
This is an excellent reference text for both occupational hygienists and analytical chemists with a key role to play in supporting occupational hygiene sampling and analytical programmes. Volume 4 serves as a useful and logical continuation of the previous three volumes, which, taken together, present analytical methods for 97 agents of occupational exposure concern ranging from metals such as cadmium and hexavalent chromium, to organic compounds such as styrene and glutaraldehyde.

This series of publications have been prepared as a collaborative effort by the German “Analytical Chemistry” Working Group of the Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area of the Deutsche Forschungsgemeinschaft (DFG) and the Analytical Working Group of the “Chemistry” Expert Committee of the Berufsgenossenschaften (the Employment Accident Insurance Institutions of Germany). Intended as a contribution to the repertoire of analytical methods for occupational hygiene monitoring, the stated primary aim of the publication(s) is the protection of health at the workplace.

Volume 4 encompasses 15 methods for determining carcinogenic substances in workplace atmospheres, spanning from p-chloroaniline to diesel engine emissions. The book is well presented, clearly written and carefully laid out. Moreover, it offers within each method a significant level of helpful detail to its reader, covering technical specifications, calibration, quality assurance and testing requirements in full. Thoughtfully, the author(s) also explain the strategic advantages of the method, one intention presumably being to allow occupational hygienists and analysts to compare the method directly with, for example, an alternative NIOSH, OSHA or HSE MDHS method. This is particularly valuable if the hygienist needs to collect multiple samples in order to determine the co-presence of chemically related agents or avoid interfering factors. As the practising hygienist knows only too well, the choice of the sampling method(s) to be employed are frequently determined by the choice and scope of an appropriate analytical method.

For some agents, the methods offered bear some strong similarities to the style of analytical methods published in scientific journals. For example, the authors cite the type and manufacturer of apparatus (e.g. gas chromatograph) utilised in the development of the analytical method instead of citing the use of the equipment in more generic terms. This raises some interesting questions about whether readers may interpret the method as being applicable solely in tandem with the use of apparatus made by a single manufacturer. Although this is acceptable in published papers, there is some debate about such referencing in method texts, and more generic references to analytical apparatus may be seen as more appropriate unless there are exceptional circumstances (e.g. a single manufacturer or a technical patent).

For some methods cited in the text, the methodological approach used may seem a little outdated. For example, a sampling and analytical method for ethylene oxide is incorporated which includes the use of activated carbon tubes for air sampling, and carbon disulphide for subsequent solvent-desorption of the charcoal and GC analysis of the analyte. However, today in many parts of Europe (and further afield, e.g. USA) the use of technically superior adsorbents such as graphitised carbons and carbon molecular sieves (e.g. Spherocarb™) have replaced activated charcoals, and automated thermal-desorption methods are increasingly used as a means of avoiding the use of toxic solvents such as CS₂ as well as significantly improving the limits of analytical detection. These newer methods and relevant substances sampled and analysed by them are referenced in many readily available contemporary texts (e.g. HSE MDHS 80). Accordingly, it could be argued that the inclusion of both solvent-based and more modern thermal-based analytical methods for the analysis of ethylene oxide would have added value and presented the most recent state-of-art technique for the intended user.

Nonetheless, in summary the book has a great deal to offer. The text is easy to read and understand, and sampling and analytical requirements are explained in a straightforward, comprehensive and readily understandable way. Furthermore, the authors have made

In 1977 there occurred an event unnoticed at the time, which will have a great impact on occupational health history, and industrial social history generally. An American court dealing with a personal injury case against the asbestos manufacturer Turner & Newall issued a ‘non-destruction directive’, preventing destruction of any relevant documents. This and later orders by American courts led the company to establish an archive of a million pages of documents, eventually housed at Trafford Park in Manchester. In 1991, Chase Manhattan Bank, also suing T&N, won a major discovery order which gave them access to this archive and to others. The British courts had proved weak in getting the company to divulge relevant material, but Chase’s lawyers made the documents widely available. Chase eventually lost their suit, but the cat was out of the bag. The material has given rise to radio and television programmes and journal articles, and now this book.

The result is absorbing, horrifying and sobering. Through the decades the company repeatedly blamed past conditions for present disease, while internal and external observers continued to report bad conditions and frank breaches of the (weak) regulations, right up to the 1970s. The company’s board could not believe that its very profitable product was all that dangerous, and saw conspiracy by outside extremists as largely responsible for mounting concern about disease. The book documents resistance to unfavourable post mortem and inquest results, and where compensation was given it was often a lump sum of a few tens of pounds, or a weekly payment of a few shillings. Many of the victims gratefully accepted the paternalistic assurances and handouts to relieve their poverty and pain; but what alternative did they have?—for the early decades it was beyond the expectation of British workers to successfully employ solicitors and to sue their former employers. Tweedale writes of them as ‘victims “twice over”: their health ruined by their job, they were then cheated by an inequitable social and political system’. The employers resisted new regulations, delaying them for years. Often no doubt the company honestly believed that the new regulations were unnecessary, but every now and then a worse attitude shows through. With the death toll mounting around him, one manager wrote of the forthcoming 1969 regulations, ‘If, however, we demonstrate, by a token effort only of ostensible intention to comply with the regulations, it is conceivable that we can ward off the evil day when asbestos cannot economically be applied’.

Geoffrey Tweedale is at the Centre for Business History at Manchester Metropolitan University. He has arranged the mountain of material with great skill to produce a well-documented and very readable account. He is clearly strongest when dealing with the more conventional business history, and it is when he deals with material closest to occupational hygiene that he comes to grief. This is foreshadowed in the Preface, by the very surprising remark ‘...occupational health (or, as it was then known, industrial hygiene)’. His discussion of the generation and application of exposure standards and hazard control, particularly in the final chapter, is confused and neglects the literature of the subject. He feels that it was the role of doctors as professionals to campaign for a ban, but criticises the one professional group which did try to produce better standards—the BOHS working party—as ‘a self-appointed committee which did not have a single trade union representative’. He recognises that ‘it is not the actual risk that matters, but the public’s perception of it’ (p. 290), but on the next page he argues that rational risk analysis would solve the problems.

Tweedale also leaves the impression that the control limits propagated in association with the 1969 regulations were enforceable, but this is not so: they were in guidance only. The regulations referred to ‘dust consisting of or containing asbestos to such an extent as is liable to cause danger to the health of employed persons’. It was a major problem for inspectors that if they wanted to prosecute for an exposure to chrysotile of, say, 10 fibres/ml over a sin-