



# 無甲醛木材膠

## Formaldehyde-free Wood Adhesive

### 簡介 Introduction

商用木材合板黏著劑以脲素甲醛膠為主，含危害人體及環境的甲醛問題。工研院材化所採纖維素衍生物為主原料製作木材黏著劑，無甲醛釋放問題，具黏著力佳及耐水力佳等特性，可用於合板、地板、木心板等之接著。

Formaldehyde-free wood adhesive utilizes cellulose derivatives as raw materials, and possesses excellent adhesion and water resistance. It is capable of resolving the problems induced by formaldehyde gas releasing and environmental pollution. It can be used for products such as plywood and lumber core plywood. The potential applications include flooring, cabinetry, interior renovation, among others.

### 規格 Specifications

規格 Spec.	無甲醛生質膠 Formaldehyde-free Wood Adhesive
甲醛含量 Content of formaldehyde	F0 (無甲醛釋放) F0 (Zero formaldehyde)
合板等級 Water resistance	Type II(室內使用) Type II(interior renovation)
製程 Process	符合現有合板製程 Compatible with current plywood process

Adhesives Characteristics	Cellulose-based Plywood Adhesive (ITRI/MCL)	UF Adhesives
Rein	Cellulose + Rubber based	Urea- formaldehyde based
Formaldehyde Free	Yes	No
Adhesive Cost	\$\$	\$
Pot Life	Long	Medium
Cure Speed	Moderately Fast	Fast
Cure Temperature	Medium	Medium
Water Resistance	Very Good	Very Good
Handling/Cleanup	Simple	Moderate
Competition with Grains	No	No
Bio Ratio	10~50%	0
odor	No	Yes( Slightly Pungent)
Adhesive Rottenness	No	No

### 成果與應用 Accomplishments and Applications

- 500Kg 級木材膠放大製作  
500kg pilot process was carried out and verified for adhesive production
- 合板廠上線製作試片 (4\*8 呎<sup>2</sup> 五層合板)，通過 Type II 驗證



塗佈 → 冷壓 → 熱壓 → 成品  
Applying Glue → Cold Press → Hot Press → Plywood

The 5-laminated products with 4x8 feet<sup>2</sup> was produced and passed the commercial code testing for plywood

