



Formaldehyde measures goods

Form Guard

What is Formaldehyde?

Formaldehyde is one of the causative agent of sick house syndrome. The formaldehyde is one of the chemicals that is contained in an adhesive for pasting the furniture , wallpaper and flooring. Formaldehyde is emission into the room little by little from furniture and building materials. **When you are in a room that has been contaminated with Formaldehyde to cause headaches and dizziness and nausea, it can feel a stimulus to the eyes and throat, and in high concentrations can cause such as difficulty breathing.**

The Ministry of Health, Labor and Welfare in Japan provided guidelines of indoor formaldehyde concentration in 2000, it should be less than 0.08ppm (※ 1) ($100 \mu\text{g} / \text{m}^3$ or less at 20 to 23 degrees 30 minute average value). It is desirable on health. However, the reference value is too high in China and Southeast Asia compare to Japan, several months in newly built property is a state that can not be inhabited. In addition, as formaldehyde measures, there are variety of products, such as photocatalyst has been sold and applied, but decomposition effect of formaldehyde is low, it does not have yet to resolve.

Chemical building materials (walls, floor, ceiling)

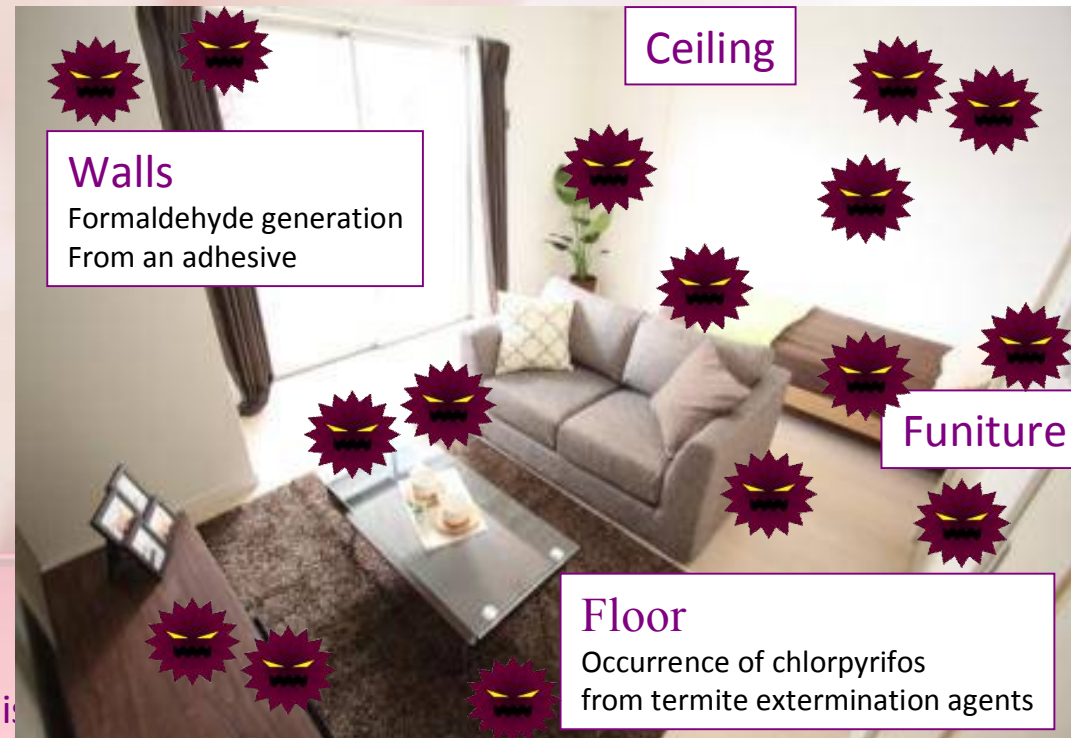
Combustion gas from the heaters, etc.

Airtight of housing

Lack of ventilation

Symptom

- ① Pain of the eyes and throat
- ② Headache, dizziness
- ③ Nausea, mood is bad
- ④ Difficulty breathing
- ⑤ Irritation to the skin
- ⑥ Poor concentration, weakness, malai



Features of the two types 『Formaldehyde』

In order to use the building materials that emit formaldehyde must be adapted to the F☆☆☆☆ (JIS standard).The "Form guard" is to be able to adapt to the F☆☆☆☆ by applying to the building material.

"Form guard" is adsorbed and decomposition in a short period of time the formaldehyde generated from the room, it can create a safe and comfortable indoor space.

◆Form Guard W (For furniture)

Form Guard is sprayed directly to the source of formaldehyde such as furniture and floors, carpet, and the back of the wallpaper, and adsorption and decomposition of formaldehyde. It will minimize the generation of formaldehyde.

◆Form Guard P (For wall)

Sprayed on a wall or the like, without losing the texture of the wall material, and adsorption and decomposition of formaldehyde in the indoor space.

What is F☆☆☆☆ (Four Stars)?

Grading	Law unregulated	Three star	Two Star	One Star
Dispray	F☆☆☆☆	F☆☆☆	F☆☆	Non
Formaldehyde emission rate ($\mu\text{g}/\text{m}^2\text{h}$)	Less than 5	5~20	20~120	Over 120
Formaldehyde emission amount (mg/l)	Less than 0.12	0.12~0.35	0.35~1.80	Over 1.80
Usage restrictions	Limitless Use	Allowed used up to 2 times the area of the floor area	Allowed used up to 0.3 times the area of the floor area	Disable

Emission rate: mg / l the weight of a substance dissolved in water (mg = 1/1,000g)

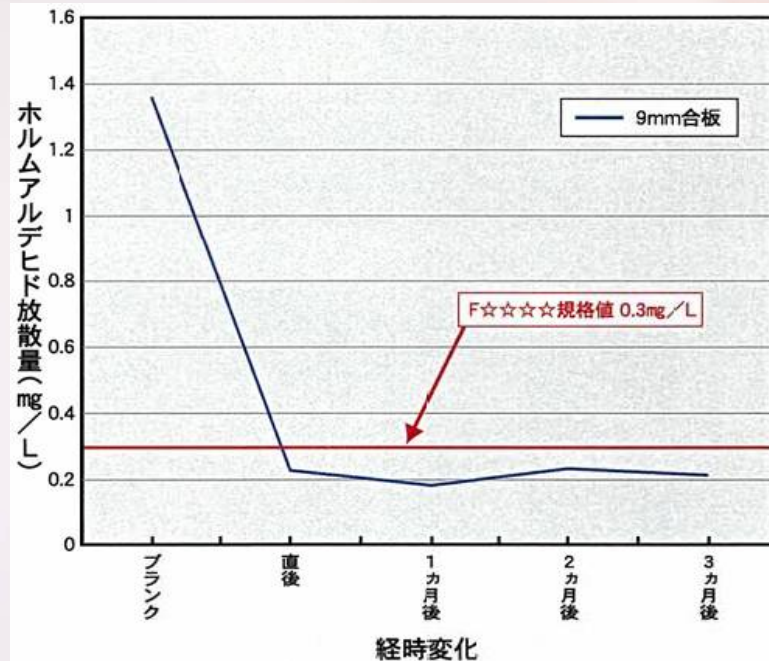
※Emission rate is small chamber method, emission rate is measured in desiccator method.

※About Unit Emission rate: $\mu\text{g} / \text{sqm}$ the weight of the substance to be dissipated from 1 square meter ($\mu\text{g} = 1/100$ million g)

Performance of Folmardehyde

◆Form Guard W (For furniture)

Change over time at the time of formaldehyde emission



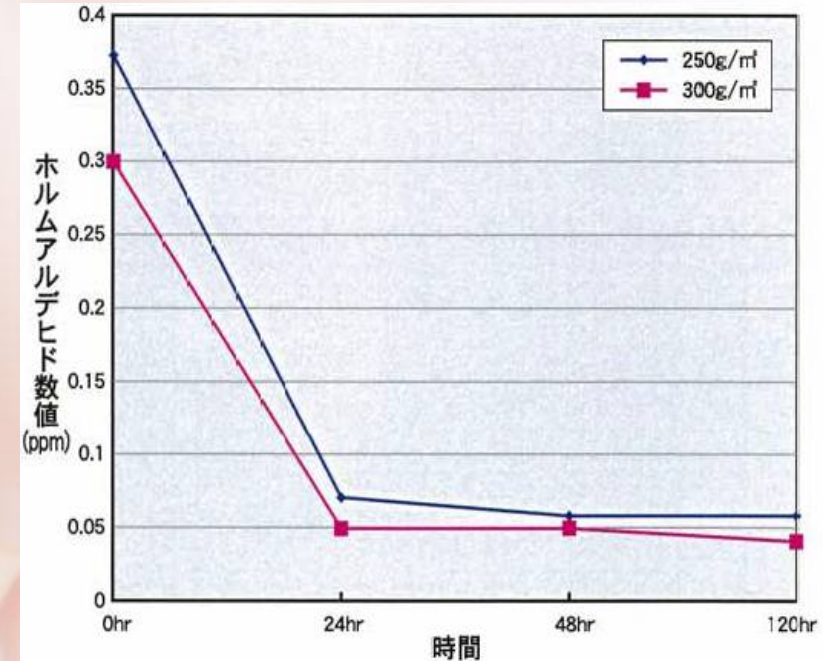
Terms of Use / Holm guard W

Coating weight: 3g / length² (back coating) Drying: 80 °C × 5 minutes

Measurement: glass desiccator method

◆Form Guard P (For wall)

Formaldehyde adsorption and decomposition effect



Terms of Use / Form guard P

1. chamber of 45L - it is a formaldehyde source in.
Put the specimen to F ☆ plywood (Initial concentration is 0.3 ~ 0.4ppm)
2. Measurement concentration in the chamber from 0 to 120 hours using the gas detector tube.
3. Chamber - Set the inner temperature 23 ± 2 °C.
4. specimen size = 150 × 150mm · heat = 12.5mm
5. The masking with aluminum foil tape on the back and side

Initial emission rate of Formaldehyde is highest rate, because it will decrease the emission rate with the passage of time. It will pass the test if you suppress the occurrence of three months formaldehyde from immediately after the application.