

Frequently Asked Questions about Lead in Children's Toys

Updated FAQs, 13 August 2008

In recent weeks there have been repeated reports of overly high lead contents in children's toys made in China. The lead was contained in the paint with which the toys had been painted. As children put toys in their mouths and there is a risk of them swallowing parts of them, lead may only be released from them at levels that are not harmful to children. The manufacturers and importers of toys must, therefore, ensure that their products are safe. The Federal Institute for Risk Assessment (BfR) has compiled Frequently Asked Questions about lead in toys to provide information particularly for worried parents.

What is lead?

Lead is a naturally occurring heavy metal which is widespread in the environment, not least because of industrial processes. It ranks amongst the strong environmental toxins and accumulates in the organism. Lead is used as an admixture in numerous products like car batteries and also in some paints, glazes or ceramics.

Is lead harmful for human beings?

Like most heavy metals lead is toxic. Some symptoms of acute lead poisoning are vomiting, intestinal colic and constipation down to renal failure. Chronic lead poisoning can lead to anaemia, a feeling of faintness, loss of appetite, nervousness or weight loss.

Children are particularly at risk as, during this stage of development, their bodies are even more sensitive to lead. In their case elevated lead exposure can lead to irreversible nerve damage as well as to brain dysfunction.

How does lead reach children's toys?

The recent cases of lead detected in plastic toys in the course of official consumer product control was a component of the paints used to decorate the toys. In some cases, the paint contained such high levels that the currently applicable maximum levels were exceeded.

How dangerous is lead in children's toys?

The World Health Organisation (WHO) has established a value for provisional tolerable weekly intake (PTWI) for lead. This amount can be ingested life long weekly from all sources – food including drinking water, products including toys, the environment – without having to fear any adverse effects on health. It is 25 microgram (μg) lead per kilogram body weight and week. However, recent scientific studies indicate that no safe concentration range can be derived for the effect of lead on the central nervous system.

Several factors determine whether a lead-containing toy constitutes a health risk for the child playing with it. The decisive criterion is not the amount of lead contained in the product but how much lead is released from it and can be taken up by the child. The type of contact is also important. Does the child only touch the toy with his hands or also put it in his mouth. Does he chew on it and does this lead to the release of particles (toy material) or is there even a risk that entire parts of the toy could be swallowed?

How much lead may children's toys contain?

Toys may only contain a level of lead that does not release more than a maximum of 0.7 microgram per day when a certain amount of the toy material is swallowed and the lead contained in it is dissolved by gastric acid. This is specified in the valid Directive 88/378/EEC. The assumption is that a child can swallow approximately 8 milligram (mg) toy material a

day. To prevent the above value of 0.7 µg per day being exceeded, a maximum of 90 mg lead may be released from one kilogram toy material (European Standard EN 71-3). A far higher material intake is assumed in the case of finger paints. For that reason, no more than 25 mg lead per kilogram may be released. All children's toys must comply with these values.

The European Union is currently reviewing the 1988 toys directive. It may set new limit values for the release of lead from toys.

What happens when more lead is released from the toy than is permitted?

In principle, manufacturers and importers may only place toys on the European market that are not harmful for consumers. That can be safely assumed as long as the above-mentioned migration values are not exceeded. If toys illegally release higher amounts of lead, then the manufacturer or importer must ensure that they do not reach consumers. If, as in the recent cases, the toys have nevertheless found their way to the market, then they must be immediately withdrawn.

Can you tell whether a toy contains lead?

It is not possible to tell whether a toy has been decorated with lead-containing paint simply by looking at it. Chemical analyses are needed. Hence, it is particularly important for manufacturers to assume their responsibilities and for control authorities to be on their guard.