

actively in the fascinating field of 'wet' surfaces. (The book does not cover high-vacuum surfaces.) Each of the 12 chapters can be read independently, but cross-references are given, and a lot of references at the end of each chapter lead to the original literature. 'Applied Surface Thermodynamics' is not a textbook for beginners. Basic knowledge from, for example, Adamson's 'Physical Chemistry of Surfaces' is pre-supposed. Thus, the book is highly recommended for experts and also for students already experienced in surface science.

Horst Ludwig

Universität Heidelberg, Institut für Pharmazeutische
Technologie und Biopharmazie, Gruppe Physikalische
Chemie, Im Neuenheimer Feld 346, 69120 Heidelberg,
Germany

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Isolation Technology – A Practical Guide

T. Coles (Ed.), 322 pp. Interpharm Press, Buffalo Grove,
IL, USA, 1998, ISBN 1-57491-059-0

Separating a working area from the operator, protecting the operator from a working process, creating a controlled work space of a well defined quality – all these issues are covered by the term Isolation Technology, which is now widely used at aseptic filling, sterility testing, pharmaceutical production of biologically active or toxic materials and hospital pharmacy work. Tim Coles' book provides, in 10 chapters, an overview of various aspects of isolation technology starting with the general concept on materials used for isolation, the air handling (filtration, pressure and flow regimes) and the methods by which the work inside an isolator can be assessed. The next section is devoted to a review of transfer methods including schematic illustrations of different types of lockchambers, waste and transfer ports as well as operational considerations concerning transfer of materials. An extra chapter emphasizes the importance of control systems and the isolator instrumentation, such as control and monitoring of temperature and humidity or the measure of air flow rates.

The author spends about one third of the book making the reader familiar with these basic concepts of isolation technology. The second part of the book focuses on detailed considerations for a design specification and pro-

ject development to give an idea of what regulatory demands have to be achieved for the successful implementation of an isolation unit and what standards and guidelines have to be followed. Examples are given for operational qualification documents following the FDA-preferred format or for the points that should be included into a performance qualification to fulfil the overall design requirements.

Having discussed the setup of an isolator system the next chapter is concerned with the housekeeping of such a unit. A relatively broad room is given to the explanation of miscellaneous methods of sterilization by wet processes and fogging processes using different types of gasses. Decontamination problems with pathogens or recombinant DNA are only quickly mentioned because these matters are beyond the scope of the book.

After consideration of all stages of setup of an isolator facility the author continues with a short overview on operator training, how to validate the system physically and microbiologically and on the kind of process documentation. This special issue is in close context with regulatory affair aspects, which are outlined in the last but one chapter. Here, in detail, the FDA perspective on isolation technology is summarized.

In the final chapter two case studies are exemplarily described to give the reader an impression of real-life situations. The book closes with a literature list, which is only of restricted value, since many references refer to conference contributions or congress proceedings, which are not directly available. On the other hand, the literature list is followed by a very detailed glossary and an extensive list of world-wide resources, including consulting or validation support services.

In summary, the chapters are clearly arranged and the book is easily readable, so it can be used as guidance during the implementation of an isolation facility. It covers all important aspects of isolation technology and can be recommended to all those interested in this area.

Gert Fricker

Institut für Pharmazeutische Technologie und
Biopharmazie, Im Neuenheimer Feld 366,
69120 Heidelberg,
Germany

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