



# TECHNICAL DATASHEET

## DANAFIX

### Melamine reinforced urea-formaldehyde adhesive

**Product:**

**DANAFIX 456**  
**DANAFIX 946**

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**Product description and application:**

DANAFIX 456 is a liquid melamine reinforced urea-formaldehyde resin, when it is used together with the liquid hardener DANAFIX 946, the glue mixture provides excellent bonding for wood products assembled by laminating or finger-jointing application.

The glue system is formulated for materials with relatively large differences in moisture content; it can be used for hot, cold bonding and bonding under high-frequency pressing. The hardener modified with PVAc will offer a suited flexibility to glue line.

Laminated wood product produced by use of DANAFIX 456 and hardener 946 will provide a formaldehyde emission E1-level, and a bonding strength according to EN 12765, C4. A Rosenheim C4 certificate is available.

**Application:**

Finger-jointing: .....  
Laminating: .....  
Veneering: .....

DANAFIX 456	
	●
	●
	●

**Types of wood:**

Soft (ex. pine): .....  
Hard (ex. beech, oak, teak): .....  
MDF: .....  
Chipboard: .....

	●
	●
	●
	●

**Press:**

Cold press: .....  
Warm press: .....  
High frequency press: .....

	●
	●
	●

**Physical / chemical properties:****Resin:**

Type: .....  
Appearance: .....  
Solids content: .....  
Viscosity (Brookf., 20 rpm, 20°C):..  
Specific gravity: .....  
pH: .....  
Shelf life: .....  
Content of free formaldehyde: .....

DANAFIX 456	
	Melamine-Urea-formaldehyde
	Milky white liquid
	67-68 %
	1500 - 2300 mPa.s
	Approx. 1.3 g/cm <sup>3</sup>
	9 - 10
	2 months at 20°C (at higher temperature the shelf life will be reduced)
	0.2 - 1%

**Hardener:**

Type: .....  
Appearance: .....  
Viscosity (Brookf., 6/20 rpm, 20°C):  
Specific gravity: .....  
pH: .....  
Shelf life: .....

DANAFIX 946	
	PVAc based
	Yellowish liquid
	2500 - 4500 mPa.s
	Approx. 1.17 g/cm <sup>3</sup>
	1.0 - 2.0
	4 months at 20°C

## Directions for use:

**Preparation:** Both surfaces must be clean, free from grease and well adjusted. Optimum results are obtained with newly worked wood.

**Mixing:** Resin and if necessary filler or wetting agent are mixed to a homogenous mass and following mixed thoroughly with the hardener.

**Mixing ratio:** The mixing ratio of resin to hardener is decided by the required pressing time. Addition of 20 - 50% of hardener is recommended. See table below.

GLUE MIX	I <sup>A</sup>	II <sup>A</sup>	III <sup>B</sup>
DANAFIX 456	100 pbw	100	100
DANAFIX 946	20 pbw	30	50

Notes: A: is for the warm press processing.

B: is for the cold press processing.

**Viscosity of the mixture:** Depending on mixing ratio and the age of the adhesive.

**Pot life:** Depending on mixing ratio and temperature. See table below.

GLUE MIX	POT LIFE IN MINUTES AT			
	15°C	20°C	25°C	30°C
I	45	40	35	30
II	40	35	25	15
III	30	15	10	-

**Pressing time:** Pressing time is depending on temperature, glue mix and the thickness of the laminates.

THICKNESS OF LAMINATE, MM	GLUE MIX	PRESSING TIME IN SECONDS AT		
		60°C	80°C	98°C
20	I	300	200	100
	II	230	160	80
30	I	380	240	125
	II	310	200	100
40	I	450	300	170
	II	375	250	135
50	I	670	500	330
	II	540	380	225

**Application:** The adhesive can be applied with spatula, roller, nozzles or automatic application.

**Moisture content of wood:** DANAFIX 456 gives the highest bonding strength when the moisture content of the wood is 6 – 15%.

**Open assembly time:** 0 - 10 min, at 20 °C and 50% RH. If assembly time is "closed" it can be increased 5 -10 minutes. Assembly time is reduced at higher temperatures and lower humidity of air and wood.

**Pressure:** Softwood approx. 0.5 - 1.0 N/mm<sup>2</sup>  
Hardwood approx. 0.8 - 1.2 N/mm<sup>2</sup>  
In case of tensions in the wood a higher pressure should be applied.

**Cleaning:** Wet uncured adhesive can be removed with water. Cured adhesive can best be removed mechanically.

**Storage:** Optimal storage temperature is 15 – 20°C. The table below shows the shelf life at different storage temperatures.

STORAGE TEMPERATURE	SHELF LIFE
15°C	Approx. 3 months
20°C	Approx. 2 months
25°C	Approx. 1,5 months
30°C	Approx. 1 month

All stated data are meant as a guideline. Sufficient tests should be carried out to establish final working conditions.

**Further information:****DANA LIM offers a range of adhesives for professionals:**

100-series: Upholstering adhesives

200-series: Flooring adhesives

300-series: Wall adhesives

**400-series: Wood adhesives**

500-series: Sealants & PU-foams

600-series: Building-additives, fillers etc.

700-series: Paper-, packaging- and newspaper adhesives

800-series: Hot melt

900-series: Cleaning-, release agents and hardeners.

**In the 400-series Wood adhesives DANA LIM offers:**

400-series: Special adhesives

410-series: Adhesives for edge-bonding (Cold-Activating)

430-series: Moisture resistant D3-adhesives

440-series: Moisture resistant D4-adhesives

**450-series: Urea-formaldehyde adhesives**

460-series: Adhesives for dowel-, tenon and finger joints

470-series: Adhesives for foiling of PVC, metals etc.

480-series: Adhesives for lacquered wood

490-series: Adhesives for production of laminated wood for furniture.

*The information and data contained in this data sheet are based on extensive laboratory testing and our practical experiences, and are meant for helping the user to find optimum working methods. As the conditions at the user are beyond our control, we make no warranties concerning the results, achieved by the products. The information's in this technical data sheet are typical values, intended as a guideline. They should not be regarded as product specifications. Please also refer to our standard sales conditions and terms of delivery.*