

BONDING ADHESIVE

SAFETY DATA SHEET

According to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Product form : Mixture
Trade name : Pandser Bonding Adhesive
Type of product : Adhesives, sealants

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

Intended for general public
Main use category : Industrial use, Professional use, Consumer use
Function or use category : Adhesives, binding agents

1.3. Details of the supplier of the safety data sheet**Bedrijfsnaam**

Berdal Rubber & Plastics B.V.
Bedrijvenpark Twente 193
7602 KG Almelo Nederland
Tel: +31 (0)546 572672 Fax: +31 (0)546 575635
E-Mail: verkoop@berdal.com

1.4. Emergency telephone number

No additional information available

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

Flammable liquids, Category 3 H226
Skin corrosion/irritation, Category 2 H315
Serious eye damage/eye irritation, Category 2 H319
Skin sensitisation, Category 1 H317
Specific target organ toxicity – Single exposure, Category 3, H336
Narcosis
Hazardous to the aquatic environment – Chronic Hazard, H411
Category 2
Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

Highly flammable liquid and vapour. May cause drowsiness or dizziness. Causes skin irritation. Causes serious eye irritation. Toxic to aquatic life with long lasting effects.

2.2. Label elements**Labelling according to Regulation (EC) No. 1272/2008 [CLP]**

Hazard pictograms (CLP) :



GHS02



GHS07



GHS09

Signal word (CLP) :

Warning

Contains

hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane; cyclohexane; acetone;
4-tert-butylphenol formaldehyde resin

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Hazard statements (CLP)	: H226 - Flammable liquid and vapour. H315 - Causes skin irritation. H317 - May cause an allergic skin reaction. H319 - Causes serious eye irritation. H336 - May cause drowsiness or dizziness. H411 - Toxic to aquatic life with long lasting effects.
Precautionary statements (CLP)	: P101 - If medical advice is needed, have product container or label at hand. P102 - Keep out of reach of children. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P261 - Avoid breathing vapours. P271 - Use only outdoors or in a well-ventilated area. P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P501 - Dispose of contents, container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
Extra phrases	: This product is not to be used under conditions of poor ventilation. This product is not to be used for carpet laying.

2.3. Other hazards

 Contains no PBT and/or vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

Component	
Substance(s) not meeting the PBT criteria of REACH regulation, in accordance with Annex XIII	ethyl acetate (141-78-6), cyclohexane (110-82-7), zinc oxide (1314-13-2), 2,6-di-tert-butyl-p-cresol (128-37-0), acetone (67-64-1), butanone (78-93-3)
Substance(s) not meeting the vPvB criteria of REACH regulation, in accordance with Annex XIII	ethyl acetate (141-78-6), cyclohexane (110-82-7), zinc oxide (1314-13-2), 2,6-di-tert-butyl-p-cresol (128-37-0), acetone (67-64-1), butanone (78-93-3)

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients
3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	EC-No.: 921-024-6 REACH-no: 01-2119475514-35	$\geq 10 - < 25$	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
ethyl acetate substance with a Community workplace exposure limit	CAS-No.: 141-78-6 EC-No.: 205-500-4 EC Index-No.: 607-022-00-5 REACH-no: 01-2119475103-46	$\geq 10 - < 25$	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336 EUH066
cyclohexane substance with a Community workplace exposure limit	CAS-No.: 110-82-7 EC-No.: 203-806-2 EC Index-No.: 601-017-00-1 REACH-no: 01-2119463273-41	$\geq 10 - < 20$	Flam. Liq. 2, H225 Asp. Tox. 1, H304 Skin Irrit. 2, H315 STOT SE 3, H336 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
acetone substance with a Community workplace exposure limit	CAS-No.: 67-64-1 EC-No.: 200-662-2 EC Index-No.: 606-001-00-8 REACH-no: 01-2119471330-49	≥ 10 – < 25	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336 EUH066
butanone substance with a Community workplace exposure limit	CAS-No.: 78-93-3 EC-No.: 201-159-0 EC Index-No.: 606-002-00-3 REACH-no: 01-2119457290-43	≥ 10 – < 25	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336 EUH066
4-tert-butylphenol formaldehyde resin	CAS-No.: 25085-50-1 EC-No.: 607-533-3	≥ 5 – < 10	Skin Sens. 1, H317
2,6-di-tert-butyl-p-cresol	CAS-No.: 128-37-0 EC-No.: 204-881-4 REACH-no: 01-2119555270-46	≥ 0,1 - < 0,5	Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)
zinc oxide	CAS-No.: 1314-13-2 EC-No.: 215-222-5 EC Index-No.: 030-013-00-7 REACH-no: 01-2119463881-32	≥ 0,1 - < 0,5	Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of H- and EUH-statements: see section 16

Components - Nanoform

zinc oxide (1314-13-2)	
Name of (set of) nanoform(s)	zincoxide
Number based particle size distribution	D10 = 5nm +/- 5nm D50 = 12nm +/- 8nm D90 = 28nm +/- 8nm
Particle shape	Spherical

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

First-aid measures general	: If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Rinse skin with water/shower. Take off immediately all contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects	: May cause drowsiness or dizziness.
Symptoms/effects after skin contact	: Irritation. Repeated exposure may cause skin dryness or cracking.
Symptoms/effects after eye contact	: Eye irritation.

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

Treat symptomatically.

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SECTION 5: Firefighting measures**5.1. Extinguishing media**

- Suitable extinguishing media : Dry powder. Foam. Carbon dioxide. Water spray.
Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Highly flammable liquid and vapour.
Explosion hazard : May form flammable/explosive vapour-air mixture.
Hazardous decomposition products in case of fire : Toxic fumes may be released. Carbon monoxide. Carbon dioxide.

5.3. Advice for firefighters

- Firefighting instructions : Cool closed containers exposed to fire with water spray.
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

- General measures : Eliminate every possible source of ignition. No open flames. No smoking. Use special care to avoid static electric charges.
- For non-emergency personnel**
- Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Evacuate unnecessary personnel.
- For emergency responders**
- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- For containment : Cover spill with non combustible material, e.g.: sand, earth, vermiculite.
Methods for cleaning up : Take up liquid spill into absorbent material. Scoop absorbed substance into closing containers.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

- Additional hazards when processed : Flammable vapours may accumulate in the container. Handle empty containers with care because residual vapours are flammable.
- Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Use explosion-proof equipment. Wear personal protective equipment. Use only outdoors or in a well-ventilated area.
- Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

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7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Ground/bond container and receiving equipment. Take precautionary measures against static discharge. Store in a well-ventilated place. Keep container tightly closed. Provide local exhaust or general room ventilation.
Storage conditions	: Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.
Incompatible products	: Heat sources. Ignition sources. Strong acids. Strong bases.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection**8.1. Control parameters**

National occupational exposure and biological limit values

ethyl acetate (141-78-6)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Ethyl acetate
IOEL TWA	734 mg/m ³
	200 ppm
IOEL STEL	1468 mg/m ³
	400 ppm
Regulatory reference	COMMISSION DIRECTIVE (EU) 2017/164
cyclohexane (110-82-7)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Cyclohexane
IOEL TWA	700 mg/m ³
	200 ppm
Regulatory reference	COMMISSION DIRECTIVE 2006/15/EC
acetone (67-64-1)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Acetone
IOEL TWA	1210 mg/m ³
	500 ppm
Regulatory reference	COMMISSION DIRECTIVE 2000/39/EC
butanone (78-93-3)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Butanone
IOEL TWA	600 mg/m ³
	200 ppm
IOEL STEL	900 mg/m ³
	300 ppm
Regulatory reference	COMMISSION DIRECTIVE 2000/39/EC

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8.2. Exposure controls
Appropriate engineering controls
Appropriate engineering controls:

Ensure good ventilation of the work station. Use spark-/explosionproof appliances and lighting system. No open flames. No smoking. Avoid the build-up of electrostatic charge.

Personal protection equipment
Personal protective equipment symbol(s):

Eye and face protection
Eye protection:

Chemical goggles or safety glasses

Skin protection
Skin and body protection:

Wear suitable protective clothing

Hand protection:

Protective gloves against chemicals (EN 374)

Respiratory protection
Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Gas mask with filter type A

Environmental exposure controls
Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties
9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: light yellow.
Odour	: solvent-like.
Odour threshold	: Not available
Melting point	: Not available
Freezing point	: Not available
Boiling point	: Not available
Flammability	: Flammable liquid and vapour.
Lower explosion limit	: Not available
Upper explosion limit	: Not available
Flash point	: 37 °C (ISO 2719 A)
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available
pH	: Not available
Viscosity, kinematic	: 4705 mm ² /s (calculated value, 20°C)
Viscosity, dynamic	: 4000 mPa·s (EN ISO 2555 20°C)
Solubility	: Not available
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Density	: 0,85 g/cm ³ (EN ISO 2811-2, 20°C)
Relative density	: Not available
Relative vapour density at 20°C	: Not available
Particle characteristics	: Not applicable

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See section 3 for more information about nano properties.

9.2. Other information

Other safety characteristics

VOC content : 75 – 80 %

SECTION 10: Stability and reactivity
10.1. Reactivity

Highly flammable liquid and vapour.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information
11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral) : Not classified

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

ethyl acetate (141-78-6)

LD50 oral rat	10200 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Female, Experimental value, Oral, 14 day(s))
LD50 oral	4934 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 dermal rabbit	> 20000 mg/kg bodyweight (24 hour cuff method, 24 h, Rabbit, Male, Experimental value, Dermal, 14 day(s))

hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane

LD50 dermal rat	2800 – 3100 mg/kg bodyweight Animal: rat
LC50 Inhalation - Rat	> 25,2 mg/l air Animal: rat

cyclohexane (110-82-7)

LD50 oral rat	> 5000 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral)
LD50 dermal rabbit	> 2000 mg/kg bodyweight (Equivalent or similar to OECD 402, Rabbit, Male / female, Experimental value, Dermal, 14 day(s))
LC50 Inhalation - Rat	> 32,88 mg/l (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours), 14 day(s))

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zinc oxide (1314-13-2)	
LD50 oral rat	> 5000 mg/kg (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))
LC50 Inhalation - Rat	> 5,7 mg/l (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, Inhalation (dust), 14 day(s))
2,6-di-tert-butyl-p-cresol (128-37-0)	
LD50 oral rat	> 6000 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))
LC50 Inhalation - Rat (Dust/Mist)	> 5 mg/l/4h
acetone (67-64-1)	
LD50 oral rat	5800 mg/kg (Rat, Female, Experimental value, Oral, 14 day(s))
LD50 dermal rabbit	> 15800 mg/kg bodyweight (24 h, Rabbit, Male, Experimental value, Dermal, 14 day(s))
LC50 Inhalation - Rat	132 mg/l (3 h, Rat, Male, Experimental value, Inhalation (vapours))
butanone (78-93-3)	
LD50 oral rat	2193 mg/kg bodyweight (Equivalent or similar to OECD 423, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rabbit	> 10 ml/kg (Equivalent or similar to OECD 402, 24 h, Rabbit, Male, Experimental value, Dermal, 14 day(s))
Skin corrosion/irritation	: Causes skin irritation.
ethyl acetate (141-78-6)	
pH	No data available in the literature
cyclohexane (110-82-7)	
pH	7 (0.005 %, 24 °C)
zinc oxide (1314-13-2)	
pH	6,07 – 6,55 (< 0.01 %, 20 °C, OECD 105: Water Solubility)
2,6-di-tert-butyl-p-cresol (128-37-0)	
pH	No data available in the literature
acetone (67-64-1)	
pH	5 – 6 (20 °C)
butanone (78-93-3)	
pH	No data available in the literature
Serious eye damage/irritation	: Causes serious eye irritation.
ethyl acetate (141-78-6)	
pH	No data available in the literature
cyclohexane (110-82-7)	
pH	7 (0.005 %, 24 °C)

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zinc oxide (1314-13-2)	
pH	6,07 – 6,55 (< 0.01 %, 20 °C, OECD 105: Water Solubility)
2,6-di-tert-butyl-p-cresol (128-37-0)	
pH	No data available in the literature
acetone (67-64-1)	
pH	5 – 6 (20 °C)
butanone (78-93-3)	
pH	No data available in the literature
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
2,6-di-tert-butyl-p-cresol (128-37-0)	
NOAEL (chronic, oral, animal/male, 2 years)	25 mg/kg bodyweight Animal: rat, Animal sex: male, Remarks on results: other:Effect type: toxicity (migrated information)
Reproductive toxicity	: Not classified
acetone (67-64-1)	
LOAEL (animal/female, F0/P)	11298 mg/kg bodyweight Animal: mouse, Animal sex: female
NOAEL (animal/male, F0/P)	900 mg/kg bodyweight Animal: rat, Animal sex: male, Remarks on results: other:Generation not specified (migrated information)
STOT-single exposure	: May cause drowsiness or dizziness.
ethyl acetate (141-78-6)	
STOT-single exposure	May cause drowsiness or dizziness.
hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	
STOT-single exposure	May cause drowsiness or dizziness.
cyclohexane (110-82-7)	
STOT-single exposure	May cause drowsiness or dizziness.
acetone (67-64-1)	
STOT-single exposure	May cause drowsiness or dizziness.
butanone (78-93-3)	
STOT-single exposure	May cause drowsiness or dizziness.
STOT-repeated exposure	: Not classified
ethyl acetate (141-78-6)	
LOAEL (oral, rat, 90 days)	3600 mg/kg bodyweight Animal: rat, Guideline: EPA OTS 795.2600 (Subchronic Oral Toxicity Test)
NOAEL (oral, rat, 90 days)	900 mg/kg bodyweight Animal: rat, Guideline: EPA OTS 795.2600 (Subchronic Oral Toxicity Test)
zinc oxide (1314-13-2)	
LOAEL (dermal, rat/rabbit, 90 days)	75 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 410 (Repeated Dose Dermal Toxicity: 21/28-Day Study)
NOAEL (oral, rat, 90 days)	31,52 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)

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2,6-di-tert-butyl-p-cresol (128-37-0)	
LOAEL (oral, rat, 90 days)	100 mg/kg bodyweight Animal: rat, Animal sex: male
NOAEL (oral, rat, 90 days)	25 mg/kg bodyweight Animal: rat, Animal sex: male
Aspiration hazard	: Not classified
Pandser Bonding Adhesive	
Viscosity, kinematic	4705 mm ² /s (calculated value, 20°C)
ethyl acetate (141-78-6)	
Viscosity, kinematic	No data available in the literature
hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	
Viscosity, kinematic	0,61 mm ² /s
cyclohexane (110-82-7)	
Viscosity, kinematic	1,16 mm ² /s (26 °C, Calculated)
zinc oxide (1314-13-2)	
Viscosity, kinematic	Not applicable (solid)
2,6-di-tert-butyl-p-cresol (128-37-0)	
Viscosity, kinematic	3,47 mm ² /s (0 °C, ASTM D445: Capillary viscometer)
acetone (67-64-1)	
Viscosity, kinematic	No data available in the literature
butanone (78-93-3)	
Viscosity, kinematic	No data available in the literature

11.2. Information on other hazards
Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties

: The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

Other information

Potential adverse human health effects and symptoms

: Under normal conditions of use, no adverse effects to health have been observed

SECTION 12: Ecological information
12.1. Toxicity

Ecology - general

: Toxic to aquatic life with long lasting effects.

Hazardous to the aquatic environment, short-term (acute)

: Not classified

Hazardous to the aquatic environment, long-term (chronic)

: Toxic to aquatic life with long lasting effects.

ethyl acetate (141-78-6)	
LC50 - Fish [1]	230 mg/l (US EPA, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value, Lethal)
EC50 - Crustacea [1]	165 mg/l (48 h, Daphnia cucullata, Fresh water, Experimental value)

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ethyl acetate (141-78-6)	
NOEC (chronic)	2,4 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	
LOEC (chronic)	0,32 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	0,17 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
cyclohexane (110-82-7)	
LC50 - Fish [1]	4,5 mg/l (Equivalent or similar to OECD 203, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value, Measured concentration)
EC50 - Crustacea [1]	0,9 mg/l (Equivalent or similar to OECD 202, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)
EC50 72h - Algae [1]	3,4 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	9,317 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
zinc oxide (1314-13-2)	
LC50 - Fish [1]	0,169 mg/l (ASTM E729-88, 96 h, Oncorhynchus mykiss, Static system, Fresh water, Read-across, Zinc ion)
EC50 - Crustacea [1]	1 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Zinc ion)
2,6-di-tert-butyl-p-cresol (128-37-0)	
LC50 - Fish [1]	0,199 mg/l (ECOSAR v1.00, 96 h, Pisces, QSAR, Lethal)
EC50 - Crustacea [1]	0,48 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)
EC50 72h - Algae [1]	> 0,24 mg/l (OECD 201: Alga, Growth Inhibition Test, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Growth rate)
LOEC (chronic)	1 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	0,023 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	0,053 mg/l Test organisms (species): Oryzias latipes Duration: '42 d'
acetone (67-64-1)	
LC50 - Fish [1]	6210 – 8120 mg/l (Equivalent or similar to OECD 203, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value, Measured concentration)
LOEC (chronic)	> 79 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	≥ 79 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
butanone (78-93-3)	
LC50 - Fish [1]	2973 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Pimephales promelas, Static system, Fresh water, Experimental value, GLP)
EC50 - Crustacea [1]	308 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)
EC50 72h - Algae [1]	1972 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 96h - Algae [1]	2029 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)

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butanone (78-93-3)

ErC50 algae	1220 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)
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12.2. Persistence and degradability
Pandser Bonding Adhesive

Persistence and degradability	Not rapidly degradable
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ethyl acetate (141-78-6)

Persistence and degradability	Biodegradable in the soil, Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0,293 g O ₂ /g substance
Chemical oxygen demand (COD)	1,69 g O ₂ /g substance
ThOD	1,82 g O ₂ /g substance

hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane

Persistence and degradability	Not rapidly degradable
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cyclohexane (110-82-7)

Persistence and degradability	Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0,22 g O ₂ /g substance
ThOD	3,425 g O ₂ /g substance

zinc oxide (1314-13-2)

Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

2,6-di-tert-butyl-p-cresol (128-37-0)

Persistence and degradability	Not readily biodegradable in water.
Biochemical oxygen demand (BOD)	0,51 g O ₂ /g substance
Chemical oxygen demand (COD)	2,27 g O ₂ /g substance
ThOD	2,977 g O ₂ /g substance

acetone (67-64-1)

Persistence and degradability	Biodegradable in the soil, Biodegradable in the soil under anaerobic conditions, Readily biodegradable in water.
Biochemical oxygen demand (BOD)	1,43 g O ₂ /g substance
Chemical oxygen demand (COD)	1,92 g O ₂ /g substance
ThOD	2,2 g O ₂ /g substance

butanone (78-93-3)

Persistence and degradability	Biodegradable in the soil, Biodegradable in the soil under anaerobic conditions, Readily biodegradable in water.
Biochemical oxygen demand (BOD)	2,03 g O ₂ /g substance
Chemical oxygen demand (COD)	2,31 g O ₂ /g substance
ThOD	2,44 g O ₂ /g substance

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4-tert-butylphenol formaldehyde resin (25085-50-1)

Persistence and degradability	Not rapidly degradable
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12.3. Bioaccumulative potential
ethyl acetate (141-78-6)

BCF - Fish [1]	30 (3 day(s), Leuciscus idus, Static renewal, Experimental value)
Partition coefficient n-octanol/water (Log Pow)	0,68 (Experimental value, EPA OPPTS 830.7560, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane

Partition coefficient n-octanol/water (Log Pow)	3,4 – 5,2
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cyclohexane (110-82-7)

BCF - Fish [1]	167 l/kg (Pimephales promelas, QSAR, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	3,4 (Experimental value, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

zinc oxide (1314-13-2)

Bioaccumulative potential	Not bioaccumulative.
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2,6-di-tert-butyl-p-cresol (128-37-0)

Partition coefficient n-octanol/water (Log Pow)	5,1
Bioaccumulative potential	Potential for bioaccumulation (4 ≤ Log Kow ≤ 5).

acetone (67-64-1)

BCF - Fish [1]	0,69 (Pisces, Literature study)
Partition coefficient n-octanol/water (Log Pow)	-0,23 (Test data)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

butanone (78-93-3)

Partition coefficient n-octanol/water (Log Pow)	0,3 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 40 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil
ethyl acetate (141-78-6)

Surface tension	No data available in the literature
Ecology - soil	Low potential for adsorption in soil.

cyclohexane (110-82-7)

Surface tension	No data available in the literature
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	2,9 (log Koc, QSAR)
Ecology - soil	Low potential for adsorption in soil.

zinc oxide (1314-13-2)

Surface tension	Not applicable (solid)
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zinc oxide (1314-13-2)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	2,2 (log Koc, Literature study)
Ecology - soil	Low potential for adsorption in soil.
2,6-di-tert-butyl-p-cresol (128-37-0)	
Surface tension	Not applicable (water solubility < 1 mg/l)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	4,4 (log Koc, SRC PCKOCWIN v1.66, Calculated value)
Ecology - soil	Low potential for mobility in soil. May be harmful to plant growth, blooming and fruit formation.
acetone (67-64-1)	
Surface tension	23,3 mN/m (20 °C)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0,374 – 0,988 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Highly mobile in soil.
butanone (78-93-3)	
Surface tension	No data available in the literature
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0,654 – 1,281 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Highly mobile in soil. Slightly harmful to plants.

12.5. Results of PBT and vPvB assessment

Component	
Substance(s) not meeting the PBT criteria of REACH regulation, in accordance with Annex XIII	ethyl acetate (141-78-6), cyclohexane (110-82-7), zinc oxide (1314-13-2), 2,6-di-tert-butyl-p-cresol (128-37-0), acetone (67-64-1), butanone (78-93-3)
Substance(s) not meeting the vPvB criteria of REACH regulation, in accordance with Annex XIII	ethyl acetate (141-78-6), cyclohexane (110-82-7), zinc oxide (1314-13-2), 2,6-di-tert-butyl-p-cresol (128-37-0), acetone (67-64-1), butanone (78-93-3)

12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %.

12.7. Other adverse effects

Pandser Bonding Adhesive	
Other information	No other effects known

SECTION 13: Disposal considerations
13.1. Waste treatment methods

Regional waste regulation : Collect all waste in suitable and labelled containers and dispose according to local legislation.

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Sewage disposal recommendations : Do not discharge into drains or the environment.

Safety Data Sheet

According to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Additional information	: Flammable vapours may accumulate in the container.
Ecological waste information	: Avoid release to the environment.
European List of Waste (LoW, EC 2000/532)	: 08 04 09* - waste adhesives and sealants containing organic solvents or other dangerous substances 15 01 10* - packaging containing residues of or contaminated by dangerous substances

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID /

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
UN 1133	UN 1133	UN 1133	UN 1133	UN 1133
14.2. UN proper shipping name				
ADHESIVES	ADHESIVES	Adhesives	ADHESIVES	ADHESIVES
Transport document description				
UN 1133 ADHESIVES, 3, III, (E), ENVIRONMENTALLY HAZARDOUS	UN 1133 ADHESIVES, 3, III, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS (37°C c.c.)	UN 1133 Adhesives, 3, III, ENVIRONMENTALLY HAZARDOUS	UN 1133 ADHESIVES, 3, III, ENVIRONMENTALLY HAZARDOUS	UN 1133 ADHESIVES, 3, III, ENVIRONMENTALLY HAZARDOUS
14.3. Transport hazard class(es)				
3	3	3	3	3
				
14.4. Packing group				
III	III	III	III	III
14.5. Environmental hazards				
Dangerous for the environment: Yes	Dangerous for the environment: Yes Marine pollutant: Yes EmS-No. (Fire): F-E EmS-No. (Spillage): S-D	Dangerous for the environment: Yes	Dangerous for the environment: Yes	Dangerous for the environment: Yes
No supplementary information available				

14.6. Special precautions for user
Overland transport

Classification code (ADR)	: F1
Limited quantities (ADR)	: 5I
Excepted quantities (ADR)	: E1
Packing instructions (ADR)	: P001, IBC02, R001
Special packing provisions (ADR)	: PP1, BB4
Mixed packing provisions (ADR)	: MP19
Transport category (ADR)	: 3
Special provisions for carriage - Operation (ADR)	: S2
Tunnel restriction code (ADR)	: E

Transport by sea

Special provisions (IMDG)	: 223, 955
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Safety Data Sheet

According to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Limited quantities (IMDG)	: 5 L
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: P001, LP01
Special packing provisions (IMDG)	: PP1
IBC packing instructions (IMDG)	: IBC03
Tank instructions (IMDG)	: T2
Tank special provisions (IMDG)	: TP1
Stowage category (IMDG)	: A
Properties and observations (IMDG)	: Adhesives are solutions of gums, resins, etc., usually volatile due to the solvents. Miscibility with water depends upon their composition.

Air transport

PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y344
PCA limited quantity max net quantity (IATA)	: 10L
PCA packing instructions (IATA)	: 355
PCA max net quantity (IATA)	: 60L
CAO packing instructions (IATA)	: 366
CAO max net quantity (IATA)	: 220L
Special provisions (IATA)	: A3
ERG code (IATA)	: 3L

Inland waterway transport

Classification code (ADN)	: F1
Limited quantities (ADN)	: 5 L
Excepted quantities (ADN)	: E1
Equipment required (ADN)	: PP, EX, A
Ventilation (ADN)	: VE01
Number of blue cones/lights (ADN)	: 0

Rail transport

Classification code (RID)	: F1
Limited quantities (RID)	: 5L
Excepted quantities (RID)	: E1
Packing instructions (RID)	: P001, IBC02, R001
Special packing provisions (RID)	: PP1, BB4
Mixed packing provisions (RID)	: MP19
Transport category (RID)	: 3
Colis express (express parcels) (RID)	: CE4
Hazard identification number (RID)	: 33

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

Safety Data Sheet

According to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU-Regulations****REACH Annex XVII (Restriction List)**

EU restriction list (REACH Annex XVII)		
Reference code	Applicable on	Entry title or description
3(a)	Pandser Bonding Adhesive ; ethyl acetate ; hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane ; cyclohexane ; acetone ; butanone	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F
3(b)	Pandser Bonding Adhesive ; ethyl acetate ; hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane ; cyclohexane ; acetone ; butanone ; 4-tert-butylphenol formaldehyde resin	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10
3(c)	Pandser Bonding Adhesive ; hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane ; cyclohexane	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1
57.	cyclohexane	Cyclohexane

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains substance(s) listed on the REACH Candidate List < 0.1% or SCL.

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (2024/590)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 2024/590 on substances that deplete the ozone layer)

Council Regulation (EC) for the control of dual-use items

Contains no substance subject to the COUNCIL REGULATION (EC) for the control of dual-use items

VOC Directive (2004/42)

VOC content : 75 – 80 %

Seveso Directive (Disaster Risk Reduction)

Seveso Additional information : E2; P5C

Explosives Precursors Regulation (EU 2019/1148)

Contains substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

ANNEX II REPORTABLE EXPLOSIVES PRECURSORS

Safety Data Sheet

According to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

List of substances on their own or in mixtures or in substances for which suspicious transactions and significant disappearances and thefts are to be reported within 24 hours.

Name	CAS-No.	Combined Nomenclature code (CN)	Combined Nomenclature code for mixture without constituents which would determine classification under another CN code
Acetone	67-64-1	2914 11 00	ex 3824 99 92

Drug Precursors Regulation (EC 273/2004)

Contains substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

Name	CN designation	CAS-No.	CN code	Category, Subcategory	Threshold	Annex
Acetone		67-64-1	2914 11 00	Category 3		Annex I
Methylethylketone	Butanone	78-93-3	2914 12 00	Category 3		Annex I

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information
Indication of changes:

Label elements. Composition/information on ingredients.

Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration

Safety Data Sheet

According to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Abbreviations and acronyms:

OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disruptor

Full text of H- and EUH-statements:

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 2	Hazardous to the aquatic environment – Chronic Hazard, Category 2
Asp. Tox. 1	Aspiration hazard, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Narcosis
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.

Safety Data Sheet

According to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Flam. Liq. 3	H226	On basis of test data
Skin Irrit. 2	H315	Calculation method
Eye Irrit. 2	H319	Calculation method
Skin Sens. 1	H317	Calculation method
STOT SE 3	H336	Calculation method
Aquatic Chronic 2	H411	Calculation method

Safety Data Sheet (SDS), EU-2025-2

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



Berdal Rubber & Plastics BV

Bedrijvenpark Twente 193

7602 KG Almelo

The Netherlands

+31(0)546 - 579 582

WWW.PANDSER.COM

MEMBER OF THE BERDAL FAMILY