Mowital® SB

Technical Data Sheet

Characteristics
Polyvinyl butyral (PVB) grades with different molecular weights and degrees of acetalisation.

Recommended uses
Temporary binder for ceramics. Binder for coatings, adhesion promotion, corrosion protection primers, shop primers, wash primers, stoving enamels, varnishes and lacquers for different substrates. Binder for printing inks. Binder for textile printing and non-woven. Wetting agent for grindings, esp. of organic pigments. Co-binder for powder coatings. Binder or raw material for textile printing and non-woven. Wetting agent for grindings, esp. of organic pigments. Adhesives, pressure-sensitive adhesives and hotmelts.

Form supplied
Fine-grained and free-flowing white powder.

Specification data
The data are determined by our quality control for each lot prior to release.

Grade	Non-volatile content[1]	Content of polyvinyl alcohol[2]	Content of polyvinyl acetate[3]	Content of chloride ions[4]	Dynamic viscosity[5,6]
	wt-%	wt-%	wt-%	ppm	mPa · s
Mowital® SB 60 HH	≥ 97,5	12–14	1–4	< 100	100–140
Mowital® SB 70 HH	≥ 97,5	12–14	1–4	< 100	280–330

1) Kuraray method ref. DIN EN ISO 3251:2019-09
2) Kuraray method ref. DIN EN ISO 4629-1:2016-12
3) Kuraray method ref. DIN EN ISO 3681:2019-03
4) Kuraray method ref. ISO 6227:1982-09
5) Kuraray method ref. DIN 53015:2019-06, at 20 °C
6) as 10 % solution in ethanol containing 5 % H_2O

Additional data
These data are used solely to describe the product. They are not subject to constant monitoring or part of the specification.

Glass transition temperature
The glass transition temperature is determined according to the following standard:
DIN EN ISO 11357-1:2017-02. The **Mowital® SB** grades have average values in a range of 65–68 °C.

Moisture absorption
Moisture absorption is determined according to the Kuraray method following standard:
DIN EN ISO 3251:2019-09. When applying the standard climate (23 °C / 50 % r. h.), the **Mowital® SB** grades show average values in a range of 0,5–0,6 %.

Bulk density
The bulk density is determined according to the Kuraray method, which refers to DIN EN 543:2003-08.
The **Mowital® SB** grades have average values in a range of 200–250 g/l.

Nomenclature
The tradename **Mowital**® is followed by two capitals. S indicates a narrower specification range compared to the corresponding **Mowital**® B grades and B states the used aldehyde (butyraldehyde). The numbers refer to the degree of polymerisation, the higher the number the higher the degree of polymerisation (viscosity).
The suffix HH indicate the degree of acetalisation.

PROPERTIES AND USES

The **Mowital**® grades are thermoplastic polyvinyl butyral resins. The properties of the various grades are mainly determined by their molecular weights and their degree of acetalisation. **Mowital**® grades show good compatibility with plasticisers and other resins. **Mowital**® grades are able to cross-link with other resins. The degree of cross-linking may be adjusted depending on the degree of residual OH-groups which is determined by the degree of acetalisation.
Mowital® **SB** grades are resistant to light and heat sealable at temperatures above 120 °C. Toughness and elasticity are influenced by their molecular weight. Properties like water resistance and solubility in non-polar solvents mainly depend on their degree of acetalisation. So the highly acetalised **Mowital**® HH grades show the highest water resistance and best solubility in non-polar solvents such as toluene.

Application
Due to their narrow specification the **Mowital**® **SB** grades are particular suitable for all applications where an extremely low tolerance for viscosity is essential (e.g. temporary binder for ceramics, casting process) or where a very low ion content is required.

Processing
Mowital® can be processed thermoplastically or in solution of organic solvents.

Preparation of Mowital® solutions
Mowital® is soluble in a wide range of organic solvents and mixtures thereof. It can be dissolved in single solvents but to obtain low solution viscosities it is recommended to dissolve **Mowital**® in solvent mixtures (e.g. 1:1 mixture of ethanol and toluene).
Mowital® is not soluble in water. However, a water content of up to 10 % in the solvent mixture is possible and can be used to influence solution viscosity. Increase or decrease of viscosity depends on the type of solvents (e.g. increase in ethanolic solution) and must be tested in advance. To dissolve **Mowital**®, stir the solvent or solvent mixture and add **Mowital**® in portions at ambient temperature. The stirrer speed during addition of **Mowital**® should be low to medium to ensure good dispersion of **Mowital**® powder in the solvent and to avoid dusting. After **Mowital**® is wetted by the solvent the stirring speed can be increased. Sometimes heat may be necessary for dissolving **Mowital**®. In this case do not apply heat until **Mowital**® is wetted to avoid agglomeration.
For preparation of a solution with mixed solvents first add **Mowital**® to the solvent which does not dissolve **Mowital**® alone (e.g. aromatic solvent) in order to form a slurry. Then add the alcoholic solvent which normally dissolves **Mowital**® best.
The final solution viscosity as well as the speed of dissolution depend on the type(s) of solvent(s) used, the temperature and the speed of stirring.

Storage
Mowital® **SB** grades can be stored in its original packaging under dry and cool conditions for at least 12 months after delivery date.

Precautions
Static electricity has to be avoided applying the appropriate safety measures while handling **Mowital**® as well as organic solvents.

Food contact status
The use of **Mowital**® is sanctioned by: The (EU) regulation 1935/2004 and No. 10/2011 – all monomers and starting sub-stances authorised by listing in Annex I.
As well as Council of Europe, Resolution AP 96(5) on surface coatings intended to come into contact with foodstuffs – all monomers and starting substances authorised by listing in appendix 2, list 1. US Food and Drug Administration 21CFR § 175.105 Adhesives, § 175.300 Resinous and polymeric coatings, § 176.170 Components of paper and paperboard in contact with aqueous and fatty foods, § 176.180 Components of paper and paperboard in contact with dry food.

Industrial safety and environmental protection
Not classified as a dangerous substance or preparation according to the current criteria of chemical legislation, or of the CLP regulation EU Directives (1272/2008).
A safety data sheet is available on our homepage **www.mowital.com** and is updated on a regular base.

Waste disposal
In accordance with current regulations and/or after consultation with site operator and/or with the responsible authorities **Mowital**® may be taken to waste disposal sites or incineration plants.

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