



Safety Data Sheet according to (EC) No 1907/2006

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Pattex PL 400 Express

SDS No. : 422903
V003.3

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

1.1. Product identifier

Pattex PL 400 Express

Contains:

Diphenylmethane diisocyanate, isomers and homologues

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

Intended use:

Wood adhesive, reaction

1.3. Details of the supplier of the safety data sheet

Henkel AG & Co. KGaA

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40589 Düsseldorf

Germany

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1.4. Emergency telephone number

The Henkel information service also provides an around-the-clock telephone service on phone no.+49-(0)211-797-3350 for exceptional cases.

Further information is available at Poison Control Centers.

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification (CLP):**

Skin irritation	Category 2
H315 Causes skin irritation.	
Serious eye irritation	Category 2
H319 Causes serious eye irritation.	
Respiratory sensitizer	Category 1
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.	
Skin sensitizer	Category 1
H317 May cause an allergic skin reaction.	
Carcinogenicity	Category 2
H351 Suspected of causing cancer.	
Specific target organ toxicity - single exposure	Category 3
H335 May cause respiratory irritation. Target organ: respiratory tract irritation	
Specific target organ toxicity - repeated exposure	Category 2
H373 May cause damage to organs through prolonged or repeated exposure.	

2.2. Label elements**Label elements (CLP):****Hazard pictogram:****Signal word:**

Danger

Hazard statement:

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

Precautionary statement:

P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.

**Precautionary statement:
Prevention**

P260 Do not breathe vapours.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/eye protection.

**Precautionary statement:
Disposal**

P501 Dispose of contents/container in accordance with national regulation.

2.3. Other hazards

Persons suffering from allergic reactions to isocyanates should avoid contact with the product.

Pregnant women should absolutely avoid inhalation and skin contact.

Information according to XVII. 56 REACH

Persons already sensitised to diisocyanates may develop allergic reactions when using this product. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product. This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (i.e. type A1 according to standard EN 14387) is used.

SECTION 3: Composition/information on ingredients**3.2. Mixtures****General chemical description:**

1-Component PU adhesive

Base substances of preparation:

Polyurethane prepolymer with free 4,4'-methylenediphenyl diisocyanate (MDI)

Declaration of the ingredients according to CLP (EC) No 1272/2008:

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	202-966-0	< 25 %	Carc. 2 H351 Acute Tox. 4; Inhalation H332 STOT RE 2 H373 Eye Irrit. 2 H319 STOT SE 3 H335 Skin Irrit. 2 H315 Resp. Sens. 1 H334 Skin Sens. 1 H317
2,2'-dimorpholinyldiethyl ether 6425-39-4	229-194-7 01-2119969278-20	>= 1- < 3 %	Eye Irrit. 2 H319

For full text of the H - statements and other abbreviations see section 16 "Other information".
Substances without classification may have community workplace exposure limits available.

SECTION 4: First aid measures**4.1. Description of first aid measures**

General information:

In case of adverse health effects seek medical advice.

Inhalation:

Move to fresh air, consult doctor if complaint persists.

Delayed effects possible after inhalation.

Skin contact:

Wipe off affected skin area immediately with a soft cloth and then remove residues with vegetable oil; apply skin care product.

Eye contact:

Immediately flush eyes with soft jet of water or eye rinse solution for at least 5 minutes. If pains remains (intensive smarting, sensitivity to light, visual disturbance) continue flushing and contact/seek doctor or hospital.

Ingestion:

Rinse mouth and throat. Drink 1-2 glasses of water. Seek medical advice.

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

Causes serious eye irritation.

SKIN: Redness, inflammation.

May cause an allergic skin reaction.

RESPIRATORY: Irritation, coughing, shortness of breath, chest tightness.

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

See section: Description of first aid measures

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

carbon dioxide, foam, powder, water spray jet, fine water spray

Extinguishing media which must not be used for safety reasons:

High pressure waterjet

5.2. Special hazards arising from the substance or mixture

In the event of a fire, carbon monoxide (CO), carbon dioxide (CO₂) and nitrogen oxides (NO_x) can be released.

In the event of fire, isocyanate vapors may be formed.

5.3. Advice for firefighters

Wear protective equipment.

Wear self-contained breathing apparatus.

Additional information:

Cool endangered containers with water spray jet.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.

Avoid contact with skin and eyes.

Wear protective equipment.

Danger of slipping on spilled product.

6.2. Environmental precautions

Do not empty into drains / surface water / ground water.

6.3. Methods and material for containment and cleaning up

Remove mechanically.

Dispose of contaminated material as waste according to Section 13.

6.4. Reference to other sections

See advice in section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Ventilate working rooms thoroughly. Avoid naked flames, sparking and sources of ignition. Switch off electrical devices. Do not smoke, do not weld. Do not empty waste into waste water drains.

Also to be noted when processing larger amounts (> 1 kg): during processing and drying after adhesion, ventilate well. Avoid all sources of fire such as stoves and ovens. Switch off all electrical devices such as parabolic heaters, hot plates, storage heaters etc. in good time for them to have cooled down before commencing work. Avoid all sparks, including those occurring at electrical switches and devices.

Hygiene measures:

- Do not eat, drink or smoke while working.
- Wash hands before work breaks and after finishing work.
- Remove any dirt that gets onto the skin with vegetable oil; skin care.

7.2. Conditions for safe storage, including any incompatibilities

- Store in sealed original container.
- Storage at 0 to 25°C is recommended.
- Do not store together with food or other consumables (coffee, tea, tobacco, etc.).
- Do not store together with oxidants.

7.3. Specific end use(s)

Wood adhesive, reaction

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational Exposure Limits**Valid for
Germany

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
4,4'-Methylenediphenyl diisocyanate 101-68-8			Short Term Exposure Classification:	Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing effect in respiratory passages.	TRGS 900
4,4'-Methylenediphenyl diisocyanate 101-68-8		0,05	Exposure limit(s):	=2= If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900
4,4'-Methylenediphenyl diisocyanate 101-68-8			STEL (Short Term Exposure Limit) factor:	1 Substance listed with both Peak factor and STEL factor. The Peak factor is supplied with the AGW values.	TRGS 900
4,4'-Methylenediphenyl diisocyanate 101-68-8			Skin designation:	Can be absorbed through the skin.	TRGS 900

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	aqua (freshwater)					0,1 mg/L	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	aqua (marine water)					0,01 mg/L	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	aqua (intermittent releases)					1 mg/L	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	sediment (freshwater)				8,2 mg/kg		
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	sediment (marine water)				0,82 mg/kg		
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	STP					100 mg/L	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	soil				1,58 mg/kg		
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	oral				10 mg/kg		

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	Workers	Inhalation	Long term exposure - systemic effects		7,28 mg/m ³	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	Workers	Dermal	Long term exposure - systemic effects		1 mg/kg bw/day	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	general population	Inhalation	Long term exposure - systemic effects		1,8 mg/m ³	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	general population	Dermal	Long term exposure - systemic effects		0,5 mg/kg bw/day	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	general population	oral	Long term exposure - systemic effects		0,5 mg/kg bw/day	

Biological Exposure Indices:

Ingredient [Regulated substance]	Parameters	Biological specimen	Sampling time	Conc.	Basis of biol. exposure index	Remark	Additional Information
4,4'-Methylenediphenyl diisocyanate 101-68-8	4,4-Diaminodiphenylmethane	Creatinine in urine	Sampling time: End of shift.	10 µg/g	DE BAT	BAT values reflect the total physical load of workplace substances absorbed through inhalation, dermally, etc. With occupational exposure to MDI, parameter 4,4'-Diaminodiphenylmethane (MDA) in the urine covers all components of a complex MDI mixture, since both monomers and oligomers of the MDI are degraded independent of the exposure path of the monomeric MDI. In contrast, the MAK value for MDI takes into account only the monomer MDI portion.	

8.2. Exposure controls:

Respiratory protection:
Suitable breathing mask when there is inadequate ventilation.
Combination filter: ABEKP
This recommendation should be matched to local conditions.

Hand protection:
Use attached gloves. Perforation time < 5 minutes.

Eye protection:
Goggles which can be tightly sealed.

Skin protection:
Suitable protective clothing

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	paste pasty cream
Odor	typical
Odour threshold	No data available / Not applicable
pH	No data available / Not applicable
Initial boiling point	> 100 °C (> 212 °F)
Flash point	Not applicable
Decomposition temperature	No data available / Not applicable
Vapour pressure (50 °C (122 °F))	< 50 kPa
Density (23 °C (73.4 °F))	1,64 - 1,72 g/cm ³
Bulk density	No data available / Not applicable
Viscosity (; 23 °C (73.4 °F); speed of rotation: 10 min ⁻¹ ; Spindle No: 7)	145.000 - 200.000 mPa.s
Viscosity (kinematic)	No data available / Not applicable
Explosive properties	No data available / Not applicable
Solubility (qualitative) (23 °C (73.4 °F); Solvent: Water)	Reacts with water: generation of heat.
Solidification temperature	No data available / Not applicable
Melting point	No data available / Not applicable
Flammability	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Explosive limits	No data available / Not applicable
Partition coefficient: n-octanol/water	No data available / Not applicable
Evaporation rate	No data available / Not applicable
Vapor density	No data available / Not applicable
Oxidising properties	No data available / Not applicable

9.2. Other information

No data available / Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

Reaction with water, alcohols, amines.
Reaction with water, formation of CO₂
Pressure build-up in closed containers.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

Humidity

10.5. Incompatible materials

See section reactivity

10.6. Hazardous decomposition products

At higher temperatures isocyanate may be released.

Carbon dioxide is generated under contact with moisture, leading to pressure in the cans. Danger of cans bursting!

SECTION 11: Toxicological information**11.1. Information on toxicological effects****General toxicological information:**

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Cross-reactions with other isocyanate compounds are possible.

Persons suffering from allergic reactions to isocyanates should avoid contact with the product.

May cause damage to organs through prolonged or repeated exposure.

Inhalative toxicity:

May cause respiratory irritation.

The toxicity of the product is due to its narcotic effect after inhalation.

In the event of protracted or repeated exposure, damage to health cannot be excluded.

Skin irritation:

Causes skin irritation.

Eye irritation:

Causes serious eye irritation.

Sensitizing:

May cause an allergic skin reaction.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Carcinogenicity:

Suspected of causing cancer

Acute oral toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	LD50	> 10.000 mg/kg	oral		rat	OECD Guideline 401 (Acute Oral Toxicity)
2,2'-dimorpholinyl-diethyl ether 6425-39-4	LD50	2.025 mg/kg	oral		rat	

Acute dermal toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	LD50	> 9.400 mg/kg	dermal		rat	OECD Guideline 402 (Acute Dermal Toxicity)
2,2'-dimorpholinyl-diethyl ether 6425-39-4	LD50	3.038 mg/kg	dermal		rabbit	

Skin corrosion/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
2,2'-dimorpholinyldiethyl ether 6425-39-4	not irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
2,2'-dimorpholinyldiethyl ether 6425-39-4	irritating	24 h	rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Repeated dose toxicity

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Method
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	NOAEL=0,2 mg/m ³	inhalation: aerosol	2 y6 h per d, 5 d per week	rat	OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)

SECTION 12: Ecological information**General ecological information:**

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.
Do not empty into drains, soil or bodies of water.

12.1. Toxicity

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	LC50	> 1.000 mg/l	Fish	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)
2,2'-dimorpholinyldiethyl ether 6425-39-4	LC50	> 2.150 mg/l	Fish	96 h		OECD Guideline 203 (Fish, Acute Toxicity Test)

12.2. Persistence and degradability

Hazardous components CAS-No.	Result	Route of application	Degradability	Method
2,2'-dimorpholinyldiethyl ether 6425-39-4	readily biodegradable	aerobic	> 60 %	OECD 301 A - F

12.3. Bioaccumulative potential / 12.4. Mobility in soil

Hazardous components CAS-No.	LogKow	Bioconcentration factor (BCF)	Exposure time	Species	Temperature	Method
2,2'-dimorpholinyldiethyl ether 6425-39-4	-1,31					

12.5. Results of PBT and vPvB assessment

Hazardous components CAS-No.	PBT/vPvB

Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
2,2'-dimorpholinyl-diethyl ether 6425-39-4	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

12.6. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:

Dispose of waste and residues in accordance with local authority requirements.

Disposal of uncleaned packages:

Use packages for recycling only when totally empty.

Waste code

08 05 01 Waste isocyanates

SECTION 14: Transport information

14.1. UN number

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

14.2. UN proper shipping name

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

14.3. Transport hazard class(es)

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

14.4. Packaging group

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

14.5. Environmental hazards

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

14.6. Special precautions for user

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

SECTION 15: Regulatory information

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

VOC content 0,00 %
(VOCV 814.018 VOC regulation
CH)

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

National regulations/information (Germany):

WGK:	1, slightly water-endangering product. (German VwVwS of May 17, 1999) Classification in conformity with the calculation method
Storage class according to TRGS 510:	10
General remarks (DE):	This product is in scope of the German regulation "Chemikalien Verbots Verordnung"

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

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

Further information:

This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

Relevant changes in this safety data sheet are indicated by vertical lines at the left margin in the body of this document. Corresponding text is displayed in a different color on shadowed fields.