

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 14.03.2017

Revision: 14.03.2017

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

- **1.1 Product identifier**
- **Trade name: MULTIAKTIV - PRIMER KOMBISTICK**
- **Article number: 82410**
- **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 Chemical production where opportunity for exposure arises**
- **Environmental release category ERC5 Use at industrial site leading to inclusion into/onto article**
- **Application of the substance / the preparation : Primer for adhesive or sealant**
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 PETEC Verbindungstechnik GmbH
 Wüstenbuch 26
 96132 SCHLÜSSELFELD / DEUTSCHLAND
 Telefon +49 (0) 9555 80994-0
 Fax +49 (0) 9555-80994-25
 Homepage www.petec.de
 E-Mail : info@petec.de
- **Information department: Laboratory**
- **1.4 Emergency telephone number: +49 (0) 9555 80994-0**

SECTION 2: Hazards identification

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

Flam. Liq. 2	H225	Highly flammable liquid and vapour.
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.
Skin Sens. 1	H317	May cause an allergic skin reaction.
Carc. 2	H351	Suspected of causing cancer.
STOT SE 3	H335-H336	May cause respiratory irritation. May cause drowsiness or dizziness.
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**



GHS02 GHS07 GHS08

- **Signal word** Danger

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- **Hazard-determining components of labelling:**

4,4'-methylenediphenyl diisocyanate

methylethylketone

Polyisocyanate based on hexamethylene diisocyanate and tolylene diisocyanate

diphenylmethanediisocyanate, isomers and homologues

diphenylmethane-2,4'-diisocyanate

1,6-hexamethylene diisocyanate homopolymer

- **Hazard statements**

H225 Highly flammable liquid and vapour.

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-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

H412 Harmful to aquatic life with long lasting effects.

- **Precautionary statements**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
No smoking.

P284 In case of inadequate ventilation wear respiratory protection.

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

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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 based upon polyisocyanate

- **Dangerous components:**

CAS: 78-93-3 EINECS: 201-159-0 Reg.nr.: 01-2119457290-43	methylethylketone ☠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319; STOT SE 3, H336	40-60%
CAS: 123-86-4 EINECS: 204-658-1 Reg.nr.: 01-2119485493-29	n-butyl acetate ☠ Flam. Liq. 3, H226; ⚠ STOT SE 3, H336	5-15%
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	5-10%

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CAS: 26426-91-5	Polyisocyanate based on hexamethylene diisocyanate and tolylene diisocyanate ⚠ Skin Sens. 1, H317	5-10%
CAS: 1333-86-4 EINECS: 215-609-9 Reg.nr.: 01-2119384822-32	carbon black substance with a Community workplace exposure limit	2-5%
CAS: 9016-87-9	diphenylmethanediisocyanate, isomers and homologues ⚠ 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	2-5%
CAS: 5873-54-1 EINECS: 227-534-9 Reg.nr.: 01-2119480143-45	diphenylmethane-2,4'-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	2-5%
CAS: 2530-83-8 EINECS: 219-784-2 Reg.nr.: 01-2119513212-58	[3-(2,3-epoxypropoxy)propyl]trimethoxysilane ⚠ Eye Dam. 1, H318	< 2%
CAS: 28182-81-2 Reg.nr.: 01-2119485796-17	1,6-hexamethylene diisocyanate homopolymer ⚠ Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335	< 2%
CAS: 108-65-6 EINECS: 203-603-9 Reg.nr.: 01-2119475791-29	2-methoxy-1-methylethyl acetate ⚠ Flam. Liq. 3, H226	< 2%
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 :**

Contains 4,4'-methylenediphenyl diisocyanate (CAS : 101-68-8, EINECS : 202-966-0, Reg. nr. : 01-2119457014-47)

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.

• **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.

• **4.2 Most important symptoms and effects, both acute and delayed**

Headache

Dizziness

Gastric or intestinal disorders.

Drowsiness

Breathing difficulty

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- **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, 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)
Hydrogen cyanide (HCN)
Isocyanates
In certain fire conditions, traces of other toxic gases cannot be excluded.
- **5.3 Advice for firefighters**
- **Protective equipment:** Mount respiratory protective device.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation.
Keep away from ignition sources.
Use respiratory protective device against the effects of fumes/dust/aerosol.
- **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.
Send for recovery or disposal in suitable receptacles.
Do not close them (reaction with water forming carbon dioxide).
- **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 interior ventilation, especially at floor level. (Fumes are heavier than air).
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
Provide ventilation for receptacles.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep receptacle tightly sealed.
Protect from humidity and water.

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- **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.

· 8.1 Control parameters

- **Components with limit values that require monitoring at the workplace:**

78-93-3 methylethylketone

WEL	Short-term value: 899 mg/m ³ , 300 ppm Long-term value: 600 mg/m ³ , 200 ppm Sk, BMGV
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123-86-4 n-butyl acetate

WEL	Short-term value: 966 mg/m ³ , 200 ppm Long-term value: 724 mg/m ³ , 150 ppm
-----	---

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

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

1333-86-4 carbon black

WEL	Short-term value: 7 mg/m ³ Long-term value: 3.5 mg/m ³
-----	---

9016-87-9 diphenylmethanediisocyanate, isomers and homologues

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

5873-54-1 diphenylmethane-2,4'-diisocyanate

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

108-65-6 2-methoxy-1-methylethyl acetate

WEL	Short-term value: 548 mg/m ³ , 100 ppm Long-term value: 274 mg/m ³ , 50 ppm Sk
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683-18-1 dibutyltin dichloride

WEL	Short-term value: 0.2 mg/m ³ Long-term value: 0.1 mg/m ³ as Sn; Sk
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- **Ingredients with biological limit values:**

78-93-3 methylethylketone

BMGV	70 µmol/L Medium: urine Sampling time: post shift Parameter: butan-2-one
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· **CAS No. Designation of material % Type Value Unit**

· **Additional Occupational Exposure Limit Values for possible hazards during processing:**

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

WEL	Short-term value: 0.07 mg/m ³ Long-term value: 0.02 mg/m ³ Sen; as -NCO
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· **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.

Immediately remove all soiled and contaminated clothing.

Do not inhale gases / fumes / aerosols.

Do not eat, drink, smoke while working.

Avoid contact with the eyes and skin.

· **Breathing equipment:**

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:**

Butyl 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.

· **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:	Fluid
Colour:	Black
Odour:	without

· **Change in condition**

Melting point/freezing point: undetermined

Initial boiling point and boiling range: 79 °C

· **Flash point:** -8 °C

· **Self-ignition temperature:** > 200 °C

· **Self igniting:** Product is not selfigniting at room temperature.

· **Explosive properties:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible

· **Explosion limits:**

Lower:	1.8 Vol %
Upper:	11.5 Vol %

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· Density at 20 °C:	0.95
· Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
· Viscosity: dynamic at 20 °C:	approx. 1 mPa.s
· Solvent content: Organic solvents:	63 %
· 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.
Reacts with strong oxidising agents.
- **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:**

78-93-3 methylethylketone

Oral	LD50	3300 mg/kg (rat)
Dermal	LD50	5000 mg/kg (rbt)

123-86-4 n-butyl acetate

Oral	LD50	14000 mg/kg (rat)
Inhalative	LC50/4 h	>21.0 mg/l (rat)

683-18-1 dibutyltin dichloride

Oral	LD50	100 mg/kg (rat)
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- **Primary irritant effect:**
- **Skin corrosion/irritation**
Frequent or prolonged contact may irritate and cause dermatitis.
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.

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- **Additional toxicological information:**
Persons having a history of asthma or of allergies, chronic or recurring difficulties in breathing, must never use this preparation.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity**
Suspected of causing cancer.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure**
May cause respiratory irritation. 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.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **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.
- **Ecotoxicological effects:**
- **Remark:** Harmful to fish
- **Other information:** -
- **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:** 14 06 03*
- **Uncleaned packaging :**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- | | |
|---|---|
| <ul style="list-style-type: none"> · 14.1 UN-Number · ADR, IMDG, IATA | <p>UN1866</p> |
| <ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR | <p>1866 RESIN SOLUTION (vapour pressure at 50 °C not more than 110 kPa)</p> |

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· IMDG, IATA	RESIN SOLUTION
· 14.3 Transport hazard class(es)	
· ADR, IMDG, IATA	
	
· Class	3 Flammable liquids.
· Label	3
· 14.4 Packing group	
· ADR, IMDG, IATA	II
· 14.5 Environmental hazards:	
· Marine pollutant:	No
· 14.6 Special precautions for user	Warning: Flammable liquids.
· Danger code (Kemler):	33
· EMS Number:	F-E, S-E
· Stowage Category	B
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· Transport category	2
· Tunnel restriction code	D/E
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1866 RESIN SOLUTION (VAPOUR PRESSURE AT 50 °C NOT MORE THAN 110 KPA), 3, II

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.
- **Seveso category P5c** FLAMMABLE LIQUIDS
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5.000 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50.000 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 20, 30, 56a, 56b

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- **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 830/2015/EC.

- **Relevant phrases**

- H225 *Highly flammable liquid and vapour.*
- H226 *Flammable liquid and vapour.*
- 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.*
- H318 *Causes serious eye damage.*
- 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.*
- H336 *May cause drowsiness or dizziness.*
- 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 SDS:** Laboratory

- **Contact:** cf. § 1

- **Review :**

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

- **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)

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

Flam. Liq. 2: Flammable liquids – Category 2

Flam. Liq. 3: Flammable liquids – Category 3

Acute Tox. 3: Acute toxicity – Category 3

Acute Tox. 2: Acute toxicity – Category 2

Acute Tox. 4: Acute toxicity – Category 4

Skin Corr. 1B: Skin corrosion/irritation – Category 1B

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

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

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

Resp. Sens. 1: Respiratory sensitisation – Category 1

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*Skin Sens. 1: Skin sensitisation – Category 1**Muta. 2: Germ cell mutagenicity – Category 2**Carc. 2: Carcinogenicity – Category 2**Repr. 1B: Reproductive toxicity – Category 1B**STOT SE 3: Specific target organ toxicity (single exposure) – Category 3**STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1**STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2**Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1**Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1**Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3*

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Annex: Exposure scenario 1

- **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 Chemical production where opportunity for exposure arises
 PROC5 Mixing or blending in batch processes
 PROC7 Industrial spraying
 PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
 PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
 PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
 PROC15 Use as laboratory reagent
- **Environmental release category**
 ERC5 Use at industrial site leading to inclusion into/onto article
 ERC8c Widespread use leading to inclusion into/onto article (indoor)
 ERC8f Widespread use leading to inclusion into/onto article (outdoor)
 ERC2 Formulation into mixture
- **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.
- **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.

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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.

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Annex: Exposure scenario 2

- **Name** methylethylketone
- **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
- **Process category**
 PROC4 Chemical production where opportunity for exposure arises
 PROC5 Mixing or blending in batch processes
 PROC7 Industrial spraying
 PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
 PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
 PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
 PROC10 Roller application or brushing
 PROC11 Non industrial spraying
 PROC13 Treatment of articles by dipping and pouring
 PROC19 Manual activities involving hand contact
- **Environmental release category**
 ERC2 Formulation into mixture
 ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
 ERC5 Use at industrial site leading to inclusion into/onto article
 ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
 ERC8c Widespread use leading to inclusion into/onto article (indoor)
 ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
 ERC8f Widespread use leading to inclusion into/onto article (outdoor)
- **Conditions of use** According to directions for use.
- **Duration and frequency**
SU21, PC1 (adhesives, sealants) :
Leisure adhesives PC1 :
 Concentrations up to 30 %
 365 days/year
 up to 4 hour(s) per day
 Exposed skin surface : 35.73 cm²
 Amounts used/applied per event : 9 g
 Room volume : > 20 m³
Do-it-yourself adhesives PC1 :
 Concentration of substance in product : up to 30 %
 Up to 6 h per day, 1 days per year
 Exposed skin surface : 110 cm²
 Amounts used/applied per event : 6390 g
 Room volume : > 20 m³
 Provide good general ventilation (at least 0.6 air change(s) per hour)
Sealing products PC1 :
 Concentration of substance in product : up to 20 %
 365 days/year

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Exposed skin surface : 35.73 cm²

Amounts used/applied per event : 75 g

1 hour(s)/day

Room volume : > 34 m³

Provide good general ventilation (at least 0.6 air change(s) per hour)

SU21,PC9a (coatings and paintings,solvents, thinners) :

Concentration of substance in product : up to 50 %

3 days/year

Up to 2 h per day

Exposed skin surface : 857.5 cm²

Amounts used/applied per event : 491 g

Room volume : > 20 m³

Provide good general ventilation (at least 0.6 air change(s) per hour)

· **Physical parameters**

· **Physical state** Fluid

· **Concentration of the substance in the mixture**

SU22 :

Weight fraction substance in the product (when used as cleaning agent PROC 10) : up to maximum of 25 %

Weight fraction substance in the product (when used as cleaning agent with low-pressure cleaning equipment PROC 10) : up to maximum of 5 %

Weight fraction substance in the product (when used as cleaning agent with high-pressure cleaning equipment PROC 11) : up to maximum of 1 %

· **Other operational conditions**

· **Other operational conditions affecting environmental exposure**

Observe section 6 of the Safety Data Sheet (Accidental release measures).

· **Other operational conditions affecting worker exposure**

Avoid contact with the skin and eyes.

Take precautionary measures against static discharge.

Keep away from sources of ignition - No smoking.

Ensure adequate ventilation, especially in closed rooms.

· **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**

Application temperature : room temperature

· **Risk management measures**

· **Worker protection**

Do not eat, drink, smoke while working.

SU3 :

Avoid direct contact with skin. Identify potential areas for indirect contact with the skin. Wear gloves (EN 374) if there is a risk of contact of the substance with the skin. Remove impurities / quantities immediately after spilling. Wash skin immediately after handling. Complete basic training of personnel, so that exposure is minimized and eventually the skin problems are reported. Other measures of skin protection are required, such as waterproof clothing and a protective mask during activities with high spread, leading to the likely significant release of aerosols (e.g. spraying).

Mixing operations (closed systems) : provide adequate general ventilation (not less than 3 to 5 air changes per hour).

Preparation of material for application / blending operations (open systems) : provide adequate controlled ventilation (10 to 15 air changes per hour).

Spray (automatic / robotic) : carry out in ventilated booth with laminar air flow.

Spray : ensure an adequate controlled ventilation (10 to 15 air changes per hour). Wear a respiratory protection (standard EN 140 with Type A filter or better).

Roller coating, spraying and flow coating : provide additional ventilation where emissions occur.

Storage with occasional controlled exposure : store substance in a closed system.

SU 22 :

Avoid direct contact with skin. Identify potential areas for indirect contact with the skin. Wear gloves (EN 374) if there is a risk of contact of the substance with the skin. Remove impurities / quantities

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immediately after spilling. Wash skin immediately after handling. Complete basic training of personnel, so that exposure is minimized and eventually the skin problems are reported. Other measures of skin protection are required, such as waterproof clothing and a protective mask during activities with high spread, leading to the likely significant release of aerosols (e.g. spraying).

Preparation of material for indoor application : provide adequate controlled ventilation (10 to 15 air changes per hour); avoid activities with more than 1 hour exposure.

Preparation of material for outdoor application : ensure that exploitation takes place outdoors ; avoid activities with more than 1 hour exposure.

Indoor roller coating, spraying and flow coating : ensure adequate controlled ventilation (10 to 15 air changes per hour) ; wear respiratory protection (standard EN 140 with Type A filter or better).

Outdoor roller coating, spray and flow coating : ensure that the operation takes place outdoors, wear respiratory protection (standard EN 140 with Type A filter or better).

Indoor spraying : carry out in ventilated booth with laminar air flow.

Outdoor spraying : ensure that the operation takes place outdoors ; avoid activities with more than 4 hours exposure ; wear a full face respirator according to standard EN136 with Type A filter or better.

Cleaning and maintenance of equipment : extinguish systems before opening and maintenance of equipment ; avoid activities with more than 4 hours exposure.

Storage with occasional controlled exposure : store substance in a closed system ; ensure an adequate controlled ventilation (10 to 15 air changes per hour).

- **Technical protective measures**

Provide explosion-proof electrical equipment.

Ensure that suitable extractors are available on processing machines

- **Personal protective measures**

Do not inhale gases / fumes / aerosols.

Tightly sealed goggles.

Avoid contact with the eyes.

- **Measures for consumer protection**

Ensure adequate labelling.

Protective gloves

Tightly sealed goggles.

Keep locked up and out of the reach of children.

- **Environmental protection measures**

Avoid release to the environment. Obtain special instructions / refer to Safety Data Sheet.

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

- **Soil** Prevent contamination of soil.

- **Notes** In case of unintended release of the product: See section 6 of the Safety Data Sheet.

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

- **Disposal procedures** Product residues are incinerated as special waste.