



RUBIAC Statement on Occupational Cancers

Updated December 5th 2007

Executive Summary

Historically, the rubber industry has been associated with increased risk of bladder cancers and this has been shown to be associated with exposure to a contaminant β naphthylamine present in Nonox S until 1949. However, more recent studies of health of workers in the rubber industry employed since 1982 have shown that increased risks of cancers are no longer present in the rubber industry. However, a small excess of multiple myeloma was observed in the general rubber goods sector only and this is under further investigation. Although these findings are reassuring, nevertheless controlling exposure to rubber process dust and rubber fume to as low as reasonably practicable below the exposure limits should continue to be the priority for the rubber industry.

Statement on Occupational Cancers

1. This statement has been prepared by the Rubber Industry Advisory Committee (RUBIAC) which includes employer and employee representatives from the rubber industry and the Health and Safety Executive (HSE).
2. It is known that in the past workers in the UK rubber industry suffered from a higher incidence of bladder cancer than the male population in general. The cause of these tumours was identified in 1949 as β naphthylamine, present as a contaminant in one of the chemicals used in rubber compounding called Nonox S. As soon as the discovery was made all use of Nonox S and similar contaminated antioxidants was immediately stopped.
3. Epidemiological studies carried out by the HSE and Birmingham University (in association with the British Tyre Manufacturers Association (BTMA) ([Create LINK to website where study is posted](#)) (formerly the British Rubber Manufacturers Association) eventually demonstrated that the increased number of bladder tumours disappeared after the removal of the contaminated chemicals in 1949.
4. Unfortunately, however, these studies also reported that there were slightly more stomach and lung cancers occurring in rubber workers who were employed in the industry between 1945 and 1976 than would normally be expected in the general UK population. The stomach cancers appeared to be related to rubber dust exposure and the lung cancers to vulcanising fume exposure.
5. In 1986 legally binding exposure limits for rubber process dust and fume were introduced in the UK. In order to test the effectiveness of these limits and the impact of other improvements in working conditions the BTMA asked Professor Sorahan of Birmingham University to carry out a new study of all individuals first employed in the industry between 1982 and 1991. This study was published in 2001 and revised in 2006.
6. The mortality and cancer incidence analysis from this study of 8651 recent entrants to the UK rubber industry, employed for 12 months or more between 1982 and 1991, carried out in 2006, indicated that mortality and cancer incidence were not above the

levels that would be normally seen in the UK general population for both lung and stomach cancer, although the latter finding was based on small numbers. Although the findings should be treated cautiously because of the relatively short follow-up, they do provide some reassurance that if there was a true lung or stomach cancer risk from working in the industry in the past, it looks like it is no longer present. A small excess of multiple myeloma was observed in this study in the general rubber goods sector only. Although this may turn out to be a chance finding a further investigation is underway to look into this.

7. The finding of this recent analysis are nevertheless encouraging and a further early indication that improved working conditions have been effective in reducing ill health. The agents causing cancer have not been eliminated (as was the case with Nonox S) so it is important that such positive findings do not lead to any reduction in the use and maintenance of preventive measures in individual workplaces.
8. The current exposure limits, known as workplace exposure limits (WELs), are 6 mg/m³ (for rubber process dust) and 0.6 mg/m³ (for rubber fume). Rubber companies generally monitor the air in their factories annually. A survey in 1996 /7 by HSE showed that while personal exposure levels were typically well below the workplace exposure limits, assessment of risk, control of fume, standards of cleanliness and ventilation needed to be given high priority to maintain acceptable levels of control. RUBIAC is of the opinion that it is possible to achieve exposure levels of at least 50% of the current WELs. The key to achieving such levels is to ensure good control of those processes where rubber process dust and rubber fume are emitted. Simple step by step advice for undertaking assessments is freely available at HSEs COSHH essentials website www.coshh-essentials.org.uk
9. The HSE, the Trade Unions and the industry associations will be closely monitoring future results. Keeping well within the legal workplace exposure limits is the number one health priority for the rubber industry. More detailed publications for those with managerial or technical responsibilities are available from HSE and the BTMA. This statement will be updated as new information becomes available.

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References

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2. Abid Dost, J. K. Straughan and Tom Sorahan: A cohort mortality and cancer incidence survey of recent entrants (1982–91) to the UK rubber industry: findings for 1983–2004; *Occupational Medicine* 2007; 57: 186–190