SECTION 1: Identification

1.1. 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
Synonyms	:	B 14 S, B 16 H, B 20 H, B 30 H, B 30 HH, B 30 T, B 45 H, B 60 H, B 60 HH, B 60 T, B 75 H

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

Recommended use	:	Industrial use Temporary binder for ceramics Adhesives Coating 3d printing Printing inks

1.3. Supplier's details

Manufacturer/Supplier
Kuraray Europe GmbH
Philipp-Reis-Str. 4
65795 Hattersheim am Main
Germany
T +49-69-305-85300
Technical contact: +49-69-305-13345
product-safety@kuraray.com

Email competent person
product-safety@kuraray.com

1.4. Emergency telephone number

Emergency number	:	+1 760 476 3959 (Access Code: 334674)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to the United Nations GHS

Not classified

2.2. Label elements

Labelling according to the United Nations GHS

No labelling applicable

2.3. Other hazards

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.
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

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	%
Polyvinylbutyral (Main constituent)	CAS-No.: 63148-65-2	> 97,5
water (Impurity)	CAS-No.: 7732-18-5	< 2,4
butyraldehyde (Impurity)	CAS-No.: 123-72-8	< 0,05
sodium chloride (Impurity)	CAS-No.: 7647-14-5	< 0,05

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : In all cases of doubt, or when symptoms persist, seek medical attention.
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 and effects, both 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 any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire. Water haze. Foam. Dry powder. Carbon dioxide.
Unsuitable extinguishing media : Strong water jet.

5.2. Special hazards arising from the substance or mixture

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.
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 : Toxic fumes may be released. Carbon dioxide. Carbon monoxide.

5.3. Advice for firefighters

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.

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 material 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.

Information about storage in one common storage facility : Keep away from food, drink and animal feeding stuffs.

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. Information on basic physical and chemical properties

Physical state : Solid
Appearance : Powder.
Colour : colorless, appearance white.
Odour : odourless.
Odour threshold : No data available
pH : No data available
pH solution : No data available
Relative evaporation rate (butylacetate=1) : Not applicable
Relative evaporation rate (ether=1) : No data available
Melting point : No data available
Freezing point : Not applicable
Boiling point : No data available
Flash point : Not applicable
Auto-ignition temperature : Not applicable.
Decomposition temperature : No data available
Flammability : No data available
Vapour pressure : Not applicable
Vapour pressure at 50°C : No data available
Relative vapour density at 20°C : Not applicable
Relative density : Not specifically applicable
Relative density of saturated gas/air mixture : No data available
Density : No data available
Relative gas density : Not specifically applicable
Solubility : No data available
Partition coefficient n-octanol/water (Log Pow) : No data available
Partition coefficient n-octanol/water (Log Kow) : No data available
Viscosity, kinematic : Not applicable
Viscosity, dynamic : Not applicable
Explosive properties : Product is not explosive.
Oxidising properties : Non oxidizing.
Explosive limits : Dust explosion category: St 1 - Weak explosion
Lower explosion limit : No data available
Upper explosion limit : No data available

9.2. Other information

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

No additional information available

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

polyvinyl butyral (68648-78-2 or 63148-65-2)	
Viscosity, kinematic	Not applicable

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)

12.2. Persistence and degradability

polyvinyl butyral (68648-78-2 or 63148-65-2)	
Persistence and degradability	No additional information available
butyraldehyde (123-72-8)	
Persistence and degradability	Readily biodegradable.
Biodegradation	46 – 57 % (5 d; (OECD 301C method))
sodium chloride (7647-14-5)	
Persistence and degradability	Not applicable.

12.3. Bioaccumulative potential

polyvinyl butyral (68648-78-2 or 63148-65-2)	
Bioaccumulative potential	No additional information available
butyraldehyde (123-72-8)	
Bioconcentration factor (BCF REACH)	3,162 (calculated value)
Partition coefficient n-octanol/water (Log Pow)	1,3 (20 °C; pH 4.4 - 4.7; (OECD 107 method))
sodium chloride (7647-14-5)	
Partition coefficient n-octanol/water (Log Pow)	-3

12.4. Mobility in soil

polyvinyl butyral (68648-78-2 or 63148-65-2)	
Mobility in soil	No additional information available
butyraldehyde (123-72-8)	
Surface tension	70 mN/m (20 °C; 1 g/L; (OECD 115 method))
Partition coefficient n-octanol/water (Log Pow)	1,3 (20 °C; pH 4.4 - 4.7; (OECD 107 method))
sodium chloride (7647-14-5)	
Partition coefficient n-octanol/water (Log Pow)	-3
Ecology - soil	Expected to be highly mobile in soil.

12.5. Other adverse effects

Ozone : Not classified
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. 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 SANS / IMDG / IATA

SANS	IMDG	IATA
14.1. UN number		
Not regulated for transport		
14.2. 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

SANS
No data available

IMDG
No data available

IATA
No data available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

No additional information available

SECTION 16: Other information

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Data sources : Information provided by the manufacturer.

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
Other information	:	A safety data sheet is not required for this product. This Product Safety Information Sheet has been created on a voluntary basis.

KFT SDS ZA 00

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.