

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

- **1.1 Product identifier**
- **Trade name: Zettex PU 70**
- **Article number:**
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **1.2.1 Relevant identified uses**
- **Sector of Use**
 - SU3 Industrial uses: uses of substances as such or in preparations at industrial sites
 - SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
- **Product category PC1 Adhesives, sealants**
- **Process category**
 - PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises
- **Environmental release category ERC5 Industrial use resulting in inclusion into or onto a matrix**
- **Application of the substance / the preparation : Polyurethane sealant**
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 - Zettex Europe BV
 - Plaza 20, 4782 SK Moerdijk
 - The Netherlands
 - +31(0)888-938839
 - info@zettex.nl
 - www.zettex.nl

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
 - Skin Irrit. 2 H315 Causes skin irritation.
 - Eye Irrit. 2 H319 Causes serious eye irritation.
 - Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 - Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
 - The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS08

- **Signal word** Danger
- **Hazard-determining components of labelling:**
 - 4,4'-methylenediphenyl diisocyanate
- **Hazard statements**
 - H315 Causes skin irritation.

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H319 Causes serious eye irritation.

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

H412 Harmful to aquatic life with long lasting effects.

- **Precautionary statements**

P260 Do not breathe vapours.

P284 In case of inadequate ventilation wear respiratory protection.

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

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

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P501 Dispose of contents and container in accordance with local regulations.

- **Advised precautionary statements** P102 Keep out of reach of children.

- **Additional information :**

Contains isocyanates. May produce an allergic reaction.

- **2.3 Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.2 Chemical characterisation: Mixtures**

- **Description:** Product containing a polyurethane prepolymer based on diphenylmethanediisocyanate.

- **Dangerous components:**

CAS: 1333-86-4 EINECS: 215-609-9 Reg.nr.: 01-2119384822-32	carbon black substance with a Community workplace exposure limit	15-25%
CAS: 101-68-8 EINECS: 202-966-0 Reg.nr.: 01-2119457014-47	4,4'-methylenediphenyl diisocyanate ⚠ 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	< 1%
CAS: 683-18-1 EINECS: 211-670-0 Reg.nr.: 01-2119496066-31	dibutyltin dichloride ⚠ Acute Tox. 3, H301; Acute Tox. 2, H330; ⚠ Muta. 2, H341; Repr. 1B, H360FD; STOT RE 1, H372; ⚠ Skin Corr. 1B, H314; ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠ Acute Tox. 4, H312	< 0.1%

- **SVHC** 683-18-1 dibutyltin dichloride

- **Additional information :** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- **4.1 Description of first aid measures**

- **General information** Immediately remove any clothing soiled by the product.

- **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.

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- **After eye contact**
Rinse opened eye for several minutes under running water. If symptoms persist, 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**
Nausea
Disziness
Headache
Allergic reactions
- **4.3 Indication of any immediate medical attention and special treatment needed**
Medical supervision for at least 48 hours

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents** CO₂, extinguishing powder or water spray.
- **For safety reasons unsuitable extinguishing agents** Water with full jet.
- **5.2 Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Carbon monoxide (CO)
Nitrogen oxides (NO_x)
In certain fire conditions, traces of other toxic gases cannot be excluded, e.g.:
Hydrogen cyanide (HCN)
Isocyanates
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation.
- **6.2 Environmental precautions:** Do not allow product to reach sewage system or any water course.
- **6.3 Methods and material for containment and cleaning up:** Pick up mechanically.
- **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** Open and handle receptacle with care
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Protect from humidity and water.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

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· 8.1 Control parameters

· Components with limit values that require monitoring at the workplace:

1333-86-4 carbon black

WEL Short-term value: 7 mg/m³
Long-term value: 3.5 mg/m³

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

683-18-1 dibutyltin dichloride

WEL Short-term value: 0.2 mg/m³
Long-term value: 0.1 mg/m³
as Sn; Sk

· **Additional information:** The lists that were valid during the creation were used as basis.

· 8.2 Exposure controls

· Personal protective equipment

· General protective and hygienic measures

Wash hands before breaks and at the end of work.

Do not eat, drink, smoke while working.

Avoid contact with the eyes and skin.

· Breathing equipment:

Use suitable respiratory protective device in case of insufficient ventilation:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Short term filter device:

Filter AB

· Protection of hands:

Nitrile rubber gloves

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 preparation 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.

· **Eye protection:** Tightly sealed 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: Pasty
Colour: Black
Odour: without
Odour threshold: Not determined.

· **pH-value:** Not applicable.

· Change in condition

Melting point/Melting range: undetermined
Boiling point/Boiling range: > 190 °C

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· Flash point:	> 90 °C
· Flammability (solid)	Not determined.
· Self-ignition temperature:	> 200 °C
· Decomposition temperature:	> 140 °C
· Self igniting:	Product is not selfigniting at room temperature.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible
· Explosion limits:	
Lower:	0.6 Vol %
Upper:	7 Vol %
· Vapour pressure:	Not applicable.
· Density at 20 °C:	1.23
· Vapour density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
dynamic:	Not applicable.
kinematic:	Not applicable.
· 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
Reacts with alcohols, amines, aqueous acids and alkalis.
Reacts with water forming carbon dioxide. Danger of receptacles bursting because of vapour overpressure.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** None to our knowledge at room temperature.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.

LD/LC50 values that are relevant for classification:

683-18-1 dibutyltin dichloride

Oral	LD50	100 mg/kg (rat)
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- **Primary irritant effect:**
- **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.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **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.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **Other information:** The product is not easily biodegradable.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Harmful to fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.
The product contains materials that are harmful to the environment.
Do not allow product to reach ground water, water course or sewage system.
Harmful to aquatic organisms
- **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 be disposed of in an incinerator for hazardous waste according to official regulations.
- **Waste disposal key:** 08 04 09*
- **Uncleaned packaging :**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- **14.1 UN-Number**
- **ADR, ADN, IMDG, IATA** Void

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· 14.2 UN proper shipping name · ADR, ADN, IMDG · IATA	Void Not regulated
· 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 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· UN "Model Regulation":	Void

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has 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.

This data sheet is particularly in accordance with the european regulations 1907/2006/EC, 1272/2008/EC and their amendments ; it is written according to annex II of the european regulation 453/2010/EC.

· **Relevant phrases**

- H301 Toxic if swallowed.
- H312 Harmful in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H330 Fatal if inhaled.
- H332 Harmful if inhaled.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H335 May cause respiratory irritation.
- H341 Suspected of causing genetic defects.
- H351 Suspected of causing cancer.
- H360FD May damage fertility. May damage the unborn child.
- H372 Causes damage to organs through prolonged or repeated exposure.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.

- **Department issuing MSDS:** Laboratory

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- **Contact:** cf. § 1

- **Review :**

An asterisk in the margin of a paragraph means amendments in comparison to the former version.

- **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord européen sur le transport 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

ELINCS: European List of Notified 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. 3: Acute toxicity, Hazard Category 3

Acute Tox. 2: Acute toxicity, Hazard Category 2

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

Muta. 2: Germ cell mutagenicity, Hazard Category 2

Carc. 2: Carcinogenicity, Hazard Category 2

Repr. 1B: Reproductive toxicity, Hazard Category 1B

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

STOT RE 1: Specific target organ toxicity - Repeated exposure, Hazard Category 1

STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2

Aquatic Acute 1: Hazardous to the aquatic environment - Acute Hazard, Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1

Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3

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Annex: Exposure scenario

- **Name** 4,4'-methylenediphenyl diisocyanate
- **Short title of the exposure scenario**
Industrial use for rigid foam, coatings and adhesives and sealants
Professional end use in rigid foam, coatings, adhesives and sealants and other composite material
Consumer end use in rigid foam, coatings and adhesives and sealants
- **Sector of Use**
 SU3 Industrial uses: uses of substances as such or in preparations at industrial sites
 SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
 SU21 Consumer uses: Private households / general public / consumers
- **Product category**
 PC1 Adhesives, sealants
 PC9a Coatings and paints, thinners, paint removers
 PC32 Polymer preparations and compounds
- **Process category**
 PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
 PROC7 Industrial spraying
 PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
 PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
 PROC15 Use as laboratory reagent
- **Environmental release category**
 ERC5 Industrial use resulting in inclusion into or onto a matrix
 ERC8c Wide dispersive indoor use resulting in inclusion into or onto a matrix
 ERC8f Wide dispersive outdoor use resulting in inclusion into or onto a matrix
 ERC2 Formulation of preparations
- **Conditions of use** According to directions for use.
- **Duration and frequency**
 up to 8 hour(s) per day
 For consumer end use in rigid foam, coatings and adhesives and sealants :
 Covers use up to 1 day/year
 Covers skin contact area up to 2 cm²
- **Physical parameters**
- **Physical state** Liquid
- **Concentration of the substance in the mixture** Raw material.
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure**
 Local fresh water dilution factor: 10
 Local marine water dilution factor : 100
- **Other operational conditions affecting worker exposure**
 Avoid contact with the skin and eyes.
 Indoor application.
 Outdoor application.
 Do not breathe gas/vapour/aerosol.
- **Other operational conditions affecting consumer exposure** Keep out of the reach of children.
- **Other operational conditions affecting consumer exposure during the use of the product**
 Not applicable.

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- **Risk management measures**

- **Worker protection**

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Provide extraction ventilation at points where emissions occur. Provide extract ventilation to material transfer points and other openings. Handle in a fumecupboard or under extract ventilation.

If above technical/organisational control measures are not feasible, then adopt following PPE: wear a respirator conforming to EN140 with Type A filter or better.

Use suitable eye protection and gloves. Wear suitable coveralls to prevent exposure to the skin.

- **Organisational protective measures**

Ensure that activities are executed by specialists or authorised personnel only.

- **Technical protective measures**

Ensure that suitable extractors are available on processing machines

Work only in fume cupboard.

Ensure good ventilation/exhaustion at the workplace.

- **Personal protective measures**

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

Tightly sealed goggles.

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Short term filter device:

Filter A2B2-P3

Butyl, nitrile or polychloroprene rubber gloves of superior quality.

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 preparation 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.

Protective work clothing.

- **Measures for consumer protection**

Ensure adequate labelling.

Keep locked up and out of the reach of children.

Protective gloves

Tightly sealed goggles.

- **Environmental protection measures**

- **Air** No special measures required.

- **Water** Do not allow to reach ground water, water bodies or sewage system.

- **Soil** Prevent contamination of soil.

- **Disposal measures** Disposal must be made according to official regulations.

- **Disposal procedures**

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

- **Exposure estimation**

- **Worker (dermal)**

The highest dermal exposure to be expected is 5.0 mg / kg / day.

(estimations using EASE)

- **Worker (inhalation)** The highest inhalative exposure to be expected is 0.05 ppm.

- **Environment**

Prediction of highest expected environmental exposure (soil) is 0.27 mg/kg dry weight

The highest environmental exposure to be expected for surface waters is 0.0687 mg / L.

Prediction of highest expected environmental exposure (sea water) is 0.000543 mg/kg

- **Consumer**

The highest inhalative exposure to be expected for consumers is 0.020 ppm.

The highest dermal exposure to be expected for consumers is 0.069 mg / kg / day.

(Consexpo model)

- **Guidance for downstream users**

For the risk assessment, the tools recommended by ECHA can be used.