


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

- **1.1 Product identifier**
  - **Trade name:** 2 V 63 VERHARDER
  - **Article number:** 2V63-D95
  - **1.2 Relevant identified uses of the substance or mixture and uses advised against**
  - **Sector of Use**  
 SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites  
 SU19 Building and construction work  
 SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
  - **Product category** PC9a Coatings and paints, thinners, paint removers
  - **Process category**  
 PROC7 Industrial spraying  
 PROC10 Roller application or brushing  
 PROC19 Manual activities involving hand contact
  - **Application of the substance / the mixture** water dilutable, two component polyurethane coating hardener
  - **1.3 Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:**  
 Zandleven Coatings B.V.  
 Snekerterweg 57-59, 8912 AA Leeuwarden, Netherlands  
 Tel: +31 58 2129545 Fax: +31 58 2155996  
 E-mail: [info@zandleven.com](mailto:info@zandleven.com) Internet: [www.zandleven.com](http://www.zandleven.com)
  - **Further information obtainable from:** R&D department: [sds@zandleven.com](mailto:sds@zandleven.com)
  - **1.4 Emergency telephone number:**  
 National Poisoning Information Center (NVIC) - Bilthoven, the Netherlands  
 + 31 (0)88 755 8000 (only intended to inform physicians of accidental poisonings)
- Supplier  
 +31 (0)58 2677590 (during office hours)

## SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**  
 Acute Tox. 4 H332 Harmful if inhaled.  
 Skin Sens. 1 H317 May cause an allergic skin reaction.  
 STOT SE 3 H335 May cause respiratory irritation.  
 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**  
  
 GHS07
- **Signal word** Warning
- **Hazard-determining components of labelling:**  
 Hexamethylene-1,6-diisocyanate Homopolymer  
 Hydrophilic aliphatic polyisocyanate based on HDI  
 hexamethylene-di-isocyanate
- **Hazard statements**  
 H332 Harmful if inhaled.  
 H317 May cause an allergic skin reaction.  
 H335 May cause respiratory irritation.  
 H412 Harmful to aquatic life with long lasting effects.
- **Precautionary statements**  
 P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
 P273 Avoid release to the environment.  
 P312 Call a POISON CENTER/doctor if you feel unwell.  
 P362+P364 Take off contaminated clothing and wash it before reuse.

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P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Additional information:**

EUH204 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 Mixtures****Description:** Mixture of substances listed below with nonhazardous additions.**Dangerous components:**

Percentages of the components are expressed as a percentage by weight

CAS: 3779-63-3 EINECS: 223-242-0 Reg.nr.: 01-2119949539-20	Hexamethylene-1,6-diisocyanate Homopolymer ⚠ Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335	25-50%
CAS: 666723-27-9 EC number: 679-494-0	Hydrophilic aliphatic polyisocyanate based on HDI ⚠ Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335; Aquatic Chronic 3, H412	25-50%
CAS: 822-06-0 EINECS: 212-485-8 Index number: 615-011-00-1 Reg.nr.: 01-2119457571-37	hexamethylene-di-isocyanate ⚠ Acute Tox. 1, H330; ⚠ Resp. Sens. 1, H334; ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335, EUH204 Specific concentration limits: Resp. Sens. 1; H334: C ≥ 0.5 % Skin Sens. 1; H317: C ≥ 0.5 %	<1%

**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.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

**After inhalation:**

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

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

**After skin contact:** Immediately rinse with water.**After eye contact:** Rinse opened eye for several minutes under running water.**After swallowing:** If symptoms persist consult doctor.**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 or alcohol resistant foam.

**5.2 Special hazards arising from the substance or mixture** No further relevant information available.**5.3 Advice for firefighters****Protective equipment:** Mouth respiratory protective device.

### SECTION 6: Accidental release measures

**6.1 Personal precautions, protective equipment and emergency procedures** Not required.

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### 6.2 Environmental precautions:

- Do not allow product to reach sewage system or any water course.
- Inform respective authorities in case of seepage into water course or sewage system.
- Dilute with plenty of water.
- 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 section 13.
- Ensure adequate ventilation.

### 6.4 Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

- Ensure good ventilation/exhaustion at the workplace.
- Prevent formation of aerosols.

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

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage:

#### Requirements to be met by storerooms and receptacles:

- Store material in original, well-closed packages in a cool, well-ventilated area according to local regulations.

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

#### Further information about storage conditions: Keep container tightly sealed.

#### Recommended storage temperature: 5 - 30 °C

#### 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:

- The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

#### DNEL (Derived No Effect Level) for workers:

##### 3779-63-3 Hexamethylene-1,6-diisocyanate Homopolymer

Inhalative	Acute - local effects, worker	1 mg/m <sup>3</sup> (worker)
	Long-term - local effects, worker	0.5 mg/m <sup>3</sup> (worker)

##### 822-06-0 hexamethylene-di-isocyanate

Inhalative	Acute - local effects, worker	0.07 mg/m <sup>3</sup> (worker)
	Long-term - local effects, worker	0.035 mg/m <sup>3</sup> (worker)

#### PNEC (Predicted No Effect Concentration) values:

##### 3779-63-3 Hexamethylene-1,6-diisocyanate Homopolymer

Aquatic compartment - freshwater	0.127 mg/L (freshwater)
Aquatic compartment - marine water	0.013 mg/L (marine water)
Aquatic compartment - water, intermittent releases	1.27 mg/L (intermittent release water)
Aquatic compartment - sediment in freshwater	266,700 mg/kg sed dw (sediment fresh water)
Aquatic compartment - sediment in marine water	26,670 mg/kg sed dw (sediment marine water)
Terrestrial compartment - soil	53,183 mg/kg dw (soil)
Sewage treatment plant	880 mg/L (sewage treatment plant)

##### 822-06-0 hexamethylene-di-isocyanate

Aquatic compartment - freshwater	0.049 mg/L (freshwater)
Aquatic compartment - marine water	0.005 mg/L (marine water)
Aquatic compartment - sediment in freshwater	0.674 mg/kg sed dw (sediment fresh water)
Aquatic compartment - sediment in marine water	0.067 mg/kg sed dw (sediment marine water)
Terrestrial compartment - soil	0.523 mg/kg dw (soil)

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Sewage treatment plant

8.42 mg/L (sewage treatment plant)

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

· **8.2 Exposure controls**

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

· **Appropriate engineering controls** No further data; see section 7.

· **Individual protection measures, such as personal protective equipment**

· **General protective and hygienic measures:**

Provide readily accessible eye wash stations and safety showers.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

· **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.

Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If

workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

For organic vapors and solvents type of filter A1 or A2, for dust type of filter P (according to EN 140)

· **Hand protection**



Protective gloves

Chemical resistant gloves (EN 374)

Check protective gloves prior to each use for their proper condition.

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**

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.

Fluorocarbon rubber (Viton)

Nitrile rubber, NBR

· **Penetration time of glove material**

KCL Camatril 730

breakthrough time > 480 min.

thickness: 0,4 mm

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Not suitable are gloves made of the following materials:**

Neoprene gloves

Disposables

· **Eye/face protection** Goggles recommended during refilling

· **Body protection:**

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved before the product is used by a specialist.

If there is a risk of ignition by static electricity, anti-static protective clothing should be worn. For the best protection against static discharge, clothing should consist of anti-static overalls, boots and gloves.

For further information on materials and design requirements and test methods consult the European standard EN 1149.

· **Environmental exposure controls**

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

General Information	
Physical state	Fluid
Colour:	According to product specification
Odour:	Characteristic
Odour threshold:	Not determined.
Melting point/freezing point:	Undetermined.
Boiling point or initial boiling point and boiling range	190 °C (623-84-7 propane-1,2-diyl diacetate)
Flammability	Not applicable.
Lower and upper explosion limit	
Lower:	2.8 Vol % (623-84-7 propane-1,2-diyl diacetate)
Upper:	12.7 Vol % (623-84-7 propane-1,2-diyl diacetate)
Flash point:	86-95 °C
Auto-ignition temperature:	431 °C (623-84-7 propane-1,2-diyl diacetate)
Decomposition temperature:	Not determined.
pH	Not determined.
Viscosity:	
Kinematic viscosity	at 40 °C: > 20,5 mm²/s
Dynamic at 20 °C:	500 mPas
Solubility	
water:	Fully miscible.
Partition coefficient n-octanol/water (log value)	Not determined.
Vapour pressure at 20 °C:	<3 hPa (623-84-7 propane-1,2-diyl diacetate)
Density and/or relative density	
Density at 20 °C:	1.13 g/cm³
Relative density	Not determined.
Vapour density	Not determined.

### 9.2 Other information

Appearance:	
Form:	Solid
Important information on protection of health and environment, and on safety.	
Ignition temperature:	Product is not selfigniting.
Explosive properties:	Product does not present an explosion hazard.
Change in condition	
Evaporation rate	Not determined.

### 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** 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** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

### 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:

##### 822-06-0 hexamethylene-di-isocyanate

Oral	LD50	746 mg/kg (rat)
Dermal	LD50	>7,000 mg/kg (rat)
Inhalative	LC50/4 h	0.124 mg/l (rat)

- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** May cause an allergic skin reaction.
- **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** May cause respiratory irritation.
- **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.
- **11.2 Information on other hazards**

#### · Endocrine disrupting properties

None of the ingredients is listed.

### SECTION 12: Ecological information

#### · 12.1 Toxicity

##### · Aquatic toxicity:

##### 3779-63-3 Hexamethylene-1,6-diisocyanate Homopolymer

EC50/72 h | 1,000 mg/l (aquatic algae and cyanobacteria)

##### 822-06-0 hexamethylene-di-isocyanate

EC50/72 h | 77.4 mg/l (aquatic algae and cyanobacteria)

- **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**
- **Remark:** Harmful to fish
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.  
Harmful to aquatic organisms

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### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

##### Recommendation

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

##### European waste catalogue

08 00 00	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
08 01 00	wastes from MFSU and removal of paint and varnish
08 01 11*	waste paint and varnish containing organic solvents or other hazardous substances
HP5	Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
HP13	Sensitising
HP14	Ecotoxic

##### Uncleaned packaging:

Recommendation: Disposal must be made according to official regulations.

Recommended cleansing agents: Water, if necessary together with cleansing agents.

### SECTION 14: Transport information

#### 14.1 UN number or ID number

ADR/RID/ADN, IMDG, IATA Void

#### 14.2 UN proper shipping name

ADR/RID/ADN, IMDG, IATA Void

#### 14.3 Transport hazard class(es)

ADR/RID/ADN, ADN, IMDG, IATA

Class Void

#### 14.4 Packing group

ADR/RID/ADN, 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.

##### Transport/Additional information:

##### ADR/RID/ADN

Remarks: Up to 450 litre exempted according to ADR 2.2.3.1.5.

##### IMDG

Remarks: Up to 30 litre: Transport in accordance with Packs 2.3.2.5 of the IMDG Code.

##### IATA

Remarks: The "viscosity exemption" provisions do NOT apply to air transport.

##### 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.

REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3, 74

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

None of the ingredients is listed.

· **REGULATION (EU) 2019/1148**

· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

· **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

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

None of the ingredients is listed.

· **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.

This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

· **Classification according to Regulation (EC) No 1272/2008**

The classification of the mixture is generally based on the calculation method using substance data according to Regulation (EC) No 1272/2008.

· **Contact:** J. Dijkstra

· **Date of previous version:** 20.04.2023

· **Version number of previous version:** 7

· **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

ELINCS: European List of Notified Chemical Substances

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

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 1: Acute toxicity – Category 1

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

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

Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

· **Sources**

- ECHA European Chemical Agency - <http://echa.europa.eu/information-on-chemicals>

- SDS of raw materials supplied by producer/supplier.

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

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