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KAURIT® Glue 285 Liquid

Kaurit Glue 285 Liquid is used in the door, furniture, plywood and par-
quet industry. Depending on the glue formulation, the bonds meet the
following requirements:

EN 636-1 for use class 1
EN 636-2 for use class 2
EN 12765 durability class C4
DIN 68705 (1981): IF; BFU 20; BST 20; BSTAE 20
DIN 68705 (1968): IF 20; IW 67; A 100

Chemical characterization

Aqueous solution of a urea-formaldehyde condensation product.

Classification and labelling according to EC directives

Classification: Water hazard class (WGK) 1
Labelling: Xn, R 40, R 43, S 23.3, S 37

Properties

Product specification

(Values measured during filling in
the plant)

Appearance	milky-white	
Dry solids content ¹⁾	(65.5 ± 1) %	ISO 3251
pH at 20 °C	7.5 – 9.5	ISO 976
Density at 20 °C	1.291 – 1.302 g/cm ³	ISO 2811-3
Viscosity measured at 20 °C	750 – 1,000 mPa·s	ISO 3219-B

Other properties

Shelf-life ²⁾	at 20 °C	3 – 4 months
	at 30 °C	4 – 8 weeks

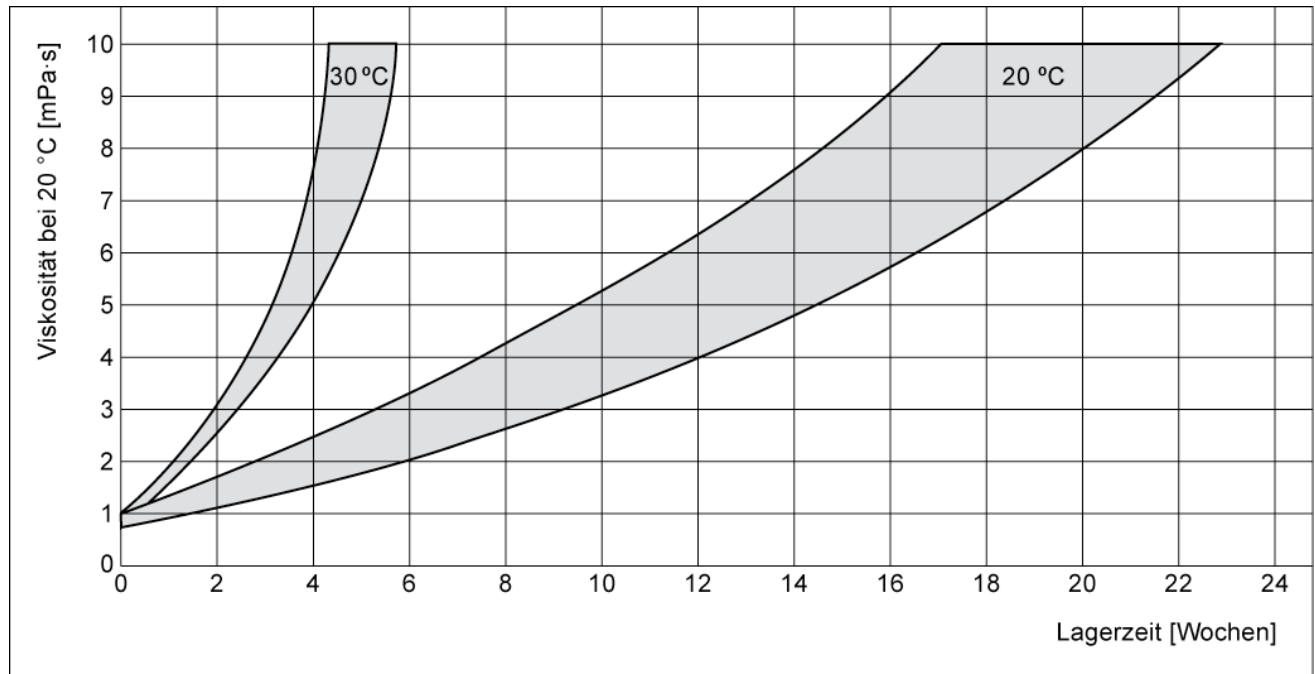
**Usability should be monitored constantly during storage by
means of checks on viscosity.**

¹⁾ Initial weight of 1 g on the weighing pan (35 mm diameter); dry for 2 h at 120 °C

²⁾ Shelf-life until a viscosity limit of 10,000 mPa·s for surface gluing is reached

Shelf-life of Kaurit Glue 285 Liquid

Change in viscosity according to period in storage and storage temperature. The viscosity ranges shown cover 95 % of the observed values.



Viskosität bei 20 °C [mPa·s] = Viscosity at 20 °C [mPa·s]
Lagerzeit [Wochen] = Storage time [weeks]

Gel times with Bonit hardeners³⁾

Table 1

Gel times (guideline values) of Kaurit Glue 285 Liquid with selected hardener solutions (10 % added Bonit solution)

Hardener solution		Gel time at						
		20 °C	30 °C	40 °C	70 °C	80 °C	90 °C	100 °C
Bonit 13026	15 %	1 h 45 min	35 min	13 min	63 s	40 s	28 s	22 s
Bonit 13030	15 %	2 h 25 min	45 min	15 min	63 s	39 s	27 s	18 s
Bonit 13070	50 %	4 h 15 min	1 h 15 min	17 min	65 s	42 s	26 s	20 s
Bonit 11170	12 % undissolved	12 h	3 h 20 min	65 min	3 min	1 min 20 s	43 s	35 s
Bonit 13300	40 %	27 h 30 min	8 h	2 h	5 min 15 s	2 min 30 s	1 min 20 s	45 s
Bonit 11700	15–20 % undissolved	70 h	22 h	6 h 45 min	17 min 10 s	6 min 30 s	3 min 15 s	92 s

These hardeners are also available as ready-to-use solutions.

For virtually all applications, there is an extensive, specific Bonit range of products available, allowing especially 2-component systems to be used both as liquid/liquid and liquid/powder mixtures.

³⁾ See page 8 for suppliers of Bonit products

Table 2

Gel times (guideline values) of selected hardener solutions with Kaurit Glue 285 Liquid (100 parts by weight (p/w))

Hardener solution	Added	Gel time (approx. values) at		
		20 °C	30 °C	100 °C
Bonit 11330	10 p/w	2 h 30 min	50 min	19 s
Bonit 11420	26 p/w	7 h	2 h	20 s
Bonit 11429	15 p/w	3 h	1 h	19 s

Application

Kaurit Glue 285 Liquid is used together with extenders or fillers and hardener. The tables below show some examples (quantities expressed in parts by weight).

Plywood manufacture

Interior plywood

DIN 68705 (1981):
IF, BFU 20, BST 20, BSTAE 20
EN 636-1
EN 12765 C2

Table 3

Formulation No.	1	2	3	4
Kaurit Glue 285 Liquid	100	100	100	100
Bonit 11330	–	–	10	–
Bonit 11420	–	–	–	–
Bonit 13070	10	–	–	–
Bonit 13300	–	10	10	10
Extender	10 – 15	–	40	40
Pot-life in h at 20 °C approx.	8	30	1.5	3.5
at 30 °C approx.	2.5	10	0.5	1.0
Pressing temperature °C	Heating time min/mm		Basic work time min	
80	2	7	11	
90	1	4	6	
100	1	3	4	
110	0.5	2.5	3	

Interior plywood

DIN 68705 (1968): IW 67

EN 636-1

EN 12765 C3

Table 4

Formulation No.	5	6
Kaurit Glue 285 Liquid	100	100
Kauramin® Glue 650 Powder	–	8
Bonit 10115	–	10
Bonit 11170	12	–
Bonit 12830	–	6
Water approx.	3	–
Pot-life in h at 20 °C approx.	8	4
at 30 °C approx.	3	1.5
Pressing temperature °C	Heating time min/mm	Basic work time min
100	1	3
110	0.5	2
110	0.75	–
		3
		–
		2

Exterior plywood

DIN 68705 (1968): A 100

EN 636-2

EN 12765 C4

Table 5

Formulation No.	7	8	9
Kaurit Glue 285 Liquid	100	100	100
Kauramin Glue 650 Powder	–	–	25
Bonit 10115	–	–	10
Bonit 11700	15–20	20	–
Bonit 12831	–	–	10
Wood flour ⁴⁾	2– 3	–	–
Coconut shell flour ⁵⁾	–	10	–
Pot-life in h at 20 °C approx.	48	48	6
at 30 °C approx.	12	12	2
Pressing temperature °C	Heating time min/mm	Basic work time (min) for softwood	
120	0.5	4	5
			2
			3 (hard-wood)

The pressing temperature must be at least 120 °C.

⁴⁾ Wood flour: sieve fineness at least MS 180

⁵⁾ Fibre-free coconut shell flour, sieve fineness MS 200 - 300

Veneering

In order to meet the requirements of section 3 of the Annex (to § 1) of the German Ordinance on the Prohibition of Certain Chemicals [*Chem-VerbotsV*] with a suitable substrate, work must be carried out with formaldehyde scavengers or formaldehyde-scavenging hardeners.

Table 6

Formulation No.	10	11
Kaurit Glue 285 Liquid	100	100
Bonit 11031	16	–
Bonit 11420	–	26
Extender flour approx.	10	–
Pot-life in h		
at 20 °C approx.	1.5	1.5
at 30 °C approx.	0.5	0.5
Pressing time for 0.6 mm thick veneers		
at 95 °C approx.	50 s	50 s
at 105 °C approx.	40 s	40 s
at 115 °C approx.	33 s	33 s

A cold substrate increases the quoted pressing times.

Further details can be found in the Technical Information “Low-formaldehyde surface gluing”.

Wood moisture content

6 – 12 %

Glue applied

Plywood boards	140 – 200 g/m ²
Blockboards	180 – 250 g/m ²

The quantity of glue applied is dependent primarily on the nature of the wood.

Veneering	
on chipboard	100 – 120 g/m ²
on blockboards	120 – 140 g/m ²
Crossbanding	160 – 180 g/m ²

Thin, even application of glue prevents glue from bleeding through.

Wet lay-up time

Up to 15 minutes, depending on the indoor climate and quantity of glue applied (the glue should still feel sticky).

Assembly time

Up to 2 minutes, depending on the pressing temperature.

Bonding pressure

The bonding pressure is dependent on the nature of the surface, structure, dimensional accuracy of the middle layers and the type of wood.

Gluing of veneer sheets made of	
– softwood	0.8 – 1.0 N/mm ²
– hardwood	1.2 – 1.6 N/mm ²
Blockboards	1.0 – 1.2 N/mm ²
Face veneers	0.4 – 0.6 N/mm ²

Crossbands and face veneers 0.5 – 0.7 N/mm²

Pressing time

The pressing time required is derived from the basic time for pressing plus the heating time per mm of wood through to the innermost glue joint.

Cold gluing

Cold gluing is used for bonding solid woods.

Pre-coating process

In the pre-coating process, the hardener solution is applied to one side of the joint and allowed to dry. The glue is applied without extender to the other side of the joint. The coating of hardener must be completely dry before the parts are brought together. When the parts have been brought together, pressure must be applied immediately (see closed assembly time).

Table 7

Pressing temperature, wet lay-up time, pressing time

Hardener	Pressing temperature °C	Closed assembly time		Minimum pressing time min
		max.	min	
Bonit 13005	10	8		60
	15	3		40
	20	2		20

Many types of wood are discoloured by Bonit 13005, so only the joint surfaces should be wetted.

Mix-in process

The mix-in process is used for lamination of stair strings and handrails, as well as other forms of lamination and the gluing of shaped and arched items.

Table 8

Glue formulation

Kaurit Glue 285 Liquid	100
Bonit 11330	1.5
Pot-life at 20 °C	approx. 1.5 hours
Wet lay-up time at 20 °C	approx. 45 min
Pressing time	8 – 12 hours
Bonding pressure	at least 0.3 N/mm ²

With hardwoods, the pressing time is at least 12 hours.

With all cold gluing, care must be taken to ensure that the temperature of the glue solution, wood and working environment does not fall below the specified minimum values. With cold gluing, the full strength is not achieved until 6 to 8 days after pressing. During this time the glued parts should not be stored at temperatures below 18 °C; otherwise, the glue will not cure properly.

Glue applied

200 – 250 g/m²

Wood moisture content

6 – 12 %

General information

Woods such as maple, birch, beech, chestnut, teak, pine, oak and some tropical woods may cause problems during gluing owing to their high content of certain wood constituents or because of their structure. Better bonding can be achieved by adding up to 20 % PVAc glue to the glue solution or by using appropriately modified Bonit hardeners.

It is advisable to carry out the gluing as soon as possible after sawing, planing or routing.

Further information is contained in the Technical Information "Wood gluing: general information" and "Gluing of hardwoods and exotic woods".

Suppliers of Bonit products

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Storage

Information on storage can be found in the Technical Information "Storage of Kaurit and Kauramin glue types".

Safety

When using this product, the information and advice given in our **safety data sheet** should be observed. Due attention should also be given to the **precautions** necessary for handling chemicals.

Note

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

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