

SECTION 1: Identification

1.1. GHS Product identifier

Product form	: Substance
Trade name	: Mowital® B
Chemical name	: polyvinyl butyral
Type of product	: Polymer
CAS-No.	: 68648-78-2 or 63148-65-2
Product code	: 200002

1.2. Other means of identification

No additional information available

1.3. Recommended use of the chemical and restrictions on use

Recommended use	: Industrial use Temporary binder for ceramics Adhesives Coating 3d printing Printing inks
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1.4. Supplier's details

Manufacturer/Supplier

Kuraray Europe GmbH
Philipp-Reis-Str. 4
DE- 65795 Hattersheim am Main
Germany
T +49 (0)69 305 35835; access code for 3E Company: 334674
product-safety@kuraray.com

Email competent person

product-safety@kuraray.com

Importer

Kuraray Asia Pacific Pte. Ltd.
331 North Bridge Road
188720 #18-02 Odeon Towers
Singapore
T +65 68677088 Ext. 201; +65 68677108

1.5. Emergency phone number

Emergency number : +65-3158-6734 (Access Code: 334674)

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification according to the United Nations GHS

Not classified

Adverse physicochemical, human health and environmental effects : To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice

2.2. GHS Label elements, including precautionary statements

Labelling according to the United Nations GHS

No labelling applicable

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : Fine particles may form explosive mixtures with air. Prevent dust accumulation to minimize explosion hazard. This material does not ignite easily; however, feasible precautions against dust explosion are recommended.

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SECTION 3: Composition/information on ingredients

3.1. Substances

Chemical name : polyvinyl butyral
CAS-No. : 68648-78-2 or 63148-65-2
Product identifiers: See section 1.1

Name	Product identifier	%	Classification according to the United Nations GHS
polyvinyl butyral (Main constituent)	CAS-No.: 63148-65-2	> 97.5	Not classified
water (Impurity)	CAS-No.: 7732-18-5 EC-No.: 231-791-2	< 2.4	Not classified
butyraldehyde (Impurity)	CAS-No.: 123-72-8 EC-No.: 204-646-6 EC Index-No.: 605-006-00-2	< 0.05	Flammable liquids, Category 2, H225 Serious eye damage/eye irritation, Category 2B, H320 Hazardous to the aquatic environment – Acute Hazard, Category 3, H402
sodium chloride (Impurity)	CAS-No.: 7647-14-5 EC-No.: 231-598-3	< 0.05	Acute toxicity (oral), Category 5, H303

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of necessary first-aid measures

First-aid measures general : In all cases of doubt, or when symptoms persist, seek medical attention. Contact with dust: Irritating to eyes and mucous membranes.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact : Wash skin with plenty of water.
First-aid measures after eye contact : Rinse eyes with water as a precaution.
First-aid measures after ingestion : Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms/effects, acute and delayed

Symptoms/effects : Irritation of the respiratory tract, skin, eyes and mucous membranes possible.
Potential adverse human health effects and symptoms : Dust may irritate the respiratory tract, skin and eyes.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire. Water haze. Foam. Dry powder. Carbon dioxide.
Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

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5.2. Specific hazards arising from the chemical

- Fire hazard : The product is not flammable. 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.
- Hazardous decomposition products in case of fire : Toxic fumes may be released. Carbon dioxide. Carbon monoxide.

5.3. Special protective actions for fire-fighters

- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
- Other information : Do not allow run-off from fire fighting to enter drains or water courses. Disposal must be done according to official regulations. Fine dust dispersed in air may ignite. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. The product is not flammable.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid contact with skin, eyes and clothing. Concerning personal protective equipment to use, see section 8.

6.1.1. For non-emergency personnel

- Emergency procedures : Ventilate spillage area.

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 manager must be informed of all releases.

6.3. Methods and materials for containment and cleaning up

- Methods for cleaning up : Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal. Avoid dust formation. Collect dust or particulates using a vacuum cleaner with a HEPA filter.
- Other information : Disposal must be done according to official regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. Minimize dust generation/release and accumulation. 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.
- Technical measures : Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.
- 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. Keep container tightly closed. Store in original tightly closed container.
- Incompatible materials : Keep away from strong acids and strong oxidizers.

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment (PPE)

Hand protection : In case of repeated or prolonged contact wear gloves. ISO 374-1. Choosing the proper glove is a decision that depends not only on the type of material, but also on other quality features, which differ for each manufacturer. Please follow the instructions related to the permeability and the penetration time provided by the manufacturer. Gloves must be replaced after each use and whenever signs of wear or perforation appear

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Nitrile rubber	Nitrile rubber	6 (> 480 minutes)	0,12		EN ISO 374

Eye protection : Sealed safety goggles. ISO 16321-1

Skin and body protection : Wear suitable protective clothing. EN ISO 13688

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment. Dust production: dust mask with filter type P2. EN 143. Short term exposure. Breathing equipment is only to be used in order to handle the residual risk of short term jobs if all other risk minimizing measures have been carried out e.g. retention and/or local exhaust

8.4. Exposure limit values for the other components

No additional information available

SECTION 9: Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state : Solid
Appearance : Powder
Colour : colourless.
Odour : odourless.
Odour threshold : Not available
Melting point : Not available
Freezing point : Not applicable
Boiling point : Not available
Flammability : Not available
Lower explosion limit : Not applicable
Upper explosion limit : Not applicable
Flash point : Not applicable
Auto-ignition temperature : Not applicable.
Decomposition temperature : Not available
pH : Not available
pH solution : Not available
Viscosity, kinematic (calculated value) (40 °C) : Not applicable
Partition coefficient n-octanol/water (Log Kow) : Not available
Vapour pressure : Not applicable
Vapour pressure at 50°C : Not available
Density : Not available
Relative density : Not specifically applicable
Relative vapour density at 20°C : Not applicable
Relative gas density : Not specifically applicable
Solubility : Not available
Viscosity, dynamic : Not applicable
Particle size : Not available

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9.2. Data relevant with regard to physical hazard classes (supplemental)

Explosive properties	: Product is not explosive
Oxidising properties	: Non oxidizing
Relative evaporation rate (butylacetate=1)	: Not applicable
VOC content	: < 2.5 %
Additional information	: Vicat softening temperature 50 - 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.

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

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid creating or spreading dust.

10.5. Incompatible materials

Strong acids. Strong oxidizing agent.

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 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)
Skin corrosion/irritation	: Not classified (Based on available data, the classification criteria are not met)
Serious eye damage/irritation	: Not classified (Based on available data, the classification criteria are not met)
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
Potential adverse human health effects and symptoms	: Dust may irritate the respiratory tract, skin and eyes.

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)

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12.2. Persistence and degradability

polyvinyl butyral (68648-78-2 or 63148-65-2)

Persistence and degradability	No additional information available
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butyraldehyde (123-72-8)

Persistence and degradability	Readily biodegradable.
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Biodegradation	46 – 57 % (5 d; (OECD 301C method))
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sodium chloride (7647-14-5)

Persistence and degradability	Not applicable.
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12.3. Bioaccumulative potential

polyvinyl butyral (68648-78-2 or 63148-65-2)

Bioaccumulative potential	No additional information available
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butyraldehyde (123-72-8)

Bioconcentration factor (BCF REACH)	3.162 (calculated value)
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Partition coefficient n-octanol/water (Log Kow)	1.3 (20 °C; pH 4.4 - 4.7; (OECD 107 method))
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sodium chloride (7647-14-5)

Partition coefficient n-octanol/water (Log Kow)	-3
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12.4. Mobility in soil

polyvinyl butyral (68648-78-2 or 63148-65-2)

Mobility in soil	No additional information available
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butyraldehyde (123-72-8)

Surface tension	70 mN/m (20 °C; 1 g/L; (OECD 115 method))
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sodium chloride (7647-14-5)

Ecology - soil	Not applicable.
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12.5. Other adverse effects

Ozone	: Not classified
Other adverse effects	: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods	: Disposal must be done according to official regulations. Do not discharge into drains or the environment. Do not dispose of with domestic waste.
Product/Packaging disposal recommendations	: Recycle or dispose of in compliance with current legislation.

SECTION 14: Transport information

In accordance with UN RTDG / IMDG / IATA

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UN RTDG	IMDG	IATA
14.1. UN number		
Not regulated for transport		
14.2. UN Proper Shipping Name		
Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)		
Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable
14.4. Packing group		
Not applicable	Not applicable	Not applicable
14.5. Environmental hazards		
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No
No supplementary information available		

14.6. Special precautions for user

UN RTDG

No data available

IMDG

No data available

IATA

No data available

14.7. Transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations specific for the product in question

Other information, restriction and prohibition regulations : A safety data sheet is not required for this product in accordance with national legal requirements. This document has been created on a voluntary basis following the format of the safety data sheet.

SECTION 16: Other information

Issue date : 06/03/2023
Revision date : 06/03/2023

Data sources : Information provided by the manufacturer.
Department issuing data specification sheet: : KFT Chemieservice GmbH
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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
CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL - Derived Minimal Effect level
DNEL - Derived-No Effect Level
EC50 - Median effective concentration
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
OECD - Organisation for Economic Co-operation and Development
PBT - Persistent Bioaccumulative Toxic
PNEC - Predicted No-Effect Concentration
REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS - Safety Data Sheet
STP - Sewage treatment plant
TLM - Median Tolerance Limit
vPvB - Very Persistent and Very Bioaccumulative

Full text of H-statements:	
H225	Highly flammable liquid and vapour
H303	May be harmful if swallowed
H320	Causes eye irritation
H402	Harmful to aquatic life

KFT SDS UN 01

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.