

**Bilgram**



**Chemie**



## Delivery program for adhesives

- wood
- paper
- special materials

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## Symbols



*suitable for wood*



*suitable for high temperatures*



*suitable for machine processing*



*suitable for manual processing*



*suitable for packaging / cardboard*



*waterproof*

## Standard container sizes



*IBC*



*bucket*  
5 kg  
30 kg



*Tanker truck*

Other container sizes are available after prior consultation!

## General information

▶ adhesion und cohesion

*adhesion: bonding between two interfaces  
cohesion: bonding within a material = interior stability*

▶ structural robustness dry/wet

*Maximal capacity to withstand stresses*

▶ solid matter

*rest of mass after drying = water- und solventfree content of adhesive*

▶ storage stability

*durability of adhesive*

▶ mechanical flow behaviour

*change of viscosity with mechanical stress*

▶ open time

*interval between application and adding together the adherends*

▶ pH-value

*acid (pH < 7), neutral (pH = 7) and alkaline (pH > 7) character of adhesives, influences characteristics like storage stability, stability of pipes etc.*

▶ brushability

*characteristic of processability*

▶ pot life

*interval between blending of a polyblend adhesive and the end of its plasticity*

▶ behave of drying

*qualities until drying of the mobile phase (solvents like water and additives)*

▶ discoloration

*unwanted discoloration through interaction between adhesive and wood ingredients*

▶ viscosity

*flow behaviour; basic characteristic for processing, flowing, film boiling and storage stability*

▶ heat resistance

*mechanical stability of adhesive at 80 °C*

▶ white point

*= minimum film forming temperature; lowest temp. when dispersions forming a coherent film; at this point the dispersion has a white colour*

## Classification by DIN EN 204 (for wood)

D1	for indoor use	low air humidity, temperature more than 50 °C for a short time, Humidity of wood max. 15 %	Furniture, interior fixtures, room doors, dry rooms „dry strength“
D2	for indoor use	sporadic high air humidity, Humidity of wood max. 18 %	Furniture, interior fixtures, room doors in kitchen and bathrooms, humid rooms without wet areas „humid strength“
D3	for indoor and outdoor use	high air humidity, contact with water for a short time	Fixtures in wet rooms, doors and windows protected from weather, „cold water strength“
D4	for indoor and outdoor use	frequent contact with water for a long time	Outdoor areas, doors (not protected from weather), windows with surface protection „cooking water strength“

## Product overview


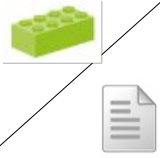



### Wood

Wood/Wood and Wood/Plastic	adhesive classification	suitable for metal	high temperature	machine processing	manual processing	waterproof
						 WATER RESISTANT
Miracol 13F2 Express (6113)	D2			+	+	++
Miracol 6092	D2			+	+	++
Miracol 6132	D2			+	+	++
Miracol 6134	D2			+	+	++
Miracol 6214	D2			+	+	++
Miracol 6260	D2		+	+	+	++
Miracol 6262	D2		+	+	+	++
Miracol P 4511	D2 (powder)		+	+	+	+++
Miracol P 4515	D2 (powder)		+	+	+	+++
Miracol P 4520 joint/verneer	D2 (powder)		+	+	+	+++
Miracol 19C22+	D2 (with hardener D3)		+	+	+	+++
Miracol 6259	D3		+	+	+	++
Miracol 6305	D3		+	+	+	++
Miracol 6357	D3		+	+	+	++
Miracol 6359	D3		+	+	+	++
Miracol 6360 Universal	D3		+	+	+	++
Miracol 6362	D3			+	+	++
Miracol 6366	D3			+	+	++
Miracol 6368 (L1256.085)	D3		+	+	+	++
Miracol 6302	D3		+	+	+	++
Miracol 6361 (black)	D3		+	+	+	+++
Miracol 6251	D3 (with hardener D4)	+	+	+	+	+++
Miracol 6271	D3 (with hardener D4)	+	+	+	+	+++
Miracol 6274	D3 (with hardener D4)	+	+	+	+	+++
Miracol 6285 Alu	D3 (with hardener D4)	+	+	+	+	+++
Miracol 6288	D3 (with hardener D4)	+	+	+	+	+++
Miracol 6289	D3 (with hardener D4)	+	+	+	+	+++
Miracol 8F1 IND (6281)	D3 (with hardener D4)	+	+	+	+	+++
Miracol 8F1 Waterproof	D3 (with hardener D4)	+	+	+	+	+++
Miracol 8F1 Waterproof (6270)	D3 (with hardener D4)	+	+	+	+	+++
Bilo-Col 1KD4 G	D4		+	+	+	+++
Bilo-Col 1KD4 U	D4		+	+	+	+++
Bilo-Col 2KD4	D4	+	+	+	+	+++
Miracol 6254 1KD4	D4		+	+	+	+++
Miracol 6255 1KD4	D4	+	+	+	+	+++

+ suitable      ++ good      +++ very good

## Produktübersicht

### Papier/Karton

Paper adherence and Paper adherence with plastic	paper adherence for paper or plastic	FDA	BfR	processing with nozzle	processing with roller	Lay-flat	open time
							
Miracol 6591	plastic	x	x		+	+	+
Miracol 6598	plastic	x	x		+	+	+
Miracol 6599	plastic	x	x		+	+	+
Miracol 6725	plastic	x	x		+	+	+
Miracol 19C1 (6500)	paper	x	x		+	+	+
Miracol 19C22 (6501)	paper	x	x		+	+	+
Miracol 55C1 (6506)	paper	x	x		+	+	++
Miracol 5615	paper	x	x		+	+++	+++
Miracol 57C1 (6507)	paper	x	x		+	+	+
Miracol 6011	paper	x	x	+		+	+
Miracol 6025	paper	x	x	+	+	+++	+++
Miracol 6029	paper	x	x		+	+	+
Miracol 6031	paper	x	x	+		+	+
Miracol 6044	paper	x	x		+	+	+
Miracol 6201	paper	x	x		+	+	+
Miracol 6225	paper	x	x	+		++	+++
Miracol 6231	paper	x	x		+	+	+
Miracol 6246	paper	x	x		+	++	++
Miracol 6273	paper	x	x	+	+	+	+
Miracol 6529	paper				+	+	+
Miracol 6561	paper	x	x	+		+	+
Miracol 6584	paper	x	x		+	+	+
Miracol 6587	paper	x	x		+	+	+
Miracol 6589 brown	paper				+	+	+
Miracol 6810	paper	x	x	+++		+	+

+ suitable

++ good

+++ very good

## **Product overview**

Crosslinking agents & adhesives for special materials

### **Miracol release agent UF/MF**

Release agent for pressing veneered surfaces by using adhesives based on

Urea- and melamine resins.

Miracol Release agent protects surfaces of pressing plates / sheet metals; the veneered areas don't adhere on the pressing plates and residues of adhesive can be removed very simply. For all pressing temperatures.

### **Cleaner Miracol 9702**

Cleaning agent for every equipment used with adhesives

Urea- and melamine resins.

Works best when mixed into rest of adhesive. Reduces adhesive power after 5 minutes so the rest of adhesive can be washed away with water.

### **Cleaner Bilostar Kamina**

Interacts with dried adhesives on large surfaces without smearing. Can be used for dispersions or PVA adhesive.

Bilostar Kamina should be sprayed on dry glue. After an exposure time of approx. 15 min the adhesive can be wiped away. At least rinse with clear water; if necessary repeat the process.

## **Hardener Miracol 9518 (with solvents)**

Increases water resistance and heat resistance for dispersion glues.

Polyvinylacetatdispersions (crosslinker)

Add 5 % Miracol 9518 / dispersion ⇒ homogenous stirring

**Pot life** at 20 °C for at least **8 hours**.

## **Hardener Miracol 1507 (green, without solvents)**

Increases water resistance and heat resistance for special dispersion glues.

Polyvinylacetatdispersions (crosslinker)

Add 5 % Miracol 1507 / dispersion ⇒ homogenous stirring

**Pot life** at 20 °C for at least **8 hours**.

## **Hardener Miracol 9524 (blue, without solvents)**

Increases water resistance and heat resistance for special dispersion glues.


Polyvinylacetatdispersions (crosslinker)

Add 5 % Miracol 9524 / dispersion ⇒ homogenous stirring

**Pot life** at 20 °C for at least **10 days**.

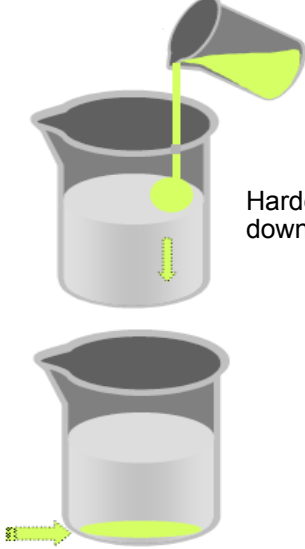
## How to applicate hardener

**correct**



Stirr in the hardener slowly to the dispersion.

**incorrect**



Hardener sets down.

Without stirring the hardener is going to set down.

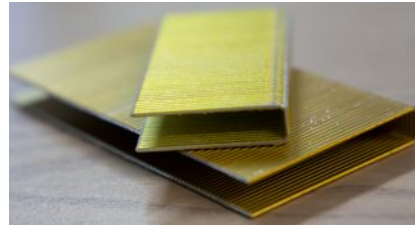
The density of the hardener is higher than the dispersion.  
( $\rho = 1,3 \text{ g/cm}^3$ )

- pH-differences are possible
- Inhomogenous dispersion
- Coagulation is possible



## Research & Development

**Adhesive for metal fibre bundles**



**Skin adhesive**

*e. g. for support stockings*



*adhesive for tattoos*



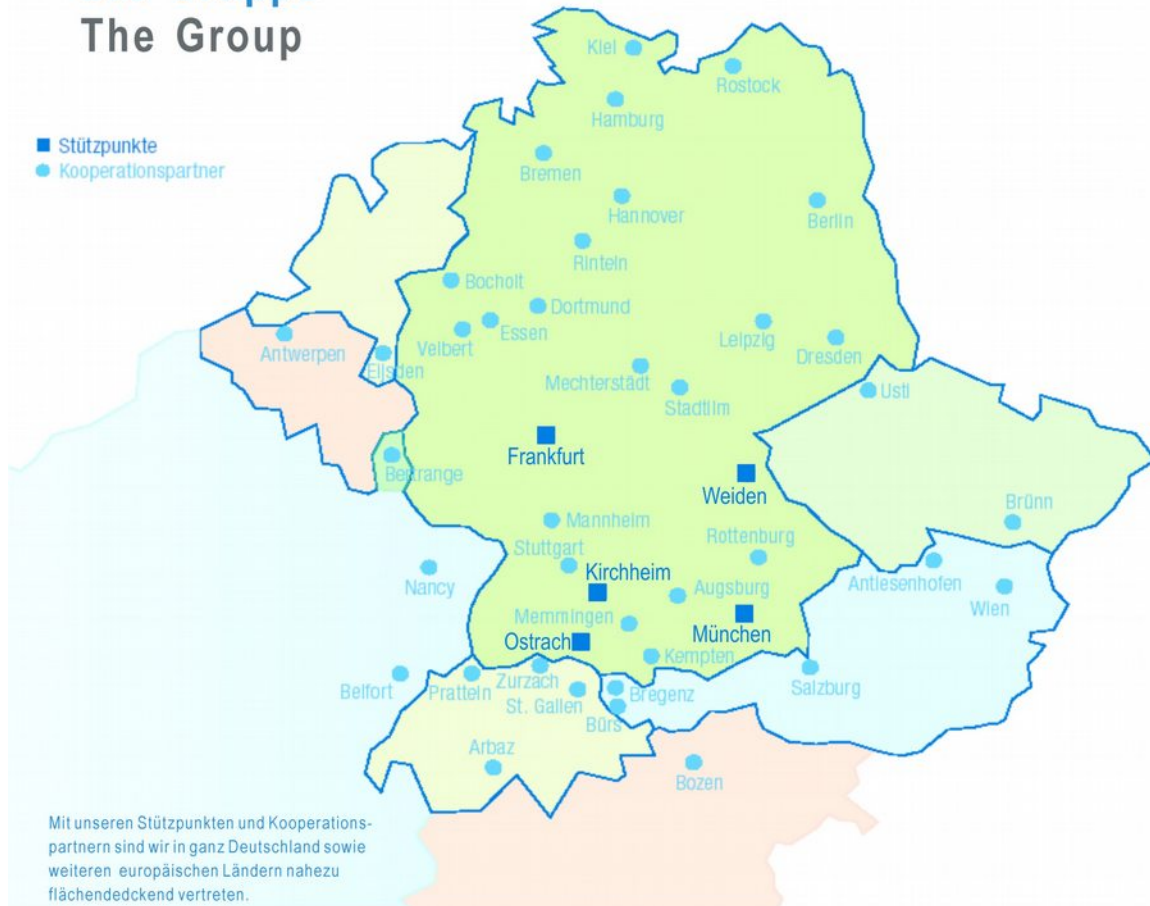
**Adhesive for table tennis rackets**

**Adhesive for puzzles**

All products are available in different **colours**.



## Die Gruppe The Group



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