

1. Chemical product and company identification

A. Product name	Mowital
Synonyms	Product grades covered by this safety data sheet see below: * 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,
B. Recommended use and Limitations on use	
Recommended use	For industrial use only. Additive/binder for primer. Coatings. Lacquer. Printing ink.
Manufacturer/Importer/Distributor information	
Company name	Kuraray Co., Ltd.
Address	OTE CENTER BLDG., 1-1-3, Otemachi, Chiyoda-ku, Tokyo 100-8115 Japan
Telephone	+81-3-6701-1422
E-mail address	https://www.kuraray.co.jp/inquiry
Emergency Telephone Number	+ 81-3689-08677
Access code	334939

2. Hazards identification

A. Hazard category/Classification	
Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.
B. Warning label items including precautionary statement	
• Pictogram	None.
• Signal word	None.
• Hazard statement	The substance does not meet the criteria for classification.
• Precautionary statement	
Prevention	Use personal protective equipment as required.
Response	No specific first aid measures noted.
Storage	Store in a dry area. Store in a closed container. Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
C. Other hazards not included in the hazard category criteria (e.g. dust explosion hazard)	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.
Supplemental information	None.

3. Composition/information on ingredients

Chemical identity	Common and alternative names	CAS number	ID number	Content in percent (%)
Polyvinyl butyral		68648-78-2	-	> 97.5
Water (Impurity)		7732-18-5	KE-35400	< 2.5
Butyraldehyde (Impurity)		123-72-8	KE-03746	< 0.05
Sodium chloride (Impurity)		7647-14-5	KE-31387	< 0.05

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
Polyvinyl butyral can also have CAS no 63148-65-2.

4. First aid measures

A. In case of eye contact	Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.
B. In case of skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.

C. In case of inhalation	If dust from the material is inhaled, remove the affected person immediately to fresh air. Call a physician if symptoms develop or persist.
D. In case of swallowing	Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.
E. Note to physician	Provide general supportive measures and treat symptomatically.
Most important symptoms/effects, acute and delayed	Contact with dust: Irritation of eyes and mucous membranes. Coughing.
General advice	If you feel unwell, seek medical advice (show the label where possible).

5. Fire-fighting measures

A. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	Water fog. Foam. Dry powder. Carbon dioxide (CO ₂). Apply extinguishing media carefully to avoid creating airborne dust. Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.

B. Specific hazards arising from the chemical (example: hazardous combustion products) Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. During fire, gases hazardous to health may be formed.

C. Specific methods of fire-fighting

Special protective equipment for firefighters	Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Special fire fighting procedures	Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk.

General fire hazards The product is not flammable. The product may form dust and can accumulate electrostatic charges, which may cause an electrical spark (ignition source). Use proper grounding procedures.

6. Accidental release measures

A. Personal precautions, protective equipment and emergency measures Avoid inhalation of dust and contact with skin and eyes. Wear appropriate personal protective equipment. For personal protection, see section 8 of the MSDS.

B. Environmental precautions Environmental manager must be informed of all releases.

C. Methods and materials for containment and cleaning up Avoid dust formation. Collect dust or particulates using a vacuum cleaner with a HEPA filter. Do not use compressed air when cleaning. For waste disposal, see section 13 of the MSDS.

7. Handling and storage

A. Precautions for safe handling Minimize dust generation and accumulation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Provide appropriate exhaust ventilation at places where dust is formed. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges when there is a risk of dust explosion.

Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Avoid inhalation of dust and contact with skin and eyes. Wash hands after handling.

B. Conditions for safe storage (including any incompatibilities) Store in original tightly closed container. Store in a cool, dry, well-ventilated place. Store away from incompatible materials (see Section 10 of the MSDS). Read and follow manufacturer's recommendations.

8. Exposure controls/personal protection

A. Exposure limit values, biological limit values, etc

ACGIH Components	Type	Value	Form
Dust	TWA	10 mg/m ³	Inhalable particles.
US. ACGIH Threshold Limit Values Components	Type	Value	Form
Dust	TWA	3 mg/m ³	Respirable particles.

Biological limit values No biological exposure limits noted for the ingredient(s).

B. Appropriate engineering controls Provide sufficient ventilation for operations causing dust formation. Explosion-proof general and local exhaust ventilation. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn.

C. Personal protective equipment

- **Respiratory protection** In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment with particle filter.
- **Eye protection** Risk of contact: Wear approved safety goggles.
- **Hand protection** Wear protective gloves.
In full contact: Glove material: Nitrile rubber. Layer thickness: 0.12 mm. Breakthrough time: >=480 min.
In splash contact: Glove material: Nitrile rubber Layer thickness: 0.12 mm Breakthrough time: >=480 min.
- **Body protection** Wear suitable protective clothing. It is a good industrial hygiene practice to minimize skin contact.

Hygiene measures Handle in accordance with good industrial hygiene and safety practice. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

A. Appearance

- Physical state** Solid.
- Form** Powder.
- Color** Colorless.

B. Odor Odorless.

C. Odor threshold Not available.

D. pH Not applicable.

E. Melting point/freezing point

Melting point 275 - 410 °F (135 - 210 °C)

F. Boiling point, initial boiling point, and boiling range Not applicable

G. Flash point Not applicable.

H. Evaporation rate Not applicable.

I. Flammability (solid, gas) Not available.

J. Upper/lower limit on flammability or explosive limits

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

K. Vapor pressure Not applicable.

L. Solubility

Solubility (water) Not available.

M. Vapor density Not applicable.

N. Specific gravity Not available.

O. n-octanol/water partition coefficient No data available.

P. Auto-ignition temperature > 716 °F (> 380 °C)

Q. Decomposition temperature Not available.

R. Viscosity Not available.

S. Molecular weight 234.25 g/mol

Other data

Dust explosion properties

St class 1

Molecular formula (C4H8O.C4H6O2.C2H4O)x

Oxidizing properties Not oxidizing.

Percent volatile < 2.5 % w/w

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

A. Stability and hazardous reaction potential

Stability	Material is stable under normal conditions.
Hazardous reaction potential	No dangerous reaction known under conditions of normal use.

B. Conditions to avoid (e.g. static discharge, shock or vibration, etc) Keep away from heat, sparks and open flame. Contact with incompatible materials. Minimize dust generation and accumulation.

C. Incompatible materials Strong acids. Strong oxidizing agents.

D. Hazardous decomposition products Carbon oxides.

11. Toxicological information

A. Information on likely routes of exposure

• Respiratory organs	Dust irritates the respiratory system, and may cause coughing and difficulties in breathing. Prolonged inhalation may be harmful.
• Skin	Dust may irritate skin.
• Eyes	Dust may irritate the eyes.
• Mouth	May cause discomfort if swallowed.

B. Information on health hazards

• Acute toxicity (list all possible routes of exposure)	Not expected to be acutely toxic.
• Corrosivity or irritation to the skin	Based on available data, the classification criteria are not met.
• Serious eye damage/eye irritation	Based on available data, the classification criteria are not met.
• Respiratory sensitization	Due to partial or complete lack of data the classification is not possible.
• Skin sensitization	Based on available data, the classification criteria are not met.
• Carcinogenic properties /Carcinogenicity	Based on available data, the classification criteria are not met.
• Mutagenic properties /Mutagenicity	Based on available data, the classification criteria are not met.
• Reproductive toxicity	Based on available data, the classification criteria are not met.
• Specific target organ toxicity - single exposure	Based on available data, the classification criteria are not met.
• Specific target organ toxicity - repeated exposure	Based on available data, the classification criteria are not met.
• Aspiration hazard	Due to the physical form of the product it is not an aspiration hazard.

12. Ecological information

A. Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
B. Persistence/degradability	No data is available on the degradability of this product.
C. Bioaccumulative potential	The product is not expected to bioaccumulate.
D. Mobility in soil	No data available.
E. 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.

13. Disposal considerations

A. Method of disposal	Dispose of in accordance with local regulations.
B. Disposal considerations (including disposal of contaminated containers or packaging)	Dispose of in accordance with local regulations.

14. Transport information

KRDG

A. UN number	Not applicable.
B. UN proper shipping name	Not applicable.

- C. Transport hazard class(es)**
Class Not applicable.
Subsidiary risk -
D. Packing group Not applicable.
E. Environmental hazards No.
F. Special precautions for user
Special precautions Not applicable.

IATA

- A. UN number** Not applicable.
B. UN proper shipping name Not applicable.
C. Transport hazard class(es)
Class Not applicable.
Subsidiary risk -
D. Packing group Not applicable.
E. Environmental hazards No.
F. Special precautions for user Not applicable.

IMDG

- A. UN number** Not applicable.
B. UN proper shipping name Not applicable.
C. Transport hazard class(es)
Class Not applicable.
Subsidiary risk -
D. Packing group Not applicable.
E. Environmental hazards
Marine pollutant No.
EmS Not applicable.
F. Special precautions for user Not applicable.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

A. Restrictions under the Industrial Safety and Health Law

Harmful Substances Prohibited from Manufacturing

Not regulated.

Harmful Substances Requiring Permission for Manufacture or Use

Not regulated.

Controlled Hazardous Substances

Not regulated.

Harmful Substances Requiring Special Medical Examination

Not regulated.

Workplace Environmental Monitoring Harmful Materials

Not regulated.

Occupational Exposure Limit

Not regulated.

B. Restrictions under the Chemicals Control Law (Previously Toxic Chemicals Control Law)

Accidental Release Prevention Substances

Not regulated.

Act on the Registration and Evaluation of Chemicals

Banned Toxic Chemicals

Not regulated.

Designated Existing Chemicals Subject to Registration (PEC) (MoE No. 2015-92)

Not listed.

Restricted Chemical Substances

Not regulated.

Toxic Chemicals

Not regulated.

C. Restrictions under the Dangerous Substance Safety Management Act

Not dangerous goods under the Dangerous Substance Safety Management Law

D. Restrictions under the Wastes Control Act

Halogenated Materials in Waste Organic Solvents

Not regulated.

Hazardous Substances

Not regulated

E. Restrictions under other foreign or domestic laws

Clean Air Conservation Act

Air Pollutants

Not regulated.

Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides (Rules on PIC, MoE No. 2014-252, Dec. 31, 2014; Standards for Pesticides, RDA No. 2014-26), as amended

Not listed.

Specific Air Pollutants

Not regulated.

Further information

This material safety data sheet was prepared in accordance with Article 41 of the Industrial Safety and Health Law.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Korea	Existing Chemicals List (ECL)	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

A. Source of information

ACGIH
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
EPA: AQUIRE database
HSDB® - Hazardous Substances Data Bank
NLM: Hazardous Substances Data Base
Korea. Accidental Release Prevention Substances (Presidential Decree of Toxic Chemical Control Law, Executive Order No. 19203)
Korea. Dangerous Substances Threshold Quantity (Presidential Decree of Dangerous Substances Safety Management Act No. 18406, Schedule 1)
Korea. Harmful Substances Prohibited from Manufacturing (Presidential Decree on the Industrial Safety and Health Act (No. 13053), Article 29)
Korea. Harmful Substances Requiring Permission for Manufacture or Use (Presidential Decree on the Industrial Safety and Health Act (No. 13053), Article 30)
Korea. Non-Toxic Chemicals List (National Institute of Environment Research (NIER) Public Notice No. 1997-10, as amended)
Korea. Observational Chemicals (Ministerial Decree of TCCL Article 6)
Korea. OELs. Regulation for Permitted Concentration of Hazardous Substances (Ministry of Labor (MOL) Public Notice No. 1986-45, as amended)
Korea. Prohibited Chemical Substances (TCCL Article 11)
Korea. Regulated volatile organic compounds (VOCs) (MOE Notice No. 2001-36, March 8, 2001, as amended)
Korea. Restricted Chemical Substances (TCCL Article 11)
Korea. Toxic Chemical Control Law (TCCL), Existing Chemicals Inventory (KECI)
Korea. Toxic Chemical Control Law (TCCL), pre-1997 List
Korea. Toxic Chemicals (TCCL Article 10)
Korea. Toxic Release Inventory (TRI) Chemicals (TCCL Article 14)

B. Issue date

11-January-2017

C. Number of revisions and date of most recent revision

12-June-2020 (03 revision)

D. Other

Disclaimer

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment. Kuraray cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.