

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

Product form	: Substance
Trade name	: MOWITAL® SB
Chemical name	: Polyvinyl butyral
CAS-No.	: 68648-78-2 or 63148-65-2
SDS Number	: 200004
Synonyms	: SB 70 HH
Product group	: Trade product

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

Main use category	: For industrial use only
Use of the substance/mixture	: Temporary binder for ceramics; Coating; Adhesives; 3D printing; Additive/binder for primer, Printing ink

1.2.2. Uses advised against

Restrictions on use	: Unknown
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1.3. Details of the supplier of the safety data sheet**Manufacturer/Supplier**

Kuraray Europe GmbH
Philipp-Reis-Str. 4
D-65795 Hattersheim
Germany
Telephone: +49-69-305-85300
Technical Contact: +49-69-305-13345
E-mail: product-safety@kuraray.com

1.4. Emergency telephone number

Emergency number	: +44 20 35147487 or 0 800 680 0425 - Access code: 334674
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SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification according to GB CLP (SI 2019:720 as amended)**

Not classified

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements**Labelling according to GB CLP (SI 2019:720 as amended)**

No labelling applicable

2.3. Other hazards

Other hazards which do not result in classification	: Fine particles can form explosive mixtures with air. Avoid creating or spreading dust. Difficult to ignite. Possible precautions against a dust explosion recommended.
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This product does not contain substances at $\geq 0.1\%$ that meet the PBT criteria of UK REACH regulation, annex XIII.

This product does not contain substances at $\geq 0.1\%$ that meet the vPvB criteria of UK REACH regulation, annex XIII.

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According to REACH Regulation (EC) No 1907/2006, as retained and amended in UK law.

The substance is not included in the list established in accordance with Article 59(1) of UK REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in GB BPR and GB PPP.

SECTION 3: Composition/information on ingredients

3.1. Substances

Name : MOWITAL® SB
CAS-No. : 68648-78-2 or 63148-65-2

Name	Product identifier	%	Classification according to GB CLP (SI 2019:720 as amended)
Polyvinyl butyral	CAS-No.: 68648-78-2; 63148-65-2	> 97.5	Not classified
Water (Impurity)	CAS-No.: 7732-18-5 EC-No.: 231-791-2	< 2.4	Not classified
n-Butyraldehyde (Impurity)	CAS-No.: 123-72-8 EC-No.: 204-646-6	< 0.05	Flam. Liq. 2, H225 Eye Irrit. 2, H319
Sodium chloride (Impurity)	CAS-No.: 7647-14-5 EC-No.: 231-598-3	< 0.05	Not classified

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

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : If you feel unwell, seek medical advice.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Call a doctor if symptoms occur or persist.
First-aid measures after skin contact : IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact : Rinse eyes with water as a precaution. Do not rub the eye. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion : Rinse mouth thoroughly with water. If the quantity swallowed is significant : Call a physician immediately or Poison centre.

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

Symptoms/effects : Irritation of the respiratory tract, skin, eyes and mucous membranes possible.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water fog. Water spray. Dry powder. Foam. Carbon dioxide (CO₂). When using the extinguishing agent, make sure no dust is formed in the air.
Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

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5.2. Special hazards arising from the substance or mixture

- Fire hazard : Could burn but do not ignite readily. The product may form dust and build up electrostatic charges, which may produce an electric spark (ignition source). Proper grounding procedures to avoid static electricity should be followed.
- Reactivity in case of fire : Avoid formation of dust. Risk of dust explosion if enriched with fine dust in the presence of air.
- Hazardous decomposition products in case of fire : In the event of fire, harmful gases may be produced.

5.3. Advice for firefighters

- Firefighting instructions : Use ordinary fire-fighting measures, taking into account the hazards from other materials involved. Move containers away from the fire area if this can be done without risk.
- 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

6.1.1. For non-emergency personnel

- Measures in case of dust release : Avoid inhalation of dust and contact with skin and eyes.

6.1.2. 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. Environmental officer must be informed of all releases.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Avoid formation of dust. Pick up dust with a vacuum cleaner with HEPA filter. Do not use compressed air for cleaning.
- Other information : Dispose of waste according to applicable legislation.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". See Section 13 for disposal information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Avoid creating or spreading dust. The material must not be deposited in large quantities, especially on horizontal surfaces, as it could become released into the air from there, form flammable dust clouds and contribute to secondary explosions. Any unavoidable deposit of dust must be regularly removed. Prevent build-up of electrostatic charges (e.g. by grounding). Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Provide appropriate exhaust ventilation at places of dust forming. Use only in well-ventilated areas. Observe recognised industrial hygiene measures. Avoid prolonged and repeated contact with skin.
- Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in a well-ventilated place. Keep cool. Store in the original container well sealed.

7.3. Specific end use(s)

Temporary binder for ceramics. Additive/binder for primer. Varnish. coatings. Printing ink. For industrial use only.

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

MOWITAL® SB (68648-78-2 or 63148-65-2)	
United Kingdom - Occupational Exposure Limits	
Local name	Dust
WEL TWA (OEL TWA)	4 mg/m ³ respirable fraction 10 mg/m ³ inhalable fraction
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

8.1.2. Recommended monitoring procedures

Monitoring methods	
Monitoring methods	Follow standard monitoring procedures.

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment:

Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the protective equipment.

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection.:

Safety glasses (EN 166).

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing.

Hand protection:

In case of repeated or prolonged contact wear gloves.

Hand protection					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	0.12		EN ISO 374

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8.2.2.3. Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. In case of dust: Wear dust mask with filter type P2.

8.2.2.4. Thermal hazards

Thermal hazard protection:

Heatproof clothing.

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

Other information:

Provide appropriate exhaust ventilation at places of dust forming. Ensure adequate air ventilation. Degree of ventilation must be adapted to the conditions. Where appropriate, use process chambers, local exhaust systems or other structural measures to control airborne concentrations to keep them below recommended exposure limits. If no exposure limits have been set, keep concentrations in the air at an acceptable level. If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL (occupational exposure limit), suitable respiratory protection must be worn.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Powders
Colour	: Colourless, Appearance white
Odour	: Odourless
Odour threshold	: Not available
pH	: Not available
pH solution	: Not available
Melting point	: Not available
Freezing point	: Not available
Boiling point	: Not available
Flash point	: Not applicable
Explosive limits	: Not applicable
Lower explosion limit	: No data available
Upper explosion limit	: No data available
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Relative vapour density at 20°C	: Not applicable
Relative density	: Not available
Density	: Not available
Solubility	: Not available
Partition coefficient n-octanol/water (Log Kow)	: Not available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: Not available
Viscosity, kinematic	: Not applicable
Explosive properties	: Not available

9.2. Other information

Dust explosion category	: St 1 - Weak explosion
VOC content	: < 0.1 %
Additional information	: Vicat softening temperature 55 - 63 °C DIN EN ISO 306

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

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According to REACH Regulation (EC) No 1907/2006, as retained and amended in UK law.

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

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Strong acids. Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon oxides (CO, CO₂).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation) : Not classified (Based on available data, the classification criteria are not met)

n-Butyraldehyde (123-72-8)

LD50 oral rat	≈ 5890 mg/kg bodyweight Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 dermal rabbit	1046 mg/kg
LC50 Inhalation - Rat	> 5.46 mg/l air Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)

Sodium chloride (7647-14-5)

LD50 oral rat	3000 mg/kg Source: ChemIDplus
LD50 dermal rabbit	> 10000 mg/kg bodyweight
LC50 Inhalation - Rat (Dust/Mist)	> 10.5 mg/l Source: Corporate Solution From Thomson Micromedex

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met)

Water (7732-18-5)

pH	7
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Serious eye damage/irritation : Not classified (Based on available data, the classification criteria are not met)

Water (7732-18-5)

pH	7
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Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)
STOT-single exposure : Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

MOWITAL® SB (68648-78-2 or 63148-65-2)

Viscosity, kinematic	Not applicable
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Other information

Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : The substance is not included in the list established in accordance with Article 59(1) of UK REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in GB BPR and GB PPP

Other information

Potential adverse human health effects and symptoms : Existing skin and respiratory conditions, including skin inflammation, asthma and chronic lung disease may be exacerbated by exposure

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified (Based on available data, the classification criteria are not met)

Hazardous to the aquatic environment, long-term (chronic) : Not classified (Based on available data, the classification criteria are not met)

n-Butyraldehyde (123-72-8)	
LC50 - Fish	25.8 mg/l Test organisms (species): Pimephales promelas
Sodium chloride (7647-14-5)	
LC50 - Fish	5840 mg/l Test organisms (species): Lepomis macrochirus
LOEC (chronic)	441 mg/l Test organisms (species): Daphnia pulex Duration: '21 d'
NOEC (chronic)	314 mg/l Test organisms (species): Daphnia pulex Duration: '21 d'

12.2. Persistence and degradability

MOWITAL® SB (68648-78-2 or 63148-65-2)	
Persistence and degradability	No data is available on the degradability of this product.

12.3. Bioaccumulative potential

MOWITAL® SB (68648-78-2 or 63148-65-2)	
Bioaccumulative potential	No data available.

Water (7732-18-5)	
Partition coefficient n-octanol/water (Log Pow)	-1.38
n-Butyraldehyde (123-72-8)	
Partition coefficient n-octanol/water (Log Pow)	0.88

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

MOWITAL® SB (68648-78-2 or 63148-65-2)	
This product does not contain substances at $\geq 0.1\%$ that meet the PBT criteria of UK REACH regulation, annex XIII	
This product does not contain substances at $\geq 0.1\%$ that meet the vPvB criteria of UK REACH regulation, annex XIII	

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12.6. Other adverse effects

Other adverse effects : No other adverse effects on the environment (e.g. ozone depletion, photochemical ozone formation potential, global warming potential) are expected from this constituent.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional waste regulation : Disposal must be done according to official regulations.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

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

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name				
Not regulated as dangerous goods.	Not regulated as dangerous goods.	Not regulated as dangerous goods.	Not regulated as dangerous goods.	Not regulated as dangerous goods.
Transport document description				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Dangerous for the environment: False	Dangerous for the environment: False Marine pollutant: No	Dangerous for the environment: False	Dangerous for the environment: False	Dangerous for the environment: False
No supplementary information available				

14.6. Special precautions for user

Overland transport

No data available

Transport by sea

No data available

Air transport

No data available

Inland waterway transport

No data available

Rail transport

No data available

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14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

UK REACH Annex XVII (Restriction List)

UK restriction list (REACH Annex XVII)

Reference code	Applicable on	Entry title or description
3(a)	n-Butyraldehyde	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)	n-Butyraldehyde	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
40.	n-Butyraldehyde	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in the GB classification and labelling list or not.

UK REACH Annex XIV (Authorisation List)

This substance is not listed on UK REACH Annex XIV (Authorisation List)

UK REACH Candidate List (SVHC)

Not listed on the UK REACH Candidate List

GB PIC regulation (Prior Informed Consent)

This substance is not listed on the GB PIC List

POP Regulation (Persistent Organic Pollutants)

This substance is not listed on the GB POP List

Ozone Regulation (S.I. No. 168 of 2015)

This substance is not listed on the GB Ozone Depletion List

Control of Poisons and Explosives Precursors Act

This substance is not listed as a reportable poison on the Control of Poisons and Explosives Precursors Regulations

This substance is not listed as a regulated poison on the Control of Poisons and Explosives Precursors Regulations

This substance is not listed as a reportable explosive precursor on the Control of Poisons and Explosives Precursors Regulations

This substance is not listed as a regulated poison on the Control of Poisons and Explosives Precursors Regulations

Drug Precursors Regulation (273/2004)

This substance is not listed on the GB Drug Precursors List

15.1.2. Other Information

VOC content : < 0.1 %

15.2. Chemical safety assessment

No additional information available

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SECTION 16: Other information

Data sources : Supplier's safety documents. Source: European Chemicals Agency, <http://echa.europa.eu/>.

Full text of H- and EUH-statements:	
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.

Safety Data Sheet (SDS), UK

Disclaimer: The accuracy of this information is not guaranteed. The information is believed to be accurate. This information must be used to make an independent determination of the measures necessary to ensure the safety of workers and the environment. Kuraray cannot anticipate all conditions under which this information and the product or other manufacturer's products may be used in conjunction with their product. It is the responsibility of the user to ensure safe conditions when handling, storing and disposing of the product and to accept liability for loss, injury, damage or expense due to improper use. The information in this data sheet is based on current knowledge.