

9 March 2016

Q&A on 2-Mercaptobenzothiazole (MBT)

What is 2-Mercaptobenzothiazole?

2-Mercaptobenzothiazole (MBT) is an industrial chemical that is used principally in the manufacture of rubber.

What were the results of the IARC Monographs evaluation of MBT?

The Working Group of Volume 115 of the IARC Monographs classified MBT as *probably carcinogenic to humans (Group 2A)* based on *limited evidence of carcinogenicity in humans* that it causes **bladder cancer**, and *sufficient evidence of carcinogenicity in experimental animals*.

What evidence is this classification based on?

An increase in the incidence of bladder cancer was observed in two studies of chemical plant workers exposed to high amounts of MBT. In studies in experimental animals, an increase in the incidence of tumours was observed in rats and mice exposed orally to MBT.

What does the classification mean?

The IARC Monographs evaluation is a hazard classification. It indicates the strength of the evidence that MBT can cause cancer. The probability of developing a cancer will depend on factors such as the type and extent of exposure and the strength of the effect of the agent. The probability of developing a cancer is evaluated through a further process called risk assessment.

What types of studies in exposed humans were evaluated?

The IARC Monographs classification was based only on studies of cancer in chemical plant workers, because there were no studies of cancer in members of the general population who may have been in contact with rubber-containing goods.

Who is exposed to MBT, and how?

In the studies evaluated by the IARC Monographs Working Group, exposure to high amounts of MBT in humans occurred in workers in the chemical industry, but workers in the rubber or tyre-manufacturing industries may also be exposed to MBT. The general public may be exposed to smaller amounts of MBT by skin contact with some rubber-containing goods, such as gloves and footwear. MBT has also been detected in urban air, probably because of tyre abrasion.

It is important to stress that the exposure of the general public to MBT from using rubber-containing goods is much smaller than the exposure of workers in chemical plants, and that the risk of developing cancer from exposure to rubber-containing goods has not been studied.

Are adults at risk from condoms, or infants from baby bottle teats or soothers?

The Working Group had no data available about the presence of MBT in condoms. No MBT was found in baby bottle teats, and there was only one example of the presence of small amounts of MBT in a soother.

Should the risk posed by MBT be evaluated?

Health and regulatory agencies may wish to include IARC evaluations in their consideration of actions to prevent exposure to potential carcinogens. IARC does not recommend regulations, legislation, or public health interventions, which remain the responsibility of individual governments and other international organizations.