



f Melamine Cyanurate – new tests reveal stronger kidney toxicity than previously known, classification and labeling updated

16th July 2010

What is the result of new toxicity tests?

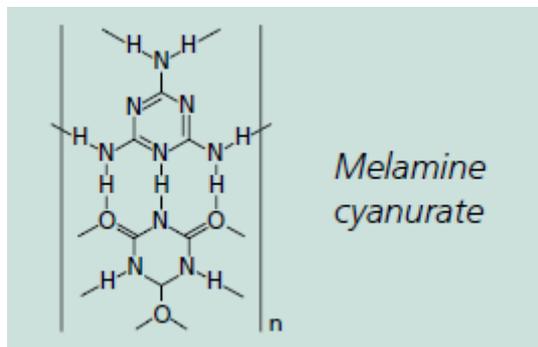
As part of the REACH registration process, melamine cyanurate (CAS 37640-57-6) was tested in 2010 according to certain environmental and toxicological aspects. As part of a pre-study, rats were fed melamine cyanurate for one week. The substance revealed a greater toxic hazard to the kidney than was previously known. Therefore, the classification and labelling of melamine cyanurate needs to be changed to:

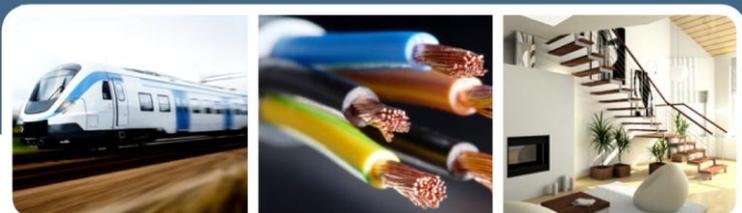
- Xn; R48/22 = “danger of serious damage to health by prolonged exposure” / “harmful if swallowed” according to Directive 67/548/EWG or 1999/45/EC and
- STOT (RE) Cat.2 (H373) = “specific target organ toxicity (repeated or long term exposure)” according to regulation (EC) 1272/2008.

Further testing is still ongoing to confirm the findings. A 90-day feeding study is ongoing at the National Center for Toxicological Research (NCTR) in the USA. Classification and labelling will be reviewed after the results of this study have been published.

What is melamine cyanurate?

Melamine cyanurate (MC) is a white solid powder. As a flame retardant it is mainly used for unfilled and mineral filled polyamides. These polymers are used for electric and electronic parts like connectors and switches. About 10% to 15% are added to the polymer to achieve the necessary fire rating. MC is often used as synergist in combination with phosphorus based flame retardants. Minor uses of MC are also in formulations for polypropylene and thermoplastic polyesters for cables.





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What was known about the toxicity of melamine cyanurate before?

Melamine and its derivatives show toxic effects on the kidney and sometimes bladder, because salt crystals can form in the kidneys which clog the fine drainage tubes. The combination of melamine with cyanurate forms a particularly insoluble salt and therefore has a high tendency to cause this effect. Melamine cyanurate is not genotoxic, it is not irritating and has no sensitizing properties.

Who is affected and what protective measures should be taken?

As a consequence of the new toxicity results, suppliers of melamine cyanurate have changed to the new labelling and are currently updating their safety data sheets (SDS).

People handling the pure chemical melamine cyanurate like production and polymer formulation workers are most affected and should upgrade their workplace safety precautions accordingly. Since the substance is often used as a powder with low particle sizes, breathing of dust should be avoided. A particle filter with high efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P3 or FFPE) should be used. In addition, gloves as well as a local exhaust and ventilation in place are recommended.

Consumers and users of end products (e.g. electric and electronic equipment) which contain melamine cyanurate do not get into direct contact with the substance and any ingestion of it is very unlikely, because it is firmly embedded in the polymer matrix. It will also not evaporate from polymers because the vapour pressure of melamine cyanurate is extremely low.

Where can you get further information?

For further information please contact the pinfa secretariat (pinfa@cefic.be) or melamine cyanurate producers.