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

1.1 Product identifier

55E Siema Vernetzer 5002 E

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

Relevant identified uses

Adhesives, sealants

1.3 Details of the supplier of the safety data sheet

Supplier

Siema Vertriebsgesellschaft mbH
Ostmerheimer Strasse 516
51109 Köln
Deutschland

Telephone: +492216307990
Telefax: +4922163079950
E-mail: info@siema-vertrieb.de
Website: www.siema-vertrieb.de

Department responsible for information

E-mail (competent person) labor@renia.com

1.4 Emergency telephone number

Emergency telephone number Grimme: +49-221-630799-17
Only available during office hours.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

* Flam. Liq. 2; flammable liquids; H225 Highly flammable liquid and vapour.
* Eye Irrit. 2; Serious eye damage/eye irritation; H319 Causes serious eye irritation.
* Resp. Sens. 1; Sensitisation to the respiratory tract; H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
* STOT SE 3 Narcotic effects; STOT-single exposure; H336 May cause drowsiness or dizziness.
* Skin Sens. 1; Skin sensitisation; H317 May cause an allergic skin reaction.

2.2 Label elements

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

Hazard pictograms

* 

Signal word

Danger

Hazard statements

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

* **Precautionary statements**

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261	Avoid breathing vapours.
P280	Wear protective gloves and eye/face protection.
P284	In case of inadequate ventilation wear respiratory protection.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTER.

P370 + P378 In case of fire: Use extinguishing powder or sand to extinguish.
P403 + P235 Store in a well-ventilated place. Keep cool.

Hazard components for labelling

aromatic polyisocyanate
* ethyl acetate
* m-tolylidene diisocyanate; toluene-diisocyanate
m-tolylidene diisocyanate, oligomerisation product

Supplemental hazard information

EUH066 Repeated exposure may cause skin dryness or cracking.

2.3 Other hazards

No information available.

SECTION 3: Composition / information on ingredients

3.2 Mixtures

Description

Aromatic polyisocyanate in ethyl acetate.

Hazardous ingredients

	CAS No. EC No. Index No.	Substance name REACH No. Classification according to Regulation (EC) No 1272/2008 [CLP]	weight-%
*	141-78-6 205-500-4 607-022-00-5	**ethyl acetate** 01-2119475103-46 Flam. Liq. 2 H225 / Eye Irrit. 2 H319 / STOT SE 3 H336 / EUH066	50,0 < 70,0
	9017-01-0 - -	**m-tolylidene diisocyanate, oligomerisation product** 01-2119950331-47-0000 Skin Sens. 1B H317	20,0 < 25,0
	26006-20-2 - -	**aromatic polyisocyanate** Skin Sens. 1 H317 / Eye Irrit. 2 H319	8,00 < 10,0
*	26471-62-5 247-722-4 615-006-00-4	**m-tolylidene diisocyanate; toluene-diisocyanate** 01-2119454791-34 Skin Irrit. 2 H315 / Skin Sens. 1 H317 / Eye Irrit. 2 H319 / Acute Tox. 2 H330 / Resp. Sens. 1 H334 / STOT SE 3 H335 / Carc. 2 H351 / Aquatic Chronic 3 H412 Specific concentration limit (SCL): Resp. Sens. 1 H334: >= 0,10	0,150 < 0,200

Remark

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

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

Remove affected person from the danger area and lay down.

Following inhalation

Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. Medical treatment necessary.In case of inhalation of decomposition products, affected person should be moved into fresh air and kept still.Remove casualty to fresh air and keep warm and at rest.

Following skin contact

After contact with skin, wash immediately with plenty of water and soap. Take off contaminated clothing and wash it before reuse. Rub greasy ointment into the skin. In case of skin reactions, consult a physician.

After eye contact

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

* **Following ingestion**

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Do NOT induce vomiting. In case of allergic symptoms, especially in the breathing area, seek medical advice immediately.

Self-protection of the first aider

First aider: Pay attention to self-protection!

4.2 Most important symptoms and effects, both acute and delayed

Symptoms

Allergic reactions.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Transport affected person in lying position, in case of shortness of breath in half-sitting position. Where appropriate artificial ventilation.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO2), alcohol resistant foam, Extinguishing powder, ABC-powder, spray mist, (water), Dry sand.

Unsuitable extinguishing media

Full water jet. Strong water jet.

5.2 Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases. In case of fire may be liberated: carbon monoxide, Hydrogen cyanide (hydrocyanic acid), Isocyanate.

5.3 Advice for firefighters

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

5.4 Additional information

Suppress gases/vapours/mists with water spray jet. Use water spray jet to protect personnel and to cool endangered containers. Remove product from area of fire. 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

Avoid contact with eyes and skin. Use personal protection equipment. Remove all sources of ignition. Provide adequate ventilation. The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration. Do not breathe gas/fumes/vapour/spray.

6.2 Environmental precautions

Do not allow to enter into surface water or drains. Cover drains.

6.3 Methods and material for containment and cleaning up

* Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Collect in closed and suitable containers for disposal.

6.4 Reference to other sections

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advices on safe handling

This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). If handled uncovered, arrangements with local exhaust ventilation should be used if possible. If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means.

Advices on general occupational hygiene

When using do not eat, drink, smoke, sniff. Draw up and observe skin protection programme. Wash hands and face before

breaks and after work and take a shower if necessary. Before starting work, apply solvent-resistant skincare preparations.

Further information

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Vapours/aerosols must be exhausted directly at the point of origin. Take precautionary measures against static discharges.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep only in the original container in a cool, well-ventilated place. Keep container tightly closed. Store in a well-ventilated and dry room at temperatures between 10 °C and 30 °C. Ensure adequate ventilation of the storage area.

Hints on joint storage

Do not store together with: Oxidizing agent, Pyrophoric or self-heating substances. Store packaging and ignitable materials separately. Keep away from food, drink and animal feedingstuffs.

Further information on storage conditions

Floors should be impervious, resistant to liquids and easy to clean. Store small packages in a suitable, robust cabinet.

7.3 Specific end use(s)

Hardener

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values

	CAS No.	Substance name	Source	Long-term /short-term (Spitzenbegrenzung)
*	141-78-6	ethyl acetate	WEL	734 / 1.468 (-) mg/m³

Additional information

Long-term: Long-term occupational exposure limit value
short-term: short-term occupational exposure limit value

Biological limit values

No data available

DNEL worker

	CAS No.	Substance name	DNEL type	DNEL value
*	141-78-6	ethyl acetate	DNEL long-term inhalative (systemic)	1,468 mg/L
*	141-78-6	ethyl acetate	DNEL acute inhalative (local)	1,468 mg/L
*	141-78-6	ethyl acetate	DNEL long-term dermal (systemic)	63 mg/kg
	9017-01-0	m-tolylidene diisocyanate, oligomerisation product	DNEL long-term inhalative (local)	0,345 mg/m³
*	26471-62-5	m-tolylidene diisocyanate; toluene-diisocyanate	DNEL long-term inhalative (systemic)	0,035 mg/m³
*	26471-62-5	m-tolylidene diisocyanate; toluene-diisocyanate	DNEL acute inhalative (systemic)	0,14 mg/m³
*	26471-62-5	m-tolylidene diisocyanate; toluene-diisocyanate	DNEL acute inhalative (local)	0,14 mg/m³
*	26471-62-5	m-tolylidene diisocyanate; toluene-diisocyanate	DNEL long-term inhalative (local)	0,035 mg/m³

DNEL Consumer

	CAS No.	Substance name	DNEL type	DNEL value
*	141-78-6	ethyl acetate	DNEL acute inhalative (systemic)	0,734 mg/L
*	141-78-6	ethyl acetate	DNEL long-term inhalative (local)	0,734 mg/L

*	141-78-6	ethyl acetate	DNEL long-term dermal (systemic)	37 mg/kg
*	141-78-6	ethyl acetate	DNEL long-term inhalative (systemic)	0,037 mg/L
*	141-78-6	ethyl acetate	DNEL long-term oral (repeated)	4,5 mg/kg
*	141-78-6	ethyl acetate	DNEL acute inhalative (local)	0,367 mg/L

PNEC

	CAS No.	Substance name	PNEC type	PNEC Value
*	141-78-6	ethyl acetate	PNEC aquatic, freshwater	0,26 mg/L
*	141-78-6	ethyl acetate	PNEC aquatic, marine water	0,026 mg/L
*	141-78-6	ethyl acetate	PNEC sediment, freshwater	0,34 mg/kg
*	141-78-6	ethyl acetate	PNEC sediment, marine water	0,034 mg/kg
*	141-78-6	ethyl acetate	PNEC soil, freshwater	0,22 mg/kg
*	9017-01-0	m-tolylidene diisocyanate, oligomerisation product	PNEC aquatic, freshwater	0,1 mg/L
	9017-01-0	m-tolylidene diisocyanate, oligomerisation product	PNEC sediment, freshwater	3.302 mg/kg dw
*	9017-01-0	m-tolylidene diisocyanate, oligomerisation product	PNEC aquatic, marine water	0,01 mg/L
	9017-01-0	m-tolylidene diisocyanate, oligomerisation product	PNEC sediment, marine water	330 mg/kg dw
*	9017-01-0	m-tolylidene diisocyanate, oligomerisation product	PNEC sewage treatment plant (STP)	0,1 mg/L
	9017-01-0	m-tolylidene diisocyanate, oligomerisation product	PNEC soil, freshwater	658 mg/kg dw
*	26471-62-5	m-tolylidene diisocyanate; toluene-diisocyanate	PNEC aquatic, freshwater	0,013 mg/L
*	26471-62-5	m-tolylidene diisocyanate; toluene-diisocyanate	PNEC aquatic, marine water	0,001 mg/L
*	26471-62-5	m-tolylidene diisocyanate; toluene-diisocyanate	PNEC sewage treatment plant (STP)	1 mg/L
*	26471-62-5	m-tolylidene diisocyanate; toluene-diisocyanate	PNEC soil, freshwater	1 mg/kg dw

8.2 Exposure controls

If handled uncovered, arrangements with local exhaust ventilation should be used if possible.

Personal protection equipment

Respiratory protection

* Respiratory protection necessary at: insufficient ventilation. Usually no personal respirative protection necessary. If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.Combination filtering device. Use the following filter types for cleaning waste gases:

Hand protection

Suitable material: NBR (Nitrile rubber)
Thickness of the glove material: >= 0,4 mm
* Breakthrough time:: >= 480 min
For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Eye/face protection

Wear closely fitting protective glasses in case of splashes.

Body protection

When handling with chemical substances, protective clothing with CE-labels including the four control digits must be worn. Wear anti-static footwear and clothing

Environmental exposure controls

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

	Appearance	
	Physical state	liquid
	Colour	transparent
	Safety characteristics	
	Odour	characteristic
	Odour threshold	not determined
*	pH at 20 °C:	not determined
	Melting point/freezing point	not determined
	Initial boiling point and boiling range	77 °C
	Flash point	-4 °C
	Evaporation rate at 20°C	not determined
*	Burning time	not relevant
	Lower explosion limit at 20°C	2,1
	Upper explosion limit at 20°C	11,5
	Vapour pressure at 20°C	97 mbar
	Density at 20°C	1,022 kg/l
*	Water solubility at 20°C	not determined
	Partition coefficient: n-octanol/water	see section 12
	Ignition temperature in °C	460 °C
	Decomposition temperature	not determined
	Viscosity	0,44 mPas
	Explosive properties	not relevant
	Oxidising properties	not relevant

9.2 Other information

not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity

No hazardous reaction when handled and stored according to provisions.

10.2 Chemical stability

The study does not need to be conducted because the substance is known to be stable at room temperature for prolonged periods of time (days).

10.3 Possibility of hazardous reactions

Gases / vapours, highly flammable. Vapours can form explosive mixtures with air.

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5 Incompatible materials

Acid, concentrated, Oxidising agent, strong. Violent reaction with: Acids, Amines.

10.6 Hazardous decomposition products

Thermal decomposition can lead to the escape of irritating gases and vapours. Hydrogen cyanide (hydrocyanic acid).

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

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

aromatic polyisocyanate
LD50: oral (Rat): > 5.000 mg/kg

LD50: dermal (Rat): > 1 mg/kg

* LC50: inhalative (Rat): > 3.003 mg/L (4 h)

* **ethyl acetate**
LD50: oral (Rat): > 5.620 mg/kg

LD50: dermal (Rabbit): > 18.000 mg/kg

* LC50: inhalative (Rat): = 56 mg/L (4 h)

m-tolylidene diisocyanate, oligomerisation product
LD50: oral (Rat): > 2.000 mg/kg; (OECD 423)

* LC50: inhalative (Rat): > 1.839 mg/L (4 h); (OECD 403)

* **m-tolylidene diisocyanate; toluene-diisocyanate**
LD50: oral (Rat): > 2.000 mg/kg; (OECD 401)

* LC50: inhalative (Rat): = 0,48 mg/L (4 h); (OECD 403)

* LD50: dermal (Rabbit): > 9.400 mg/kg KG; (OECD 402)

Skin corrosion/irritation

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

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

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

STOT-single exposure

May cause drowsiness or dizziness.

STOT-repeated exposure

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

Aspiration hazard

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

Practical experience/human evidence

* Inhaling of solvent components above the MWC-value can lead to health damage, e.g. irritation of the mucous membrane and respiratory organs, as well as damage to the liver, kidneys and the central nerve system. Indications for this are: Headache, Dizziness, fatigue, amyosthenia, Dizziness, in serious cases: unconsciousness. Solvents may cause some of the aforementioned effects through skin resorption. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and/or absorption through skin. Splashing may cause eye irritation and reversible damage.

SECTION 12: Ecological information

12.1 Toxicity

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

Acute (short-term) fish toxicity

* **ethyl acetate**
LC50: (Oncorhynchus mykiss (Rainbow trout)): = 230 mg/L (96 h)

m-tolylidene diisocyanate, oligomerisation product
* LC50: (Danio rerio (zebrafish)): > 100 mg/L (96 h)
Method: OECD 203

m-tolylidene diisocyanate; toluene-diisocyanate
* LC50: (Oncorhynchus mykiss (Rainbow trout)): = 133 mg/L (96 h)
Method: OECD 203

Acute (short-term) toxicity to algae and cyanobacteria

* **ethyl acetate**
LC50: (Desmodesmus subspicatus): = 5.600 mg/L (48 h)

m-tolylidene diisocyanate, oligomerisation product
* ErC50: (Desmodesmus subspicatus): > 100 mg/L (72 h)
Method: OECD 201

m-tolylidene diisocyanate; toluene-diisocyanate
* ErC50: (Skeletonema costatum): = 3.230 mg/L (96 h)
Method: OECD 201

Acute (short-term) toxicity to crustacea

* **ethyl acetate**
EC50 (Daphnia magna (Big water flea)): = 165 mg/L (48 h)

m-tolylidene diisocyanate, oligomerisation product
* EC50 (Daphnia magna (Big water flea)): > 100 mg/L (48 h)
Method: OECD 202

m-tolylidene diisocyanate; toluene-diisocyanate
* EC50 (Daphnia magna (Big water flea)): = 12,5 mg/L (48 h)
Method: OECD 202

12.2 Persistence and degradability

m-tolylidene diisocyanate, oligomerisation product
* Biodegradation; (Activated sludge); Biochemical oxygen demand = 4 % (28 d)
Method: OECD 301F/ ISO 9408/ EEC 92/69/V, C.4-D
Not readily biodegradable (according to OECD criteria)

12.3 Bioaccumulative potential

* Partition coefficient: n-octanol/water = 0,68

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

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

12.6 Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product/Packaging disposal

Do not empty into drains; dispose of this material and its container in a safe way.Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Waste codes/waste designations according to EWC/AVV

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Other disposal recommendations

Non-contaminated packages may be recycled. Vessels not properly emptied are special waste.

SECTION 14: Transport information

14.1 UN number

UN 1866

14.2 UN proper shipping name

Land transport (ADR/RID)

HARZLÖSUNG

Sea transport (IMDG)

Resin solution

Air transport (ICAO-TI / IATA-DGR)

Resin solution

14.3 Transport hazard class(es)

Land transport (ADR/RID)	3
Sea transport (IMDG)	3
Air transport (ICAO-TI / IATA-DGR)	3

14.4 Packing group

Land transport (ADR/RID)	II
Sea transport (IMDG)	II
Air transport (ICAO-TI / IATA-DGR)	II

14.5 Environmental hazards

Land transport (ADR/RID)	not applicable
Sea transport (IMDG)	not applicable

14.6 Special precautions for user

Transport always in closed, upright and safe containers. Make sure that persons transporting the product know what to do in case of an accident or leakage. Advices on safe handling: see parts 6 - 8

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

No transport as bulk according to IBC Code.

14.8 Additional information

Land transport (ADR/RID)

tunnel restriction code: D/E

* Special provisions SV 640D

Sea transport (IMDG)

* EmS-Code: F-E, S-E

Air transport (ICAO-TI / IATA-DGR)

* not applicable

SECTION 15: Regulatory information

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

EU legislation

Restrictions of occupation

Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers. Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).

* **Directive 2010/75/EU on industrial emissions [Industrial Emissions Directive]**

* VOC-value 662,256 g/l

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances [Seveso-III-Directive]
Hazard categories / Named dangerous substances

* P5c FLAMMABLE LIQUIDS
Quantity 1: 5.000t; Quantity 2: 50.000t

National regulations

15.2 Chemical Safety Assessment

For the following substances of this mixture a chemical safety assessment has been carried out:

	REACH No.	Substance name
*	01-2119475103-46	ethyl acetate
	01-2119950331-47-0000	m-tolylidene diisocyanate, oligomerisation product
*	01-2119454791-34	m-tolylidene diisocyanate; toluene-diisocyanate

SECTION 16: Other information

Relevant R-, H- and EUH-phrases (Number and full text)

H225	Highly flammable liquid and vapour.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal 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 (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).
H412	Harmful to aquatic life with long lasting effects.

Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Flam. Liq. 2	On basis of test data.
Eye Irrit. 2	Calculation method.
Resp. Sens. 1	Calculation method.
STOT SE 3 Narcotic effects	Calculation method.
Skin Sens. 1	Calculation method.

Abbreviations and acronyms

For abbreviations and acronyms, see table at http://abbrev.esdscom.eu

Indication of changes

* Data changed compared with the previous version