

“How much formaldehyde is there in wood-based materials?”

Formaldehyde occurs naturally in wood at a steady-state concentration below 0.01 ppm (parts per million). In glue for wood-based materials, such as urea, melamine and phenolic resins, formaldehyde has been reduced. Formaldehyde is even needed to produce the formaldehyde-free glue PMDI (isocyanate/PU).

EGGER works against trivialising the risks of formaldehyde, supporting and shaping both national and international processes that deal with the topic of formaldehyde and air quality in buildings. All EGGER products fall below the limits for the European formaldehyde class E1. A selection also meet the stricter requirements of voluntary guidelines or national laws, such as those in the USA and Japan.



Controlling Formaldehyde

OVERVIEW OF THE LIMIT VALUES FOR RAW CHIPBOARDS

Emission classes	E1		EPF-S	CARB 2		IOS-MAT 0003		F****	
	European chamber test according to EN 717 (ppm)	Perforator according to EN 120 (mg HCHO/100 g ATRO board)***	Perforator according to EN 120 (mg HCHO/100 g ATRO board)	American chamber test according to ASTM 13333 E (ppm)*	Comparative value, European chamber test according to EN 717 (ppm)**	ASTM 1333 E (ppm)	Perforator according to EN 120 (mg HCHO/100 g ATRO board)***	Desiccator according to JIS A 1460 (mg/l)	Comparative value, European chamber test according to EN 717 (ppm)
Chipboard	0.1	max. 8	max. 4	0.09	0.065	0.09	max. 4	0.3	0.03 – 0.04
Thin MDF	0.1	max. 8	max. 5	0.13	0.14	0.13	max. 5	0.3	–
MDF	0.1	max. 8	max. 5	0.11	0.12	0.11	max. 5	0.3	–
OSB	0.1	max. 8	–	–	–	0.09	max. 4	0.3	–

*Chamber method: min. 23 m³, tests with various degrees of loading; temperature: 23 °C; relative humidity: 50 % and air exchange rate: 0.5/hour

**European chamber method: uniform degree of loading; temperature: 23 °C; relative humidity: 45% and air exchange rate: 1/hour

***For production control at the plant

“ *Are there wood-based materials without formaldehyde?* ”



According to estimates by the Fraunhofer Institute, 80 to 85 percent of all chipboard today contains glue with formaldehyde. Manufacturers have been able to reduce emissions tremendously over the past 20 years and experts expect a further decrease. Technically mature, formaldehyde-free glues such as polymeric diphenylmethane diisocyanate (PMDI), available in limited quantities, require elaborate processing. This leads to higher consumer prices.

EGGER also produces glued formaldehyde-free rawboard which is usually classified under the E0 standard: EGGER OSB 4 Top as well as the EGGER DHF board, which is made with polyurea. These are intended for areas of application where products with coatings that inhibit emissions are not suitable.

“ *How much formaldehyde in wood-based materials is hazardous?* ”

0.1 ppm of formaldehyde complies with the E1 standard required by law in Europe. The World Health Organisation (WHO) has confirmed this indicator as “Safe Level” based on its 2010 risk assessment. Thus, based on currently available knowledge, all products that comply with the 0.1 ppm value are absolutely safe.

EGGER offers products below the required limits for all of the standards mentioned above. With emission values below 0.05 ppm, DHF and flooring products meet the requirements of the “Blue Angel” environmental seal. With a formaldehyde emission concentration of less than 0.03 ppm, the melamine faced EURODEKOR board is on the product list of the Swiss Lignum. As a supplier to IKEA suppliers, we also produce rawboard that meets the CARB-2 standard.