

Formaldehyde and Fiberglass Building Insulation

REVEALING THE FACTS

Questions have been raised about formaldehyde and its use in the manufacture of fiberglass insulation and its effect on Indoor Air Quality (IAQ). Confusion within the consumer and contractor sector has surfaced since the introduction of “formaldehyde-free” roll and batt products. The following information is provided to address commonly asked questions.

FORMALDEHYDE AND ITS PURPOSE

Trace amounts of formaldehyde can be contained in many building materials and items in the home, including engineered wood products, furniture, window treatments and consumer products. Formaldehyde is typically a pungent, colorless gas that is easily dissolved in water to facilitate its use. Guardian uses it as part of the phenol-formaldehyde (PF) resin system used to manufacture fiberglass insulation blanket products. PF resin is a component of the liquid binder made at our plants and is used to bond or “bind” the glass fibers together so batts and rolls will “recover” to their original size after being compression-packaged for shipment. All but trace amounts of formaldehyde in the insulation blanket are reacted or eliminated in the manufacturing process and captured by the pollution control equipment at our plants. Therefore PF resins have been used to manufacture fiberglass insulation products throughout the world for over 50 years. The use of PF resins has undergone continuous scrutiny by those affiliated with environmental and health agencies with the conclusion that there are no health problems with the traditional insulation products. These products are safe.

THE FACTS ABOUT GUARDIAN FIBERGLASS INSULATION

- Fact:** All Guardian Fiberglass products are tested by the Air Quality Sciences laboratory in Atlanta, GA on a quarterly basis for the emission of any volatile organic compounds (VOCs) including formaldehyde, and then certified by Greenguard Environmental Institute (Greenguard) - an independent, third-party certification agency that specializes in this type of testing.
- Fact:** The U.S. Occupational Safety and Health Administration (OSHA) has set an “action level” threshold for formaldehyde at 0.5 parts per million (ppm) which equals 500 parts per billion (ppb). [As defined by OSHA: *Action Level* means a concentration designated in 29 CFR part 1910 for a specific substance, calculated as an eight (8)-hour time-weighted average, which initiates certain required activities such as exposure monitoring and medical surveillance].
- Fact:** The standards established to achieve Greenguard product certification are considerably more stringent than those established by OSHA. The **Greenguard® Children and Schools** certification program meets the minimum requirements of California’s **CA Section 01350** for testing chemical emissions from building products used in schools, offices, and other sensitive environments. This must be met within 7 days with no preconditioning. This means that the formaldehyde levels in Guardian Fiberglass’ Greenguard Children & Schools certified products are 13.5 parts per billion (ppb) compared to the Greenguard Indoor Air Quality Certified products of 25 (ppb). These criteria for formaldehyde emissions are 46% more stringent than the standard Greenguard Indoor Air Quality Certification.
- Fact:** Guardian has continuously achieved Greenguard product certification since initiating this perpetual testing in 2002.
- Fact:** Formaldehyde is not used in the manufacture of any Guardian “white fiber” products such as AtticGuard Plus, UltraFit DS®, AsureR®, Perfect Fill®, Ultra™, or Monoglass™.

As always, Guardian continues to be committed to providing safe, quality products for our customers.

Putting the formaldehyde content of insulation in perspective

| Product | Formaldehyde Emission Rate (mg2/m-hr)* |
|---|--|
| Top coat, floor finish - after 22 hours | 4.66 |
| 1/4 inch UF particleboard | 1.58 |
| 5/8 inch particleboard underlayment | 0.508 |
| 1/2 inch hardwood veneer plywood | 0.17 |
| R-19 Fiberglass Insulation | 0.032 |

*"Emission Rates of Formaldehyde from Materials and Consumer Products Found in California Homes", T.J. Kelly, D.L. Smith and J. Satola, *Environmental Science and Technology*, 1999, 33, pp. 81-88

The California Integrated Waste Management Board Materials Emissions Study compared emissions of many building product categories. With respect to insulation:

- Two "alternative" and two "standard" insulation products were compared.
- The two alternative products both claimed to be "formaldehyde-free".
- **The emissions testing showed both the "formaldehyde-free" fiberglass and the "formaldehyde-free" cellulose products emitted measurable amounts of formaldehyde.**

Integrated Waste Management Board, State of California, *Building Material Emissions Study*, 2003, publication no 433-03-015



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