SAFETY DATA SHEET

according to 1907/2006/EC, Article 31

Version number 28

Preparation Date: 04.05.2017 Revision Date: 04.05.2017

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

- **1.1 Product identifier**
- **Trade name:**
  FLX 1C-PU Construction adhesive
- Article number:
  114900
- Product Group
  1-component polyurethan adhesive
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
  -
- **Product category**
  PC1 Adhesives, sealants
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
  STAUF Klebstoffwerk GmbH
  Oberhausener Strasse 1
  57234 Wilnsdorf, Germany
  +49-(0)2739-301-0
  +49-(0)2739-301-200
- **1.4 Emergency telephone number:**
  CARECHEM24- EU, +44 1235 239670

Section 2: Hazard(s) identification

- **2.1 Classification of the substance or mixture**
- Classification according to Regulation (EC) No 1272/2008

GHS08

Resp. Sens. 1 - H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Carc. 2 - H351 Suspected of causing cancer.
STOT RE 2 - H373 May cause damage to organs through prolonged or repeated exposure.

GHS07

Acute Tox. 4 - H332 Harmful if inhaled.
Skin Irrit. 2 - H315 Causes skin irritation.
Eye Irrit. 2 - H319 Causes serious eye irritation.
Skin Sens. 1 - H317 May cause an allergic skin reaction.
STOT SE 3 - H335 May cause respiratory irritation.

- **2.2 Label elements**
- Labelling according to Regulation (EC) No 1272/2008

GHS08 GHS07

- Signal word
  Danger

Section 2: Hazard(s) identification

- Hazard-determining components of labelling:
  diphenylmethanediisocyanate,isomeres and homologues / 4,4'-methylenediphenyl diisocyanate / o-(p-isocyanatobenzyl)phenyl isocyanate / 2,2'-methylenediphenyl diisocyanate
- Hazard statements
  H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
  H351 Suspected of causing cancer.
  H373 May cause damage to organs through prolonged or repeated exposure.
  H332 Harmful if inhaled.
  H335 May cause respiratory irritation.
  H315 Causes skin irritation.
  H319 Causes serious eye irritation.
  H317 May cause an allergic skin reaction.
  EUH204 Contains isocyanates. May produce an allergic reaction.
- Precautionary statements
  P101 If medical advice is needed, have product container or label at hand.
  P102 Keep out of reach of children.
  P103 Read label before use.
  P260 Do not breathe dust/fume/gas/mist/vapours/spray.
  P284 [In case of inadequate ventilation] wear respiratory protection.
  P280 Wear protective gloves/protective clothing/eye protection/face protection.
  P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  P302+P352 IF ON SKIN: Wash with plenty of water.
  P405 Store locked up.
  P501 Dispose of contents/container in accordance with local/regional/ national/international regulations.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- PBT:
  Not applicable.
- vPvB:
  Not applicable.

Section 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:**
  Mixture of substances listed below with nonhazardous additions.

- **Dangerous components:**

CAS Number		*%*
9016-87-9	***diphenylmethanediisocyanate,isomeres and homologues*** ***Carc. 2*** ***Resp. Sens. 1 - H334, Carc. 2 - H351,*** ***STOT RE 2 - H373; Acute Tox. 4 - H332,*** ***Skin Irrit. 2 - H315, Eye Irrit. 2 - H319,*** ***Skin Sens. 1 - H317, STOT SE 3 - H335***	***25,00- 50,00***
25322-69-4	***Polypropyleneglycol*** ***Acute Tox. 4 - H302***	***12,50- 25,00***
101-68-8	***4,4'-methylenediphenyl diisocyanate*** ***EC number: 202-966-0*** ***Carc. 2*** ***Resp. Sens. 1 - H334, Carc. 2 - H351,*** ***STOT RE 2 - H373; Acute Tox. 4 - H332,*** ***Skin Irrit. 2 - H315, Eye Irrit. 2 - H319,*** ***Skin Sens. 1 - H317, STOT SE 3 - H335***	***5,00- 12,50***
5873-54-1	***o-(p-isocyanatobenzyl)phenyl isocyanate*** ***EC number: 227-534-9*** ***Carc. 2***	***5,00- 12,50***

Section 3: Composition/information on ingredients

	Resp. Sens. 1 - H334, Carc. 2 - H351, STOT RE 2 - H373; Acute Tox. 4 - H332, Skin Irrit. 2 - H315, Eye Irrit. 2 - H319, Skin Sens. 1 - H317, STOT SE 3 - H335	
2536-05-2	***2,2'-methylenediphenyl diisocyanate***	***2,50- 5***
	EC number: 219-799-4	
	Carc. 2	
	Resp. Sens. 1 - H334, Carc. 2 - H351, STOT RE 2 - H373; Acute Tox. 4 - H332, Skin Irrit. 2 - H315, Eye Irrit. 2 - H319, Skin Sens. 1 - H317, STOT SE 3 - H335	
96-48-0	***gamma-butyrolactone***	***1,26- 2,50***
	EC number: 202-509-5	
	Acute Tox. 4 - H302, Eye Irrit. 2 - H319	
77-58-7	***dibutyltin dilaurate***	***0,10- 0,25***
	EC number: 201-039-8	
	Skin Corr. 1B - H314; Acute Tox. 3 - H301	

Section 4: First-aid measures

- **4.1 Description of first aid measures**
- **General information:**
  Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**
  Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
  In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
  Immediately wash with water and soap and rinse thoroughly.
  If skin irritation continues, consult a doctor.
- **After eye contact:**
  Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
  Do not induce vomiting; call for medical help immediately.
  Rinse out mouth with water.
- **Information for doctor:**
- **4.2 Most important symptoms and effects, both acute and delayed**
  Headache
  Coughing
  Asthma attacks
  Allergic reactions
- **4.3 Indication of any immediate medical attention and special treatment needed**
  In cases of irritation to the lungs, initial treatment with Dexamethason metered aerosol.
  Later observation for pneumonia and pulmonary oedema.

Section 5: Fire-fighting measures

- **Suitable extinguishing agents:**
  CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture**
  Burning releases carbon monoxide, carbon dioxide, oxides of nitrogen, isocyanate vapors and traces of hydrogen cyanide. In the event of fire and/or explosion do not breathe fumes.
- **5.3 Advice for firefighters**
  No special measures required.
- **Protective equipment:**
  Wear self-contained respiratory protective device.
  Do not inhale explosion gases or combustion gases.

Section 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
  Ensure adequate ventilation
  Wear protective clothing.
- **6.2 Environmental precautions:**
  Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
- **6.4 Reference to other sections**
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

Section 7: Handling and storage

- **Handling:**
- **7.1 Precautions for safe handling**
  Ensure good ventilation/exhaustion at the workplace.
  Use only in well ventilated areas.
  Avoid contact with eyes, skin and clothes.
- **Information about fire - and explosion protection:**
  No special measures required.

- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
  No special requirements.
- **Information about storage in one common storage facility:**
  Not required.
- **Further information about storage conditions:**
  Keep container tightly sealed.
  Protect from heat and direct sunlight.
  Store in dry conditions.
- **7.3 Specific end use(s)**
  No further relevant information available.

Section 8: Exposure controls/personal protection

- **workplace:**

Ingredients w ith limit values that require monitoring at the
9016-87-9 diphenylmethanediisocyanate,isomeres and homologues
WEL

Short-term value	***0,07***	***mg/m3***
Long-term value	***0,02***	***mg/m3***
Sen; as -NCO		

101-68-8 4,4'-methylenediphenyl diisocyanate
WEL

Short-term value	***0.07***	***mg/m3***
Long-term value	***0.02***	***mg/m3***
Sen; as -NCO		

5873-54-1 o-(p-isocyanatobenzyl)phenyl isocyanate
WEL

Short-term value	***0.07***	***mg/m3***
Long-term value	***0.02***	***mg/m3***
Sen; as -NCO		

2536-05-2 2,2'-methylenediphenyl diisocyanate
WEL

Short-term value	***0.07***	***mg/m3***
Long-term value	***0.02***	***mg/m3***
Sen; as -NCO		

Section 8: Exposure controls/personal protection

- DNELs

101-68-8 ***4,4'-methylenediphenyl diisocyanate***
Inhalative, DNEL (dynamic): 0,05 mg/m3 (Workers)

5873-54-1 ***o-(p-isocyanatobenzyl)phenyl isocyanate***
Inhalative, DNEL (dynamic): 0,05 mg/m3 (Workers)

- PNECs

101-68-8 ***4,4'-methylenediphenyl diisocyanate***
PNEC: >0,1 mg/l
PNEC: >1 mg/l

5873-54-1 ***o-(p-isocyanatobenzyl)phenyl isocyanate***
PNEC: >0,1 mg/l
PNEC: >1 mg/l

- **Additional information:**
The lists valid during the making were used as basis.

- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
The usual precautionary measures are to be adhered to when handling chemicals.
Avoid contact with the eyes and skin.
Wash hands before breaks and at the end of work, use skin care products.
Keep away from foodstuffs, beverages and feed.
Do not inhale gases / fumes / aerosols.
- **Respiratory protection: Not necessary if room is well-ventilated. Use suitable respiratory protective device in case of insufficient ventilation.**
- **Protection of hands: Protective gloves**
- Material of gloves
Butyl rubber, BR
Nitrile rubber, NBR
Natural rubber, NR
- Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection: Tightly sealed and solvent resistant goggles**
- **Body protection: Protective work clothing**

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties	
General Information	
Appearance:	
Form:	Fluid
Colour:	Yellowish
Odour:	Characteristic
Odour threshold:	Characteristic
pH-value:	Not determined.
Change in condition	
Boiling point/Boiling range:	Undetermined.

Section 9: Physical and chemical properties

Flash point:	111 °C
Flammability (solid, gaseous):	Not applicable.
Ignition temperature:	400 °C
Decomposition temperature:	Not determined.
Self-igniting:	Not determined.
Danger of explosion:	Not determined.
Explosion limits:	
Lower:	0,40 Vol %
Upper:	Not determined.
Vapour pressure:	Not determined.
Density:	1,1400 g/cm3
Solubility in / Miscibility with water:	Not determined.
Viscosity:	
Dynamic:	at 20 °C 4.500 mPa.s
Solvent content:	
Organic solvents:	2,50 %
VOC (EC)	2,5000 %
9.2 Other information	No further relevant information available.

Section 10: Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
  No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
  Exothermic reaction with amines and alcohols; reacts with water forming CO2; in closed containers, risk of bursting owing to increase of pressure.
- **10.4 Conditions to avoid**
  No further relevant information available.
- **10.5 Incompatible materials:**
  No further relevant information available.
- **10.6 Hazardous decomposition products:**

Section 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values relevant for classification:**

25322-69-4 Polypropyleneglycol
Oral, LD50: <2000 mg/kg (rat)
Dermal, LD50: >10000 mg/kg (Rabbit)

101-68-8 4,4'-methylenediphenyl diisocyanate
Oral, LD50: >2000 mg/kg (rat)
Oral, LD50: 2200 mg/kg (mouse)
Dermal, LD50: >9400 mg/kg (Rabbit)
Inhalative, LC50/4h: 0,368 mg/l (rat)

5873-54-1 o-(p-isocyanatobenzyl)phenyl isocyanate
Oral, LD50: >2000 mg/kg (rat)
Dermal, LD50: >9400 mg/kg (Rabbit)
Inhalative, LC50/4h: 0,31 mg/l (rat)

96-48-0 gamma-butyrolactone
Oral, LD50: 1540 mg/kg (rat)
Dermal, LD50: 5000 mg/kg (guinea Pig)

77-58-7 dibutyltin dilaurate
Oral, LD50: 175 mg/kg (rat)

Section 11: Toxicological information

- **Primary irritant effect:**
- on the skin:
  Irritant to skin and mucous membranes.
- on the eye:
  Irritating effect.
- **Sensitization:**
  Sensitisation possible through inhalation.
  Sensitisation possible through skin contact.
- **Additional toxicological information:**
  The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
  Harmful
  Irritant
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
  Carc. 2

Section 12: Ecological information

- **12.1 Toxicity**
- Aquatic toxicity:

101-68-8 ***4,4'-methylenediphenyl diisocyanate***
daphnie, NOEL/ 72h: >10 mg/l

- **12.2 Persistence and degradability**
  No further relevant information available.
- **Behaviour in environmental systems:**
- **12.3 Bioaccumulative potential**
  No further relevant information available.
- 12.4 Mobility in soil
  No further relevant information available.
- **Additional ecological information:**
- **General notes:**
  Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:**
  Not applicable.
- **vPvB:**
  Not applicable.
- **12.6 Other adverse effects**
  No further relevant information available.

Section 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
  Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **European waste catalogue**

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08
WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF
COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS
AND PRINTING INKS
08 05
wastes not otherwise specified in 08
08 05 01
waste isocyanates
```

Section 14: Transport information

- **14.1 UN-Number**

ADR	Void
IMDG	Void
IATA	Void

- **14.2 UN proper shipping name**

ADR	Void
IMDG	Void
IATA	Void

- **14.3 Transport hazard class(es)**

ADR	
Class	Void
IMDG	
Class	Void
IATA	
Class	Void

- **14.4 Packing group**

ADR	Void
IMDG	Void
IATA	Void

- **14.5 Environmental hazards:**
  Not applicable.
- **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**
  Not applicable.

Section 15: Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  .
- **REGULATION (EC) No 1907/2006 ANNEX XVII**
  Conditions of restriction: 3, 20, 56a, 56b, 56c

- **National regulations:**

- **Technical instructions (air):**
- Class Share in %

I	74,00
2.5	20,00

- **Waterhazard class:**
  Water hazard class 1 (Self-assessment): slightly hazardous for water.
- **15.2 Chemical safety assessment:**
  A Chemical Safety Assessment has not been carried out.

Section 16: Other information, including date of preparation or last version

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing MSDS:**
  Technical Department
- **Contact:**
  Dr. Frank Gahlmann +49-(0)2739-301165 gahlmann@stauf.de
- **Abbreviations and acronyms:**
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

Section 16: Other information, including date of preparation or last version

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
ICAO: International Civil Aviation Organisation
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative

- *** Data compared to the previous version altered.**