

SECTION 1: Identification of the substance or mixture and of the supplier**1.1. Product identifier**

Product form	: Substance
Trade name	: Mowital® BA
Chemical name	: polyvinyl butyral acetal
Synonyms	: BA 20 S, BA 55 HH
Type of product	: Polymer
CAS-No.	: 70775-95-0
Product code	: 200003

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

Recommended use	: Industrial use Temporary binder for ceramics; Coating; Adhesives; 3D Printing; Additive/binder for primer; Printing ink
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1.3. Details of the supplier of the safety data sheet**Manufacturer**

Kuraray Europe GmbH
Philipp-Reis-Str. 4 Hattersheim am Main 65795 Germany
T +49 69 305-85300

Importer

Kuraray Asia Pacific Pte. Ltd.
250 North Bridge Road #10-01/02 Raffles City Tower 179101 Singapore
T +65 6337-4123
<http://kuraray.com.sg/>

1.4. Emergency telephone number

Emergency number	: +81-3689-08677 (Access Code: 334674)
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SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification according to MOI notification B.E. 2555 (2012)**

Not classified as a hazardous chemical

2.2. Label elements**Labelling according to MOI notification B.E. 2555 (2012)**

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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SECTION 3: Composition/information on ingredients**3.1. Substances**

Comments	: > 97.5 % Polyvinyl butyral acetal (CAS: 70775-95-0)
Chemical name	: polyvinyl butyral acetal
CAS-No.	: 70775-95-0

Name	Product identifier	%	Classification according to MOI notification B.E. 2555 (2012)
polyvinyl butyral acetal (Main constituent)	CAS-No.: 70775-95-0	> 97.5	Not classified

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Name	Product identifier	%	Classification according to MOI notification B.E. 2555 (2012)
water (Impurity)	CAS-No.: 7732-18-5	< 2.4	Not classified
sodium chloride (Impurity)	CAS-No.: 7647-14-5	< 0.05	Acute Tox. 5 (Oral), H303
butyraldehyde (Impurity)	CAS-No.: 123-72-8	< 0.05	Flam. Liq. 2, H225 Eye Irrit. 2, H319 Aquatic Acute 3, H402

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

Other medical advice or treatment	: Treat symptomatically.
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SECTION 5: Fire fighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Use extinguishing media appropriate for surrounding fire. Water spray. Dry powder. Foam.
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	: 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. Special protective actions for fire-fighters

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.
Other information	: Do not allow run-off from fire fighting to enter drains or water courses. Disposal must be done according to official regulations.

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According to the MOI Notification B.E. 2555 (2012)

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. 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

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. Pick up dust with a vacuum with a HEPA filter. Do not use compressed air for cleaning.

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. 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 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 equipment

8.1. Control parameters

No additional information available

Exposure limit values for the other components

No additional information available

8.2. Monitoring

No additional information available

8.3. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

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8.4. Personal protective equipment

Hand protection	: In case of repeated or prolonged contact wear gloves. Nitrile rubber. 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
Eye protection	: Wear closed safety glasses. 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
Environmental exposure controls	: Avoid release to the environment.

SECTION 9: Physical and chemical properties

Physical state	: Solid
Appearance	: Powder.
Colour	: colourless, appearance white
Odour	: odourless
Odour threshold	: No additional information available
pH	: No additional information available
Melting point, Freezing point	: Freezing point: Not applicable
Boiling point	: No data available
Flash point	: Not applicable
Auto-ignition temperature	: No data available
Flammability	: No additional information available
Vapour pressure	: Vapour pressure: Not applicable
Evaporation rate	: Relative evaporation rate (butylacetate=1): Not applicable
Explosive limits	: No additional information available
Explosive properties	: Product is not explosive.
Minimum ignition energy	: No data available
Solubility	: No additional information available
Density	: No additional information available
Relative density	: No additional information available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: Not applicable
Oxidising properties	: Non oxidizing.
VOC content	: < 2.5 %
Additional information	: Vicat softening temperature 75 - 85 °C DIN EN ISO 306
Dust explosion category	: St 1 - Weak explosion

SECTION 10: Stability and reactivity

Chemical stability	: Stable under normal conditions.
Conditions to avoid	: None under recommended storage and handling conditions
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Incompatible materials	: Strong acids. Strong oxidizing agent.
Possibility of hazardous reactions	: No dangerous reactions known under normal conditions of use.
Reactivity	: The product is non-reactive under normal conditions of use, storage and transport.

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)

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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 acetal (70775-95-0)

Viscosity, kinematic	Not applicable
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SECTION 12: Ecological information

12.1. Ecotoxicity

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 acetal (70775-95-0)

Persistence and degradability	No data available.
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sodium chloride (7647-14-5)

Persistence and degradability	Not applicable.
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butyraldehyde (123-72-8)

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

12.3. Bioaccumulative potential

polyvinyl butyral acetal (70775-95-0)

Bioaccumulative potential	No additional information available
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sodium chloride (7647-14-5)

Partition coefficient n-octanol/water (Log Pow)	-3
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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))

12.4. Mobility in soil

polyvinyl butyral acetal (70775-95-0)

Mobility in soil	No additional information available
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sodium chloride (7647-14-5)

Partition coefficient n-octanol/water (Log Pow)	-3
Ecology - soil	Expected to be highly mobile in soil.

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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))

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. Waste treatment 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

IMDG	IATA	UNRTDG
14.1. UN number		
Not regulated for transport		
Not applicable	Not applicable	Not applicable
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 Marine pollutant: No	Dangerous for the environment: 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 Annex II of MARPOL 73/78 and the IBC Code

Not applicable

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SECTION 15: Regulatory information

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

No additional information available

15.2. International agreements

Regional legislation

Australia AICS	: Yes
Canada DSL	: Yes
Canada NDSL	: No
China IECSC	: Yes
EU EINECS	: No
EU NLP	: No
Korea ECL	: Yes
US TSCA Active	: Yes
US TSCA Inactive	: No

SECTION 16: Other information

Version	: 1.00
Issue date	: 9/7/2023
Revision date	: 9/7/2023

Department issuing data specification sheet: : KFT Chemieservice GmbH
Im Leuschnerpark 3
D-64347 Griesheim

Phone: +49 6155-8981-400
Fax: +49 6155 8981-500
SDS Service: +49 6155 8981-522

Contact person : Dr. Christian Rank

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

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According to the MOI Notification B.E. 2555 (2012)

Full text of H-statements:	
Acute Tox. 5 (Oral)	Acute toxicity (oral), Category 5
Aquatic Acute 3	Hazardous to the aquatic environment – Acute Hazard, Category 3
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
H225	Highly flammable liquid and vapour
H303	May be harmful if swallowed
H319	Causes serious eye irritation
H402	Harmful to aquatic life

KFT SDS TH 01 - Version 22.2

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.