

Safety data sheet
complying with Regulation 1907/2006/EC (REACH Regulation),
EU 2020/878 and Regulation No 1272/2008/EC (CLP)

Printing date 13.07.2023

Version number 2 (replaces version 1)

Revision: 13.07.2023

*** SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier****Trade name:** KLB-SYSTEM PU-BETON 4000 Component B**Chemical Identification:** diphenylmethane diisocyanate, isomeres and homologues**CAS Number:**

9016-87-9

EC number:

618-498-9

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

No further relevant information available.

Application of the substance / the mixture:

Epoxid coating

Hardening agent

1.3 Details of the supplier of the safety data sheet**Manufacturer/Supplier:**

PENETRON HELLAS S.A. G.E.MH. No: 07278001000

50, THRAKOMAKEDONON AV., 136 79 ACHARNES, GREECE

TEL.: +30 210 2448250 - FAX: + 30 210 2476803

Email: info@penetron.gr Site: www.penetron.gr

1.4 Emergency telephone number:

European Emergency Tel.: 112

*** SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****Classification according to Regulation EC No 1272/2008 CLP:**

GHS08 health hazard

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 CLP:**

The substance is classified and labelled according to the CLP regulation.

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Hazard pictograms:

GHS07 GHS08

Signal word: Danger**Hazard-determining components of labelling:**

diphenylmethane diisocyanate, isomers and homologues

Hazard statements:

H332 Harmful if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317 May cause an allergic skin reaction.

H351 Suspected of causing cancer.

H335 May cause respiratory irritation.

H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

P302+P352 IF ON SKIN: Wash with plenty of 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.

Additional information:

EUH204 Contains isocyanates. May produce an allergic reaction.

As from 24 August 2023 adequate training is required before industrial or professional use.

2.3 Other hazards**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

3.1 Substances**CAS No. Description**

CAS: 9016-87-9 diphenylmethane diisocyanate, isomers and homologues - 100% w/w

Identification number(s)**EC number:** 618-498-9**Specific concentration limits**

Eye Irrit. 2; H319: C ≥ 5 %

Skin Irrit. 2; H315: C ≥ 5 %

Resp. Sens. 1; H334: C ≥ 0.1 %

STOT SE 3; H335: C ≥ 5 %

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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.

Change contaminated clothing and wash before use.

After inhalation:

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

After skin contact: Clean with water and soap. If possible, also wash with polyethylene glycol 400.

After eye contact:

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids.

Check for and remove any contact lenses.

Continue to rinse for 15 minutes.

Get medical attention if irritation occurs.

Avoid strong water jet-risk of cornea damage, consult a doctor.

After swallowing: Do not induce vomiting; call for medical help immediately.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents:

CO₂, powder or water spray. Fight larger fires with water spray.

Use fire extinguishing methods suitable to surrounding conditions.

For safety reasons unsuitable extinguishing agents: Water with full jet

5.2 Special hazards arising from the substance or mixture

During heating or in case of fire poisonous gases are produced.

5.3 Advice for firefighters

Protective equipment:

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

Additional information

Collect contaminated fire fighting water separately. It must not enter the sewage system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Keep unprotected persons away.

Avoid contact with skin and eyes.

Avoid inhalation of vapors.

Ensure adequate ventilation.

6.1.1 For non-emergency personnel Avoid contact with dripping or leaking material

6.1.2 For emergency responders

First-aid responders must wear protective clothing, gloves, goggles and respiratory device with filter type A.

6.2 Environmental precautions: Do not allow to enter sewers/ surface or ground water.

6.3 Methods and material for containment and cleaning up:

It is collected with liquid absorbent materials (vermiculite, sand, pyrite deposits, sawdust).

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Dispose contaminated material as waste according to section 13.

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**7.1 Precautions for safe handling**

Ensure good ventilation.

Avoid contact with eyes, hands and clothing.

Wash contaminated clothes before reusing them.

Do not eat, drink or smoke when using this product.

Wash your hands and face after using the product.

Avoid inhaling vapors.

Information about fire - and explosion protection: No special measures required.

7.2 Conditions for safe storage, including any incompatibilities

Storage: Store in tightly closed containers, in a cool and dry place with good ventilation.

Requirements to be met by storerooms and receptacles:

Store in original container.

Store in a cool and dry place.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: Keep container tightly sealed.

7.3 Specific end use(s) No further relevant information available.

*** SECTION 8: Exposure controls/personal protection****8.1 Control parameters****Ingredients with limit values that require monitoring at the workplace:**

CAS: 9016-87-9 diphenylmethane diisocyanate, isomeres and homologues

WEL (Great Britain)	Short-term value: 0.07 mg/m ³
	Long-term value: 0.02 mg/m ³
	Sen; as -NCO

8.2 Exposure controls

8.2.1. Appropriate engineering controls No other recommendations, see chapter 7.

Individual protection measures, such as personal protective equipment**General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Avoid contact with the eyes and skin.

Do not eat, drink or smoke while using the product.

Do not breathe vapours or mists.

Remove contaminated clothes and wash before reusing them.

Be sure to clean skin thoroughly after work and before breaks.

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Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

For high concentrations of ABEK-P2 filter type.

Hand protection

Protective gloves resistant to chemicals (standard EN 374-1)

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

Butyl Gloves

Nitrile gloves

Chemical resistant gloves Viton

Thickness: ≥ 0.5 mm

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

The determined penetration times according to EN 16523-1:2015 are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.

Eye/face protection

Tightly sealed goggles (EN 166).

Body protection:

Protective work clothing

* **SECTION 9: Physical and chemical properties**

9.1 Information on basic physical and chemical properties**General Information**

Physical state

Liquid

Colour:

Dark brown

Odour:

Characteristic

Odour threshold:

Not determined

Melting point/freezing point:

-30 °C

Boiling point or initial boiling point and boiling range

300 °C

Flammability

Product is not flammable.

Lower and upper explosion limit

Lower:

Not determined

Upper:

Not determined

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Flash point:	204 °C
Auto-ignition temperature:	400 °C
Decomposition temperature:	Not determined
pH	Not applicable
Viscosity:	
Kinematic viscosity	Not applicable
Dynamic at 20 °C:	100 mPas (DIN EN ISO 3219)
Solubility	
water:	Insoluble
Partition coefficient n-octanol/water (log value)	Not determined
Vapour pressure at 20 °C:	0.0001 hPa
Density and/or relative density	
Density at 20 °C:	1.24 g/cm ³ (DIN EN ISO 2811-2)
Relative density	Not determined
Vapour density	Not applicable
Particle characteristics	
See section 3.	

9.2 Other information**Appearance:**

Form: Liquid

Important information on protection of health and environment, and on safety.

Ignition temperature:	Not determined.
Explosive properties:	Product does not present an explosion hazard.
Cloud point / clarification point:	
Oxidising properties	Not oxidising
Evaporation rate	Not applicable

Information with regard to physical hazard classes

Explosives	Void
Flammable gases	Void
Aerosols	Void
Oxidising gases	Void
Gases under pressure	Void
Flammable liquids	Void
Flammable solids	Void
Self-reactive substances and mixtures	Void
Pyrophoric liquids	Void
Pyrophoric solids	Void
Self-heating substances and mixtures	Void
Substances and mixtures, which emit flammable gases in contact with water	Void
Oxidising liquids	Void
Oxidising solids	Void
Organic peroxides	Void
Corrosive to metals	Void
Desensitised explosives	Void

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SECTION 10: Stability and reactivity

10.1 Reactivity Stable under normal conditions

10.2 Chemical stability Material is stable under normal conditions.

Thermal decomposition / conditions to be avoided Stable at environment temperature.

10.3 Possibility of hazardous reactions

Reacts with alcohols.

Reacts with strong acids.

Exothermic polymerisation

10.4 Conditions to avoid No further relevant information available.

10.5 Incompatible materials No further relevant information available.

10.6 Hazardous decomposition products Corrosive gases/vapours

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity Harmful if inhaled.

LD/LC50 values relevant for classification:

CAS: 9016-87-9 diphenylmethane diisocyanate, isomers and homologues

Oral	LD50	>10,000 mg/kg (rat)
Dermal	LD50	>10,000 mg/kg (rabbit)
Inhalative	LC50(4h)	11 mg/l (ATE)

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/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.

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

Carcinogenicity

Carcinogen, Category 2

Suspected of causing cancer.

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

STOT-single exposure

The product is classified as Specific Target Organ Toxicity after single exposure Category 3

May cause respiratory irritation.

STOT-repeated exposure

STOT Repeated Exposure Category 2

May cause damage to organs through prolonged or repeated exposure.

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

Additional toxicological information:

Sensitisation Sensitization possible through skin contact

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Carc. 2

11.2 Information on other hazards

Endocrine disrupting properties

Substance is not listed.

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SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

(CAS: 9016-87-9) diphenylmethanediisocyanate, isomers and homologues

EC50/24h >1000 mg/l (Daphnia (Wasserfloh))

LC0/96h >1000 mg/l (Brachydanio rerio (Zebrabärbling))

NOEC / 21 Tage >10 mg/l (Daphnia (Wasserfloh))

12.2 Persistence and degradability

 No further relevant information available.

12.3 Bioaccumulative potential

 No further relevant information available.

12.4 Mobility in soil

 No further relevant information available.

12.5 Results of PBT and vPvB assessment

PBT: Not applicable.**vPvB:** Not applicable.

12.6 Endocrine disrupting properties

The product does not contain substances with endocrine disrupting properties.

12.7 Other adverse effects

 No further relevant information available.

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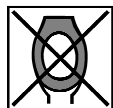
SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recommendation



Dispose according to National Regulations.



Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Contact manufacturer for recycling information.

Waste disposal key:

08 04 09 - waste adhesives and sealants containing organic solvents or other dangerous substances.

European waste catalogue

HP4	Irritant - skin irritation and eye damage
HP5	Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
HP7	Carcinogenic
HP13	Sensitising

Uncleaned packaging:

Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

14.1 UN number or ID number

Unenforceable. Not classified as dangerous for transport.

ADR, ADN, IMDG, IATA

Void

14.2 UN proper shipping name

ADR, ADN, IMDG, IATA

Void

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14.3 Transport hazard class(es)**ADR, ADN, IMDG, IATA****Class** Void**14.4 Packing group****ADR, IMDG, IATA** Void**14.5 Environmental hazards:** Not applicable.**14.6 Special precautions for user** Not applicable.**14.7 Maritime transport in bulk according to IMO****instruments** Not applicable.**UN "Model Regulation":** Void

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SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

REACH Regulation 1907/2006/EC

Regulation (EU) 2020/878

CLP Regulation 1272/2008/EC

Directive 98/24/EC on the protection of health and safety of workers from the risks related to chemicals agents at work.

Council Directive 94/33/EC on the protection of young people at work, as amended.

Directive 92/85/EEC on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding, as amended

Directive 2012/18/EU**Named dangerous substances - ANNEX I**

None of the ingredients is listed.

The substance is not included in Annex I.

DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II

Substance is not listed.

REGULATION (EU) 2019/1148**Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

Substance is not listed.

Annex II - REPORTABLE EXPLOSIVES PRECURSORS

Substance is not listed.

Regulation (EC) No 273/2004 on drug precursors

Substance is not listed.

Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors

Substance is not listed.

National regulations:**Other regulations, limitations and prohibitive regulations****Substances of very high concern (SVHC) according to REACH, Article 57**

The substance is not SVHC.

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15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information


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.

Training hints

Suitable training on safety in handling, storing and converting the product should be given to the employees based on all the existing information.

Classification according to Regulation (EC) No 1272/2008 -

Department issuing SDS:

 SUSTCHEM S.A.
 REACH & Chemical Services Department
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Version number of previous version: 1

Abbreviations and acronyms:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Resp. Sens. 1: Respiratory sensitisation – Category 1

Skin Sens. 1: Skin sensitisation – Category 1

Carc. 2: Carcinogenicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

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