

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

SECTION 2 Hazards identification

Emergency overview

Powder. colorless, appearance white. 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. Strong oxidizing agent. Strong acids. No dangerous reactions known under normal conditions of use. Product is not explosive. Non oxidizing. Treat symptomatically

GHS hazard classification

Not classified

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Label elements

Not classified

Physical and chemical hazards

No additional information available

Health hazards

Symptoms/effects : Dust may irritate the respiratory tract, skin and eyes
Most Important Symptoms/Effects : Direct contact with eyes may cause temporary irritation. Dust may irritate throat and respiratory system and cause coughing.

Environmental hazards

No additional information available

Other hazards

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.

SECTION 3 Composition/information on ingredients

Product form : Substance.

Ingredient(s)	Concentration or concentration ranges (w/w %)	CAS No.	Classification (GHS CN)
Polyvinyl butyral	> 97,5	68648-78-2 or 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 : Direct contact with eyes may cause temporary irritation. Dust may irritate throat and respiratory system and cause coughing.
- Symptoms/effects : Dust may irritate the respiratory tract, skin and eyes

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 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.
- Hazardous decomposition products in case of fire : Toxic fumes may be released: Carbon monoxide, Carbon dioxide
- Reactivity in case of fire : Direct contact with eyes may cause temporary irritation. Dust may irritate throat and respiratory system and cause coughing

Advice for firefighters and protective measures

- Firefighting instructions : No additional information available
- 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 inhalation of dust and contact with skin and eyes
- 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

For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment

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For further information refer to section 8: "Exposure controls/personal protection"

Environmental precautions

Avoid sub-soil penetration. Avoid release to the environment.
Environmental manager must be informed of all releases.

Methods and material for containment and cleaning up

- Methods for cleaning : Collect dust using a vacuum cleaner equipped with HEPA filter. Do not use compressed air for cleaning.
- For containment : No additional information available

Prevention measures for secondary accidents

- Prevention Measures for Secondary Accidents : No additional information available
- 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
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 : Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.
- 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 tightly closed container.
- Technical measures : No additional information available
- Material used in packaging/containers : No additional information available
- 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

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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.
- Hand protection : In case of repeated or prolonged contact wear gloves
Nitrile rubber
ISO 374-1
EN ISO 13982
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
EN 13034
- 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

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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

Physical state : Solid
Appearance : Powder
Colour : colorless, appearance white
Odour : odourless
pH : No data available
Relative evaporation rate (butylacetate=1) : Not applicable
Melting point : Not applicable
Freezing point : Not applicable
Boiling point : Not applicable
Flash point : Not applicable
Auto-ignition temperature : Not applicable
Decomposition temperature : No data available
Vapour pressure : Not applicable
Relative vapour density at 20°C : Not applicable
Relative density : Not applicable
Density : No data available
Solubility : No data available
Partition coefficient n-octanol/water (Log Pow) : No data available
Viscosity, kinematic : Not applicable
Viscosity, dynamic : Not applicable
Lower explosion limit : No data available
Upper explosion limit : No data available
Radioactive : No
VOC content : < 0.1 %
Explosive properties : Product is not explosive
Oxidising properties : Non oxidizing
Additional information : vicat softening temperature 55 - 63°C DIN EN ISO 306

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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	: No additional information available
Incompatible materials	: Strong oxidizing agent Strong acids
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)
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Serious eye damage/eye irritation

Serious eye damage/irritation	: Not classified (Based on available data, the classification criteria are not met)
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Respiratory or skin sensitisation

Respiratory or skin sensitisation	: Not classified (Based on available data, the classification criteria are not met)
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Germ cell mutagenicity

Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met)
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Carcinogenicity

Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)
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Reproductive toxicity

Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met)
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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)
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Aspiration hazard

Aspiration hazard	: No data available (Not applicable)
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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)

Persistence and degradability

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

Bioaccumulative potential

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

Mobility in soil

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.

Other adverse effects

Classification procedure (Ozone) : Not classified (Based on available data, the classification criteria are not met)
No other adverse effects on the environment (e.g. ozone depletion, photochemical ozone formation potential, global warming potential) are expected from this constituent.

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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

Overland transport (JT/T 617)	Transport by sea	Air transport
UN number		
Not regulated for transport	Not regulated for transport	Not regulated for transport
Proper shipping name		
Not applicable	Not applicable	Not applicable
Transport document description		
Not applicable	Not applicable	Not applicable
Transport hazard class(es)		
Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable
Packing group		
Not applicable	Not applicable	Not applicable
Environmental hazards		
Not applicable	Not applicable	Not applicable

Special transport precautions

Overland transport (JT/T 617)

Not applicable

Transport by sea

Not applicable

Air transport

Not applicable

SECTION 15 Regulatory information

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

Inventory of Existing Chemical Substances in China (IECSC) : Contains listed substance(s)
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)
n-Butylaldehyde (CAS-No. 123-72-8)

Other domestic regulatory lists

Dangerous Goods List (GB 12268-2012) : Contains listed substance(s)
n-Butylaldehyde (CAS-No. 123-72-8)

SECTION 16 Other information

Data sources : Information provided by the manufacturer

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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

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Abbreviations and acronyms

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

KFT SDS CN 01

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