term, local effects	DNEL	0,025	mg/m³	
	Environment-freshwater		PNEC	1	mg/l	
	Environment-marine		PNEC	0,1	mg/l	
	Environment-soil		PNEC	1	mg/kg dw	
	Environment-sewage treatment plant		PNEC	1	mg/l	
	Environment – water, sporadic (intermittent) release		PNEC	10	mg/l	
o-(p-isocyanatobenzyl)phenylisocyanate						
Area of application	Exposure route/ Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
Workers/ employees	Human-dermal	Short term, systemic effects	DNEL	50	mg/kg bw/d	
Workers/ employees	Human-inhalation	Short term, systemic effects	DNEL	0,1	mg/m³	

Workers/ employees	Human-dermal	Short term, local effects	DNEL	28,7	mg/cm²	
Workers/ employees	Human-inhalation	Short term, local effects	DNEL	0,1	mg/m³	
Workers/ employees	Human-dermal	Long term, systemic effects	DNEL	0	mg/kg	
Workers/ employees	Human-inhalation	Long term, systemic effects	DNEL	0,05	mg/m³	
Workers/ employees	Human-dermal	Long term, local effects	DNEL	0	mg/kg	
Workers/ employees	Human-inhalation	Long term, local effects	DNEL	0,05	mg/m³	
	Environment-freshwater		PNEC	1	mg/l	
	Environment-marine		PNEC	0,1	mg/l	
	Environment-soil		PNEC	1	mg/kg	
	Environment-sewage treatment plant		PNEC	1	mg/l	

2,2'-methylenediphenyl diisocyanate						
Area of application	Exposure route/ Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
Workers/ employees	Human-dermal	Short term, systemic effects	DNEL	50	mg/kg bw/d	
Workers/ employees	Human-inhalation	Short term, systemic effects	DNEL	0,1	mg/m³	
Workers/ employees	Human-dermal	Short term, local effects	DNEL	28,7	mg/cm²	
Workers/ employees	Human-inhalation	Short term, local effects	DNEL	0,1	mg/m³	
Workers/ employees	Human-dermal	Long term, systemic effects	DNEL	0	mg/kg	
Industrial/ Commercial	Human-inhalation	Long term, systemic effects	DNEL	0,05	mg/m³	
Workers/ employees	Human-dermal	Long term, local effects	DNEL	0	mg/kg	
Workers/ employees	Human-inhalation	Long term, local effects	DNEL	0,05	mg/m³	
	Environment-freshwater		PNEC	1	mg/l	
	Environment-marine		PNEC	0,1	mg/l	
	Environment-soil		PNEC	1	mg/kg	
	Environment-sewage treatment plant		PNEC	1	mg/l	

Propylene carbonate						
Area of application	Exposure route/ Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment – sporadic (intermittent) release		PNEC	9	mg/l	
	Environment -marine		PNEC	0,09	mg/l	
	Environment-sediment, marine		PNEC	0,083	mg/l	
	Environment-soil		PNEC	0,81	mg/l	
Workers/ employees	Human-dermal	Long term, systemic effects	DNEL	50	mg/kg	
Workers/ employees	Human-inhalation	Long term, local effects	DNEL	20	mg/m³	
Consumer	Human-dermal	Long term, systemic effects	DNEL	25	mg/kg	
Consumer	Human-inhalation	Long term, local effects	DNEL	10	mg/m³	
	Environment-freshwater		PNEC	0,9	mg/l	
	Environment-sediment, freshwater		PNEC	0,83	mg/l	
	Environment-sewage treatment plant		PNEC	7400	mg/l	
Consumer	Human-oral	Long term, systemic effects	DNEL	25	mg/kg	
Workers/ employees	Human-inhalation	Long term, systemic effects	DNEL	176	mg/m³	
Consumer	Human-inhalation	Long term, systemic effects	DNEL	43,5	mg/m³	

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction.
If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn.
Applies only if maximum permissible exposure values are listed here.

8.2.2 Individual protection measures, such as personal protective equipment

General hygiene measures for the handling of chemicals are applicable.
Wash hands before breaks and at end of work.
Keep away from food, drink and animal feedingstuffs.
Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

Eye/face protection:
Tight fitting protective goggles with side protection (EN 166).

Skin protection – Hand protection:

Chemical resistant protective gloves (EN 374)
Recommended
Protective nitrile gloves (EN 374)
Minimum layer thickness in mm: <=0,35
Permeation time (penetration time) in minutes >= 480 minutes
The breakthrough times determined in accordance with EN 374 Part III were not obtained under practical conditions.
The recommended maximum wearing time is 50 % of breakthrough time.
Protective hand cream recommended.

Skin protection – Other
Protective working garments (e.g. safety shoes EN ISO 20345, long-sleeved protective working garments)

Respiratory protection:
Normally not necessary
If OES or MEL is exceeded
Filter A2 P2 (EN 14387), code colour brown, white
Observe wearing time limitations for respiratory protection equipment

Thermal hazards:
Not applicable

Additional information on hand protection – No tests have been performed
In the case of mixtures, the selection has been made according to the knowledge available and the information about the contents.
Selection of materials derived from glove manufacturer's indications.
Final selection of glove material must be made taking the breakthrough times, permeation rates and varies from manufacturer to manufacturer.
Selection of a suitable glove depends not only on the material but also on other quality characteristics and varies from manufacturer to manufacturer.
In the case of mixtures, the resistance of glove materials cannot be predicted and must therefore be tested before use.
The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.

8.2.3 Environmental exposure controls:
No information available at present

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state:	Liquid, Pastelike
Colour:	Ivory
Odour:	Characteristic
Odour trreshold:	Not determined
pH-value:	Not determined
Melting point/freezing point:	Not determined
Initial boiling point and boiling range:	Not determined
Flash point:	Not determined
Evaporation rate:	Not determined
Flammability (solid, gas):	n.a.
Lower explosive limit:	Not determined
Upper explosive limit:	Not determined
Vapour pressure:	Not determined
Vapour density (air = 1):	Not determined

Density:	1,51-1,55 g/cm³
Bulk density:	n.a.
Solubility(ies):	Not determined
Water solubility:	Not determined
Partition coefficient (n-octancol/water):	Not determined
Auto-ignition temperature:	Not determined
Decomposition temperature:	Not determined
Visosity:	28000-34000 mPas
Explosive properties:	Product is not explosive. When using: development of explosive vapour/air mixture possible
Oxidising properties:	No

9.2 Other information

Miscibility:	Not determined
Fat solubility:	Not determined
Conductivity:	Not determined
Surface tension:	Not determined
Solvents content:	Not determined

10 Stability and Reactivity

10.1 Reactivity:
reacts with water

10.2 Chemical stability
Stable with proper storage and handling

10.3 Possibility of hazardous reactions:
Exothermic reaction possible with:
Alcohols
Amines
Bases
Acids
Water
Development of:
Carbon dioxide
CO2 formation in closed tanks causes pressure to rise
Pressure increase will result in danger of bursting

10.4 Conditions to avoid:
See also section 7
Protect from humidity
Polymerisation due to high heat is possible

10.5 Incompatible materials:
See also section 7
Acids
Bases
Amines
Alcohols
Water

10.6 Hazardous decomposition products:
See also section 5.2
No decomposition when used as directed.

11 Toxicological information

Possibly more information on health effects, see Section 2.1 (classification)

Rigidur Joint adhesive						
Toxicity/ effect	Endpoint	Value	Unit	Orga-nism	Test method	Notes
Acute toxicity, by oral route						n.d.a
Acute toxicity, by dermal route						n.d.a
Acute toxicity, by inhalation	ATE	> 20	mg/l /4h			calculated value, Vapours
Skin corrosion/irritation						n.d.a
Serious eye damage/irritation						n.d.a
Respiratory or skin sensitisation						n.d.a
Germ cell mutagenicity						n.d.a
Carcinogenicity						n.d.a
Reproductive toxicity						n.d.a
Specific target organ toxicity-single exposure (STOT-SE)						n.d.a
Specific target organ toxicity-repeated exposure (STOT-RE)						n.d.a
Aspiration hazard						n.d.a
Respiratory tract irritation						n.d.a
Repeated dose toxicity						n.d.a
Symptoms						n.d.a
Other information						Classification according to calculation procedure

Diphenylmethanediisocyanate, isomeres und homologues						
Toxicity/ effect	Endpoint	Value	Unit	Orga-nism	Test method	Notes
Acute toxicity, by oral route	LD50	>2000	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	
Acute toxicity, by oral route	LD50	>5000	mg/kg	Rat		
Acute toxicity, by dermal route	LD50	>2000	mg/kg	Rabbit		
Skin corrosion/irritation				Rabbit	OECD 404 (Acute Dermal Irritation/ Corrosion)	Irritant
Serious eye damage/irritation						Irritant
Respiratory or skin sensitisation						Sensitizing (inhalation and skin contact)
Reproductive toxicity						Negative
Specific target organ toxicity-single exposure (STOT-SE)						Irritation of the respiratory tract
Aspiration hazard						No
Respiratory tract irritation						Irritant

Symptoms						Fever, coughing, headaches, nausea and vomiting, dizziness, breathing difficulties, laryngeal oedema of the lungs, chemical pneumonitis (condition similar to pneumonia), abdominal pain, diarrhoea

4,4'-methylenediphenyl diisocyanate						
Toxicity/ effect	Endpoint	Value	Unit	Orga-nism	Test method	Notes
Acute toxicity, by oral route	LD50	>2000	mg/kg	Rat		
Acute toxicity, by dermal route	LD50	>2000	mg/kg	Rabbit		
Acute toxicity, by inhalation	LC0	2,24	mg/l /1h	Rat	OECD 403 (Acute Inhalation Toxicity)	Aerosol
Skin corrosion/irritation						Irritant
Serious eye damage/irritation				Rabbit		Irritant
Respiratory or skin sensitisation						Sensitizing (inhalation and skin contact)
Carcinogenicity						Limited evidence of a carcinogenic effect
Respiratory tract irritation						Irritant
Symptoms						Respiratory distress, coughing, mucous membrane irritation

o-(p-isocyanatobenzyl)phenylisocyanate						
Toxicity/ effect	Endpoint	Value	Unit	Orga-nism	Test method	Notes
Acute toxicity, by oral route	LD50	>5000	mg/kg	Rat		
Acute toxicity, by dermal route	LD50	>2000	mg/kg	Rabbit		
Symptoms						asthmatic symptoms, mucous membrane irritation

Propylene carbonate						
Toxicity/ effect	Endpoint	Value	Unit	Orga-nism	Test method	Notes
Acute toxicity, by oral route	LD50	33520	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	
Acute toxicity, by dermal	LD50	>2000	mg/kg	Rabbit	OECD 402	

route					(Acute Dermal Toxicity)	
Skin corrosion/irritation				Rabbit	OECD 404 (Acute Dermal Irritation/ Corrosion)	Not irritant
Serious eye damage/irritation				Rabbit	OECD 405 (Acute Eye Irritation/ Corrosion)	Irritant
Respiratory or skin sensitisation				Human being		Not sensitizising
Germ-cell mutagenicity					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Germ-cell mutagenicity					OECD 474 (Mammalian Erythrocyte Micronucleus Test)	Negative
Germ-cell mutagenicity					OECD 482 (Gen. Tox.- DNA Damage and Repair, Unscheduled DNA Synthesis in Mammalian (Cells in Vitro)	Negative
Carcinogenicity				Mouse	OECD 451 (Carcenogenicit y Studies)	Negative
Reproductive toxicity	NOAEL	1000	mg/kg	Rat	OECD 414 (Prenatal Developmental Toxicity Study)	Negative
Reproducive toxicity	NOAEL	5000	mg/kg	Rat	OECD 414 (Prenatal Developmental Toxicity Study)	No indications of such an effect
Specific target organ toxicity-single exposure (STOT-SE)						No
Specific target organ toxicity-repeated exposure (STOT-RE)						No
Aspiration hazard						No
Repeated dose toxicity	NOEL	>5000	mg/kg		OECD 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)	
Repeated dose toxicity	NOEC	100	mg/m³		OECD 413 (Subchronic Inhalation Toxicity- 90-Day Study)	Dust, Mist

Symptoms						breathing difficulties, headaches, gastrointestinal disturbances, dizziness, nausea

2,2'-methylenediphenyl diisocyanate						
Toxicity/ effect	Endpoint	Value	Unit	Orga-nism	Test method	Notes
Acute toxicity, by oral route	LD50	>2000	mg/kg	Rat	Regulation (EC) 440/2008 B.1 (Acute Oral Toxicity)	Analogous conclusion
Acute toxicity, by dermal route	LD50	>9400	mg/kg	Rabbit	OECD 402 (Acute Dermal Toxicity)	
Acute toxicity, by inhalation	LD50	>2,24	mg/l /1h	Rat	OECD 403 (Acute Inhalation Toxicity)	Mist
Skin corrosion/irritation						Irritant
Serious eye damage/irritation				Rabbit		Irritant
Respiratory or skin sensitisation				Guinea pig		Yes (inhalation), Analogous conclusion
Respiratory or skin sensitisation				Mouse	OECD 429 (Skin Sensitisation-Local Lymph Node Assay)	Yes (skin contact)
Germ cell mutagenicity				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative, Analogous conclusion
Carcinogenicity				Rat	OECD 453 (Combined Chronic Toxicity/ Carcino genicity Studies)	Limited evidence of a carcinogenic effect. Analogous conclusion
Reproductive toxicity	NOAEL	4	mg/m³	Rat	OECD 414 (Prenatal Developmental Toxicity Study)	No indications of such an effect
Specific target organ toxicity-single exposure (STOT-SE)						May cause respiratory irritation
Aspiration hazard						Not to be exprected
Respiratory tract irritation						Irritant
Symptoms						respiratory distress, coughing, mucous membrane irritation

Silica, amorphous						
Toxicity/ effect	Endpoint	Value	Unit	Orga-nism	Test method	Notes
Acute toxicity, by oral route	LD50	>5000	mg/kg	Rat		
Acute toxicity, by dermal route	LD50	>2000	mg/kg	Rat	OECD 402 (Acute Dermal Toxicity)	
Acute toxicity, by inhalation	LD50	>0,691	mg/l /4h	Rat		
Skin corrosion/irritation					OECD 404 (Acute Dermal Irritation/ Corrosion)	Not irritant
Serious eye damage/irritation						Not irritant
Germ cell mutagenicity					OECD 471 (Bacterial Reverse Mutation Test)	Negative

Calcium carbonate						
Toxicity/ effect	Endpoint	Value	Unit	Orga-nism	Test method	Notes
Acute toxicity, by oral route	LD50	>5000	mg/kg	Rat		
Acute toxicity, by inhalation						Mechanical irritation possible
Serious eye damage/irritation						Mechanical irritation possible
Other information						References

12 Ecological information

Possibly more information on environmental effects, see Section 2.1 (classification)

Rigidur joint adhesive							
Toxicity/effect	Endpoint	Time	Value	Unit	Orga-nism	Test method	Notes
Toxicity, fish							n.d.a.
Toxicity to daphnia							n.d.a.
Toxicity to algae							n.d.a.
Persistance and degradability							n.d.a
Bioaccumulative potential							n.d.a.
Mobility in soil							n.d.a.
Results of PBT- and vPvB-assessment							n.d.a.
Other adverse effects							n.d.a.

Diphenylmethanediisocyanate, isomeres und homologues							
Toxicity/effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
Toxicity, fish	LC0	96h	>1000	mg/l	Brachydanioreri o	OECD 203 (Fish, Acute Toxicity Test)	
Toxicity to	EC50	24h	>1000	mg/l	Daphnia magna	OECD 202	

daphnia						(Daphnia sp. Acute Immobilisation Test)	
Persistance and degradability		28d	0	%		OECD 302 C (Inherent Biodegradability – Modified MITI Test (II))	Not biodegradable
Results of PBT- and vPvB-assessment							No PBT-substance
Toxicity to bacteria	EC50	3h	>100	mg/l	activated sludge	OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation)	
Water solubility							Insoluble 15 °C

4,4'-methylenediphenyl diisocyanate							
Toxicity/effect	Endpoint	Time	Value	Unit	Orga-nism	Test method	Notes
Toxicity, fish	LC50	96h	>1000	mg/l	Brachydanioreri o	OECD 203 (Fish, Acute Toxicity Test)	
Toxicity to daphnia	EC50	24h	>1000	mg/l	Daphnia magna		Analogous conclusion
Toxicity to algae	EC50	72h	1,5	mg/l		OECD 201 (Alga, Growth Inhibition Test)	
Toxicity to algae	NOEC/ NOEL	72h	1640	mg/l	Desmodesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	Analogous conclusion
Persistance and degradability		28d	0	%		OECD 302 C (Inherent Biodegradability – Modified MITI Test (II))	With water at the interface, transforms slowly with formation of CO2 into a firm, insoluble reaction product with a high melting point (polycarbamide). According to experience available to date, polycarbamide is inert and non-degradable
Bioaccumulative potential	Log Pow		5,22				A notable biological accumulation potential has to be expected (LogPow >3)

Results of PBT- and vPvB-assessment							No PBT-substance No vPvB-substance
Toxicity to bacteria	EC50	3h	>100	mg/l	activated sludge		
Toxicity to annelids	EC50	14d	>1000	mg/l	Eisenia foetida		

o-(p-isocyanatobenzyl)phenylisocyanate							
Toxicity/effect	Endpoint	Time	Value	Unit	Orga-nism	Test method	Notes
Toxicity to daphnia	EC50	24h	>1000	mg/l	Daphnia magna		
Persistance and degradability			0	%			With water at the interface, transforms slowly with formation of CO2 into a firm, insoluble reaction product with a high melting point (polycarbamide)
Toxicity to bacteria	EC50	3h	>100	mg/l	activated sludge		

Propylene carbonate							
Toxicity/effect	Endpoint	Time	Value	Unit	Orga-nism	Test method	Notes
Toxicity, fish	LC50	96h	>1000	mg/l	Cyprinus caprio	92/69/EC	
Toxicity to daphnia	EC50	48h	>1000	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
Toxicity to algae	EC50	72h	>900	mg/l	Desmodesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	
Persistance and degradability		28d	94	%		OECD 301 E (Ready Biodedegradability – Modified OECD Screening Test)	Readily biodegradable
Bioaccumulative potential	Log Pow		-0,48				Bioaccumulation is unlikely (LogPow<1), calculated value
Results of PBT- and vPvB-assessment							No PBT-substance No vPvB-substance
Toxicity to bacteria	EC50	16h	25619	mg/l	Pseudonomas putida	DIN 38412 T.8	
Other information	AOX		0	%			Does not contain any organically bound halogens which contribute

							to the AOX value in waste water
Water solubility			180-240	mg/l			20 °C

2,2'-methylenediphenyl diisocyanate							
Toxicity/effect	Endpoint	Time	Value	Unit	Orga-nism	Test method	Notes
Toxicity, fish	LC50	96h	>1000	mg/l	Brachydanioreri o	OECD 203 (Fish, Acute Toxicity Test)	
Toxicity to daphnia	EC50	24h	>1000	mg/l	Daphnia magna		Analogous conclusion
Toxicity to algae	EC50	72h	1,5	mg/l		OECD 201 (Alga, Growth Inhibition Test)	
Toxicity to algae	NOEC/ NOEL	72h	1640	mg/l	Desmodesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	Analogous conclusion
Persistance and degradability		28d	0	%		OECD 302 C (Inherent Biodegradability – Modified MITI Test (II))	With water at the interface, transforms slowly with formation of CO2 into a firm, insoluble reaction product with a high melting point (polycarbamide). According to experience available to date, polycarbamide is inert and non-degradable
Bioaccumulative potential	Log Pow		5,22				Bioaccumulation is unlikely (LogPow<3), calculated value
Results of PBT- and vPvB-assessment							No PBT-substance No vPvB-substance
Toxicity to bacteria	EC50	3h	>100	mg/l	activated sludge		
Toxicity to annelids	EC50	14d	>1000	mg/l	Eisenia foetida		

Silica, amorphous							
Toxicity/effect	Endpoint	Time	Value	Unit	Orga-nism	Test method	Notes
Toxicity, fish	EC0	96h	>1000	mg/l	Brachydanioreri o	OECD 203 (Fish, Acute Toxicity Test)	
Toxicity to daphnia	EC0	24h	>1000	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
Toxicity to algae	EL50	72h	>=1000	mg/l		OECD 201 (Alga, Growth Inhibition Test)	

Calcium carbonate							
Toxicity/effect	Endpoint	Time	Value	Unit	Orga-nism	Test method	Notes
Toxicity, fish	LC50	96h	>1000	mg/l	Oncorrhynchus mykiss		
Toxicity to daphnia	EC50	24h	>1000	mg/l	Daphnia magna		
Toxicity to algae	EC50	72h	>200	mg/l	Desmodesmus subspicatus		
Water solubility			0,014	g/l			

13 Disposal considerations

13.1 Waste treatment methods
For the substance/mixture/residual amounts
EC disposal code no:
The waste codes are recommendations based on the scheduled use of this product.
Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances (2001/118/EC, 2001/119/EC, 2001/573/EC)
08 04 09 waste adhesives and sealants containing organic solvents or other dangerous substances
08 05 01 waste isocyanates
Recommendation:
Pay attention to local and national official regulations
E.g. suitable incineration plant
Hardened product:
E.g. dispose at suitable refuse site

For contaminated packing material
Pay attention to local and national official regulations
Empty container completely
Uncontaminated packaging can be recycled
Dispose of packaging that cannot be cleaned in the same manner as the substance
15 01 10 packaging containing residues of or contaminated by dangerours substances

14 Transport Information

General statements
UN number: n.a.
Transport by road/by rail (ADR/RID)
UN proper shipping name
Transport hazard class(es): n.a.
Packing group: n.a.
Classification group: n.a.
LQ (ADR 2013): n.a.
LQ (ADR 2009): n.a.
Environmental hazards: Not applicable
Tunnel restriction code:
Transport by sea (IMDG-code)
UN proper shipping name:
Transport hazard class(es): n.a.
Packing group: n.a.
Marine pollutant: n.a.
Environmental hazards: Not applicable
Transport by air (IATA)

UN proper shipping name:
Transport hazard class(es): n.a.
Packing group: n.a.
Environmental hazards: Not applicable
Special precautions for user
Unless specified otherwise, general measures for safe transport must be followed.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Non-dangerous material according to Transport Regulations

15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
For classification and labelling see Section 2.
Observe restrictions:
Comply with trade association/occupational health regulations.
Observe youth employment law (German regulation).
Observe law on protection of expectant mothers (German regulation).
Regulation (EC) No. 1907/2008, Annex XVII
Diphenylethanediisocyanate, isomeres and homologues
4,4'-methylenediphenyl diisocyanate
o-(p-isocyanatobenzyl)phenylisocyanate
2,2'-methylenediphenyl diisocyanate
Directive 2010/75/EU (VOC): 25,2 %
Directive 2010/75/EU (VOC): ~ 385,6 g/l

15.2 Chemical Safety Assessment:
A chemical safety assessment is not provided for mixtures

16 Other information

These details refer to the product as it is delivered

Classification and processes used to derive the classification of the mixture in accordance with the ordinance (EG) 1272/2008 (CLP)

Classification in accordance with regulation (EG) No. 1272/2008 (CLP)	Evaluation method used
Eye Irrit. 2, H319	Classification according to calculation procedure
STOT SE 3, H335	Classification according to calculation procedure
Skin Irrit. 2, H315	Classification according to calculation procedure
Resp. Sens. 1, H334	Classification according to calculation procedure
Skin Sens. 1, H317	Classification according to calculation procedure
STOT RE 2, H373	Classification according to calculation procedure
Carc. 2, H351	Classification according to calculation procedure

The following phrases represent the posted H phrases, Hazard Class and Risk Category Code (GHS/CLP) of the product and the constituents (specified in Section 2 and 3)

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
H373-May cause damage to organs through prolonged or repeated exposure
H351-Suspected of causing cancer.

Eye Irrit – Eye irritation
STOT SE – Specific target organ toxicity – single exposure – respiratory tract irritation
Skin Irrit – Skin irritation
Resp. Sense – Respiratory sensitization
Skin Sense – Skin sensitization
STOT RE – Specific target organ toxicity – repeated exposure
Carc. – Carcinogenicity
Acute Tox. – Acute toxicity - inhalation

Indication of changes MSDS according to regulation (EC) 1207/2008 [CLP].

Department issuing MSDS:
Saint-Gobain Rigips GmbH, Department: Ladenburg Development Center – Gypsum Development (LDC-GD); 68526 Ladenburg

Point of contact:
See point 1

Information and instructions provided in this SDS are based on the current state of scientific and technical knowledge at the date of issue indicated. It should not be construed as any guarantee of technical performance, suitability for particular applications, and does not establish a legally valid contractual relationship.