

Cadmium and selected cadmium compounds

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Executive summary

Health Council of the Netherlands



At the request of the Minister of Social Affairs and Employment, the Health Council of the Netherlands evaluated the effects of cadmium, cadmium carbonate, cadmium chloride, cadmium fluoride, cadmium hydroxide, cadmium nitrate, cadmium oxide, cadmium sulphate, and cadmium sulphide, (further referred to as 'cadmium') on reproduction. This advisory report was drafted by the Subcommittee on the Classification of Reproduction Toxic Substances of the Dutch Expert Committee on Occupational Safety (DECOS) of the Health Council, hereafter called the Committee. The Health Council has a permanent task in assessing the hazard of substances to which man can be occupationally exposed. More information about this task can be found at www.gezondheidsraad.nl.

Cadmium use

Cadmium is a metal that is primarily being used in batteries, though cadmium can also be a

component of pigments and coatings. Workers in industries that use or produce cadmium and cadmium compounds are at risk for increased cadmium exposure. In particular, workers whose jobs involve the heating of cadmium such as welding and grinding are at risk of cadmium exposure, as cadmium vapours can be released.

Classification based on evidence

To assess effects on reproduction, the Committee evaluates the effects on male and female fertility and on the development of the offspring. Moreover, the Committee considers effects of a substance on lactation and on the offspring via lactation. If the data indicate hazardous properties, the Committee recommends classification in a hazard category. The classification is performed according to EU-regulation (EC) 1272/2008.

Research consulted

Epidemiological studies are available on effects on fertility and effects on development. Most of these studies show associations with exposure to cadmium, but provide insufficient evidence. In addition, many animal studies have been conducted. These studies, which evaluated cadmium chloride and cadmium oxide, indicate that cadmium exposure can cause effects on fertility and development.

Based on measured cadmium levels in breastmilk in humans, the Committee considers it likely that these may cause adverse effects via lactation.

Recommendations to the State Secretary

Based on the scientific data available, the Committee recommends to classify cadmium, cadmium carbonate, cadmium chloride, cadmium fluoride, cadmium hydroxide, cadmium nitrate, cadmium oxide, cadmium sulphate, and



cadmium sulphide, for effects on fertility, for effects on offspring development and for effects on or via lactation.

The Committee's classification proposal:

- for effects on fertility: classify these substances in category 1B (presumed human reproductive toxicant), and label them with H360F (may damage fertility);
- for effects on development: classify these substances in category 1B (presumed human reproductive toxicant) and label them with H360D (may damage the unborn child);
- for effects during lactation: classify these substances for effects on or via lactation and label these substances with H362 (may cause harm to breastfed babies).



The Health Council of the Netherlands, established in 1902, is an independent scientific advisory body. Its remit is “to advise the government and Parliament on the current level of knowledge with respect to public health issues and health (services) research...” (Section 22, Health Act).

The Health Council receives most requests for advice from the Ministers of Health, Welfare and Sport, Infrastructure and Water Management, Social Affairs and Employment, and Agriculture, Nature and Food Quality. The Council can publish advisory reports on its own initiative. It usually does this in order to ask attention for developments or trends that are thought to be relevant to government policy.

Most Health Council reports are prepared by multidisciplinary committees of Dutch or, sometimes, foreign experts, appointed in a personal capacity. The reports are available to the public.

This publication can be downloaded from www.healthcouncil.nl.

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