

CAS 62-53-3

Substance name Aniline

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### Toxicity

Aniline is classified as a carcinogen by a number of authoritative sources.<sup>1,2,3</sup> Tumors of the spleen are observed in test animals. Bladder cancers have been reported in occupationally exposed groups but co-exposures with other chemicals limits conclusions. Animal testing also shows that aniline damages red blood cells and causes toxic effects in the blood system (i.e., spleen, bone marrow, kidney, and liver).<sup>2</sup> Overexposure in humans causes methemoglobinemia and cyanosis.<sup>2,4</sup>

### Exposure

Aniline is used primarily as a chemical intermediate in production of MDA (methylene di-aniline), a starting product for polyurethane plastics. In the rubber industry, aniline is used in the manufacture of antioxidants and rubber accelerators. It is also used in the manufacture of dyes, agricultural chemicals, optical whitening agents, resins, marking inks, perfumes, and certain pharmaceuticals. Aniline has been an ingredient in household products including shoe polish and inks.<sup>2,4,5</sup>

Aniline has been detected in a variety of children's products including balloons, marker pens, infant bed linens, and the outer material of an infant jacket.<sup>6</sup> The CDC has not assessed whether aniline is present in peoples' bodies in the U.S. but biomonitoring in the general population of Bavaria showed detectable levels of aniline in urine of 94% of participants.<sup>7</sup> Aniline detected may be from degradation of polyurethane plastics.

### References

1. U.S. EPA Integrated Risk Information System (IRIS) for Aniline (CASRN 62-53-3). Last revised 1994. <http://www.epa.gov/ncea/iris/subst/0350.htm>.
2. European Commission Joint Research Centre: Institute for Health and Consumer Protection, ORATS. Summary Risk Assessment Report for Aniline (CAS 62-53-3) <http://ecb.jrc.ec.europa.eu/esis/?PGM=ora>
3. California Office of Environmental Health Hazard Assessment. List of Chemicals Known to the State to Cause Cancer or Reproductive Toxicity. Feb 5, 2010. [http://www.oehha.org/prop65/prop65\\_list/files/P65single020510.pdf](http://www.oehha.org/prop65/prop65_list/files/P65single020510.pdf).
4. "Aniline" in REPROTEXT Database Version 5.1 Greenwood Village, CO: Thomson Reuters (Healthcare) Inc. (accessed 2009).
5. Health Canada and Environmental Canada (1994) Priority Substances Assessment Report: Aniline (Catalogue No. En 40-215/35E) <http://www.hc-sc.gc.ca/ewh-semt/pubs/contaminants/psl1-lsp1/index-eng.php>.
6. Danish Ministry of the Environment, Environmental Protection Agency. Surveys on Chemicals in consumer products. [http://www.mst.dk/English/Chemicals/Consumer\\_Products/Surveys-on-chemicals-in-consumer-products.htm](http://www.mst.dk/English/Chemicals/Consumer_Products/Surveys-on-chemicals-in-consumer-products.htm).
7. Kütting, B, et al. (2009) Monoarylamines in the general population – A cross-sectional population-based study including 1004 Bavarian subjects. *Int J Hyg Environ Health* 212: 298-309.