



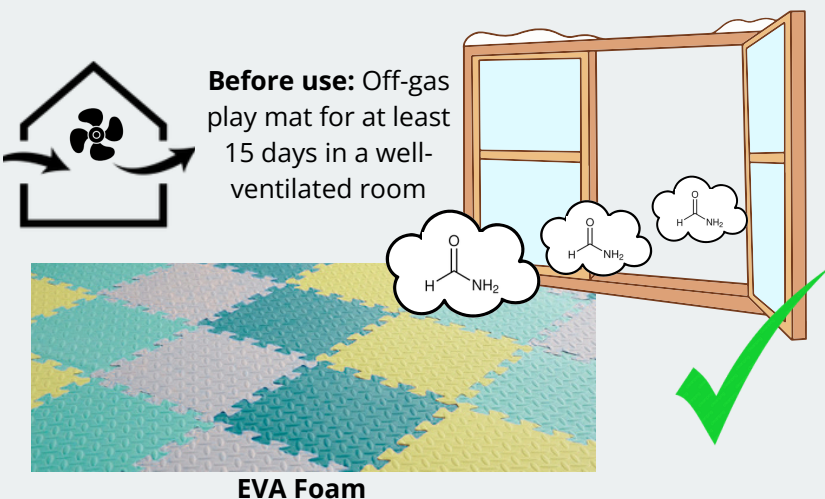
CHEMICALS IN EVA FOAM PLAY MATS

WHAT CHEMICALS ARE IN EVA FOAM PLAY MATS?

Play mats prevent injury and protect children from hard falls. Some of the most common play mats are soft bendable tiles that interlock like puzzle pieces. These plastic mats are often made with ethylene-vinyl acetate (EVA) high density foam. This type of foam is shock-absorbent and waterproof. EVA foam has generated concern because it can contain a chemical called formamide.

WHAT IS FORMAMIDE?

Formamide is a chemical present in some EVA foam products. During manufacturing, chemicals, like azodicarbonamide, are used to create soft and flexible foam. Azodicarbonamide can break down into formamide. Since formamide is a volatile compound, it can be released from play mats into the air, a process known as off-gassing.



EVA Foam



HOW ARE CHILDREN EXPOSED TO FORMAMIDE?

Small amounts of formamide can be slowly released from foam playmats over time. The largest amount of formamide is released when the mat is brand new. Infants laying down or crawling on the mat have the greatest exposure to formamide. Since children breathe more per minute and breathe more air per body weight compared to adults, children will often have a higher dose of off-gassed chemicals as compared to adults. Formamide can enter the body through breathing, eating, and through the skin. This chemical can irritate the skin, eyes, and respiratory tract. Scientists have not determined the level of formamide that poses a specific health risk for children.

DOES FORMAMIDE POSE A HEALTH RISK?

The European Union classifies formamide as a Category 1B reproductive toxicant. Based on animal research, formamide can cause damage to fertility or the developing fetus. Other known formamide health effects come from industrial studies, where workers are exposed to extremely high levels of formamide. Breathing in high levels of formamide for long periods may affect the lungs, heart, liver, and nervous system. The good news is that the amount of formamide children are breathing is typically low, particularly after the mat has off-gassed. More research needs to be done on the specific health effects of low-level formamide exposure.



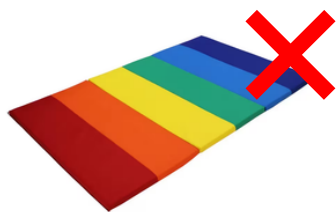
Cork



Wool



Cotton



PVC Vinyl



Vegan Leather

Read more about the health effects of PVCs in EHCC's [Plastics Factsheet](#) and [PVC Dolls Eco-Healthy FAQ](#); other volatile compounds in [Chemicals in Crib Mattresses and Nap Mats Eco-Healthy FAQ](#); and off-gassing in [Furniture & Carpets Fact Sheet](#).

WHAT ARE STEPS TO REDUCE FORMAMIDE EXPOSURE?

- Remove the mat from packaging and let it air out in a well-ventilated room away from children for at least 15 but preferably 25 days. This process allows the mat to "off-gas" or release potent concentrated chemicals into the air. During this off-gassing period, the majority of formamide that will be released is excreted.
- Increase air flow in the play room by opening windows and doors, placing fans in the room, and clearing vents of any blockages.
- Check the play mat for rips or tears to avoid pieces being ingested or becoming choking hazards.
- Buy mats that are PVC-free, Formamide-free, Flame-retardant free, PFAS-free, and third-party tested certifications.
 - OEKO-TEX® certification: tests textiles for over 1,000 harmful chemicals both regulated and non-regulated.
 - Global Organic Latex Standard (GOLS) certification: verifies latex mats contain 95% certified organic raw material and no harmful chemicals.

WHAT ARE SAFER ALTERNATIVES?

When possible, **select alternative options** to EVA foam mats. Some examples include:

- Cork Mats
- Wool Rugs
- Cotton play mats
- **Avoid PVC vinyl mats and vegan leather** since they are made from polyurethane or polyvinyl chloride (PVC) plastic.

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