

SECTION 1 Chemical product and company identification

Chemical Chinese name	: 聚乙烯醇缩丁醛
Chemical English name	: Polyvinyl butyral
Synonyms	: SB 70 HH
Product code	: 200004
Name of company	: Kuraray Europe GmbH
Title	: Manufacturer/Supplier
Address	: Germany Hattersheim am Main Philipp-Reis-Str. 4
Zip code	: 65795
Tel.	: +49 (0)69 305 85300; Technical contact: +49 (0)69 305 13345
Email competent person	: product-safety@kuraray.com
Distributor	: Kuraray (Shanghai) Co., Ltd.
Address	: China Shanghai 200030 Xuhui District Address Unit 2207 2 Grand Gateway, 3 Hongqiao Road
Tel.	: +86 21 6119 8111
E-mail	: pvb_inquiry@kuraray.co.jp
Emergency number	: Emergency Telephone: +86-532-83889090 (24h NRCC hazardous Substances) and others 3E +86 4001 2001 74 (Access Code: 334674)
Recommended use of the chemical	: Industrial use Temporary binder for ceramics Adhesives Coating 3D print Printing inks Additive/binder for primer
Restricted use of the chemical	: No additional information available

SECTION 2 Hazards identification

Emergency overview

Powder; Odourless; The product is non-reactive under normal conditions of use, storage and transport; Under normal conditions of storage and use, hazardous decomposition products should not be produced; No dangerous reactions known under normal conditions of use; Product is not explosive; Non oxidizing; Treat symptomatically.

GHS hazard classification

Not classified

Label elements

Signal word (GHS CN) : Not classified.
Hazard statements (GHS CN) : Not classified.

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Physical and chemical hazards

No additional information available

Health hazards

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

Most Important Symptoms/Effects : No dangerous reactions known under normal conditions of use

Environmental hazards

No additional information available

Other hazards

Fine particles can form explosive mixtures with air. Avoid creating or spreading dust. Difficult to ignite. Possible precautions against a dust explosion recommended.

SECTION 3 Composition/information on ingredients

Product form : Substance.

Ingredient(s)	Concentration or concentration ranges (w/w %)	CAS No.	Classification (GHS CN)
polyvinyl butyral (Main constituent)	> 97.5	68648-78-2; 63148-65-2	Not classified
water (Impurity)	< 2.4	7732-18-5	Not classified
butyraldehyde (Impurity)	< 0.05	123-72-8	Flammable liquids, Category 2 Serious eye damage/eye irritation, Category 2 Hazardous to the aquatic environment – Acute hazard, Category 3
sodium chloride (Impurity)	< 0.05	7647-14-5	Acute toxicity (Oral), Category 5

SECTION 4 First-aid measures

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 : Rinse mouth thoroughly with water.
Call a poison center or a doctor if you feel unwell

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Most important symptoms/effects

- | | |
|---------------------------------|--|
| Most Important Symptoms/Effects | : No dangerous reactions known under normal conditions of use |
| Symptoms/effects | : Irritation of the respiratory tract, skin, eyes and mucous membranes possible.
Dust may cause irritation. |

Advices for first aid responders

No additional information available

Notes for the doctor

- | | |
|-----------------------------------|-------------------------|
| Other medical advice or treatment | : Treat symptomatically |
|-----------------------------------|-------------------------|

SECTION 5 Fire-fighting measures

Extinguishing media

- | | |
|--------------------------------|---|
| Suitable extinguishing media | : Use extinguishing media appropriate for surrounding fire
Water spray
Dry powder
Foam |
| Unsuitable extinguishing media | : Strong water jet |

Specific hazards

- | | |
|--|--|
| Fire hazard | : Could burn but does 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. |
| Hazardous decomposition products in case of fire | : Toxic fumes may be released |

Advice for firefighters and protective measures

- | | |
|--------------------------------|--|
| Firefighting instructions | : Use ordinary fire-fighting measures, taking into account the hazards from other materials involved
Remove the containers from the fire area if this can be done safely. |
| 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

Personal precautions, protective equipment and emergency procedures

- | | |
|---|--|
| General measures | : Avoid contact with skin, eyes and clothing |
| Personal Precautions, Protective Equipment and Emergency Procedures | : Concerning personal protective equipment to use, see section 8 |

For non-emergency personnel

- | | |
|----------------------|---------------------------|
| Emergency procedures | : Ventilate spillage area |
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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"

Environmental precautions

- Avoid release to the environment.
Environmental officer must be informed of all releases

Methods and material for containment and cleaning up

- Methods for cleaning : Pick up dust with a vacuum cleaner with HEPA filter
Do not use compressed air for cleaning
For containment : Sweep and shovel into appropriate containers for disposal.

Prevention measures for secondary accidents

- Prevention Measures for Secondary Accidents : If a serious spill cannot be contained, the local authority should be notified.
Other information : Disposal must be done according to official regulations

SECTION 7 Handling and storage

Handling

- Precautions for safe handling : Ensure good ventilation of the work station
Wear personal protective equipment
Minimise 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.
Hygiene measures : Do not eat, drink or smoke when using this product.
Always wash hands after handling the product
Technical measures : Take suitable precautions, such as electrical earthing and connections or an inert atmosphere.
Local and general ventilation : No additional information available

Storage

- Storage conditions : Store in a well-ventilated place.
Keep cool.
Keep container tightly closed.
Store in original container
Material used in packaging/containers : No additional information available
Incompatible materials : Keep away from strong acids and strong oxidizers.

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

SECTION 8 Exposure controls / Personal protection equipment

Occupational exposure limits

butyraldehyde (123-72-8)	
China - Occupational Exposure Limits	
Local name	正丁醛 # n-Butylaldehyde
OEL PC-TWA	5 mg/m ³
OEL PC-STEL	10 mg/m ³
Regulatory reference	GBZ 2.1-2019

Biological limit values

No additional information available

Monitoring methods

No additional information available

Appropriate engineering controls

Ensure good ventilation of the work station

Personal protective equipment

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.

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

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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

SECTION 9 Physical and chemical properties

- Physical state : Solid
- Appearance : Powder
- Colour : Colourless, Appearance White
- Odour : Odourless
- pH : No data available
- Relative evaporation rate (butylacetate=1) : Not applicable
- Melting point : No data available
- Freezing point : Not applicable
- Boiling point : Not applicable
- Flash point : Not applicable
- Auto-ignition temperature : No data available
- Decomposition temperature : No data available
- Vapour pressure : Not applicable
- Relative vapour density at 20°C : Not applicable
- Relative density : Not specifically applicable
- Density : No data available
- Relative gas density : Not specifically applicable
- Solubility : No data available
- Partition coefficient n-octanol/water (Log Pow) : No data available
- Lower explosion limit : No data available
- Upper explosion limit : No data available
- Radioactive : No
- VOC content : < 0.1 %
- Softening point : Vicat softening temperature 50 - 63 °C DIN EN ISO 306

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Explosive properties	: Product is not explosive
Oxidising properties	: Non oxidizing
Dust explosion category	: St 1 - Weak explosion

SECTION 10 Stability and reactivity

Chemical stability	: Stable under normal conditions
Reactivity	: The product is non-reactive under normal conditions of use, storage and transport
Possibility of hazardous reactions	: No dangerous reactions known under normal conditions of use
Conditions to avoid	: None under recommended storage and handling conditions (see section 7)
Incompatible materials	: Strong acids Strong oxidizing agent
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced
Other properties	: No additional information available

SECTION 11 Toxicological information

Acute toxicity	
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	
Skin corrosion/irritation	: Not classified (Based on available data, the classification criteria are not met)
Serious eye damage/eye irritation	
Serious eye damage/irritation	: Not classified (Based on available data, the classification criteria are not met)
Respiratory or skin sensitisation	
Respiratory or skin sensitisation	: Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	
Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met)
STOT - single exposure	
STOT - single exposure	: Not classified (Based on available data, the classification criteria are not met)

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STOT - repeated exposure

STOT - repeated exposure : Not classified (Based on available data, the classification criteria are not met)

Aspiration hazard

Aspiration hazard : No data available (Not applicable) (Not applicable)

SECTION 12 Ecological information

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)

No additional information available

Persistence and degradability

Polyvinyl butyral (68648-78-2; 63148-65-2)	
Persistence and degradability	No data available.

Bioaccumulative potential

Polyvinyl butyral (68648-78-2; 63148-65-2)	
Bioaccumulative potential	No data available

Mobility in soil

Polyvinyl butyral (68648-78-2; 63148-65-2)	
Bioaccumulative potential	No data available
Ecology - soil	No data available.

Other adverse effects

Classification procedure (Ozone) : Not classified (Based on available data, the classification criteria are not met)

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.

Results of PBT and vPvB assessment

PBT : This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

vPvB : This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

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SECTION 13 Disposal considerations

Waste treatment methods	: Disposal must be done according to official regulations, Do not dispose of with domestic waste, Do not discharge into drains or the environment.
Contaminated container and packaging	: No additional information available
Additional information	: No additional information available
Product/Packaging disposal recommendations	: Recycle or dispose of in compliance with current legislation

SECTION 14 Transport information

In accordance with JT/T 617 / IMDG / IATA

Overland transport (JT/T 617)	Transport by sea	Air transport
UN number		
Not regulated for transport		
Proper shipping name		
Not regulated	Not regulated	Not regulated
Transport hazard class(es)		
Not regulated	Not regulated	Not regulated
Packing group		
Not regulated	Not regulated	Not regulated
Environmental hazards		
Not regulated	Not regulated	Not regulated
No supplementary information available		

Special transport precautions

Overland transport (JT/T 617)

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

SECTION 15 Regulatory information

Dangerous Goods List (GB 12268) : Contains listed substance(s).

New Chemical Substance Environmental Management Registration Measures (MEE Order 12 of 2020)

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Inventory of Existing Chemical Substances in China (IECSC) : Contains listed substance(s)
polyvinyl butyral

Water (CAS-No. 7732-18-5)

n-Butylaldehyde (CAS-No. 123-72-8)

Sodium chloride (CAS-No. 7647-14-5)

Regulations on the Safe Management of Hazardous Chemicals (Decree 591 of the State Council)

Catalogue of Hazardous Chemicals (2015) : Contains Hazardous Chemical(s)
n-Butylaldehyde (CAS-No. 123-72-8)

Law of the People's Republic of China on the Prevention and Control of Occupational Diseases

Catalogue for Classification of Hazardous Factors of Occupational Diseases : Contains listed substance(s)
Butyral (CAS-No. 123-72-8)

Other domestic regulatory lists

Dangerous Goods List (GB 12268) : Contains listed substance(s)
BUTYRALDEHYDE (CAS-No. 123-72-8)

SECTION 16 Other information

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Data sources : Information provided by the manufacturer

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

Phone: +49 69 305 34 700

Fax: +49 69 305 86 500

SDS Service: +49 69 305 34 740

Contact person : Saskia Vetter

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

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Abbreviations and acronyms

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

Section	Changed item	Comments
	General revision.	
16.	Contact person.	Modified.

KFT SDS CN 01 - Version 24.2 Kuraray

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