The importance of carrying detailed shipping papers in plain sight readily available is stressed.

The nine classes of HMs are: explosives, gases, liquids (flammable and non-flammable), flammable solids, oxidizing agents and organic peroxides, poisons (usually referred to as toxic), radioactive materials, corrosives, and miscellaneous hazardous materials.

Table 6 of 172.101 lists details mandatory for labels, including color, size, symbol, and hazard class.

In addition to the CRF manual, the U.S. Department of Transportation (DOT) also publishes a *DOT Emergency Response Guidebook*, with details as to emergency actions. A 24-hour emergency response phone number is required, for instance.

Damaged packages should not be shipped or stored, but returned to the packer for re-packing. Separation of incompatable materials also is important to the shipper in the final placement in truck or train.

In conclusion, this is a very "busy" tape, and the numerous references to specific sections of the regulations will doubtlessly require more than one viewing to obtain best results. A quiz to be given to viewers is a useful addition.

HOWARD H. FAWCETT

Safety and Health in the Use of Chemicals at Work — A Training Manual, by Abu Bakar Che Man and David Gold, International Labour Office, Geneva, Switzerland (available in the U.S. from ILO Publications, 49 Sheridan Ave., Albany, NY 12210), ISBN 92-2-106470-0, 1993, 78 pp. (paperback), SF 17.50 or $14.00.

For years there has been the need for a practical, largely non-technical manual on chemical safety and health, which can be used to orient or train workers who handle or use chemicals in their daily activities. This volume is such a "training manual", even though it may need to be modified or supplemented slightly for the particular audience and activity.

This is a production of the ILO's contribution to the International Programme on Chemical Safety. Five major aspects, each filling a chapter, and supplemented by drawings, are discussed. These include: (1) health hazards due to chemical exposure, (2) fire and explosion hazards, (3) basic principles of accident prevention, (4) chemical emergency procedures, and (5) management of a chemical control programme, followed by four annexes. The discussion begins by stressing that an up-to-date label and a current chemical data sheet (known in the US and Great Britain as MSDS) should be on hand and understood. Once hazards are identified, effects of exposure on various parts of the body are noted, with examples. Practical methods of minimizing exposures, such as ventilation and substitution of less-hazardous materials are discussed

and illustrated. The routes of entry of chemicals into the body are noted in some detail. Examples of chemicals with specific effects are included.

Fire and explosion hazards are analyzed, and the application of this information to fire protection is clearly shown. Various ignition sources are stressed, including caution to prevent the mixing of incompatible chemicals. Importance of the proper extinguishing agent for fires (there are at least 22 in use in the world today) is included.

Basic principles of accident prevention are reviewed, such as elimination or substitution, shielding or distance, removal of fumes and vapors, use of personal protective equipment (for eye and face, breathing by use of respiratory equipment of the proper type for the job at hand, wearing of chemical resistant clothing, gloves, and proper shoes). Safe storage of hazardous chemicals is clearly illustrated and recommended.

Emergencies can happen in spite of all precautions. Hence, chemical emergency procedures, paying full attention to a well-organized and publicized emergency plan, includes evacuation if necessary, and sources of specific help and medical evaluation before work with the materials begins.

This is an excellent training manual. I should suggest, however, that in future editions degrees F are given along with degrees C, as for other units used in the U.S. and Great Britain. Eye protection should be stressed more strongly. Emergency phone numbers — such as the CHEMTREC emergency number 1-800-424-9300 or 1-800-262-8200, or the American Chemical Society Chemical Information number, 1-800-227-5558, option 6 — are available to callers with chemical problems anywhere, and should be included.

I recommend this volume; it is a most practical training aide.

HOWARD H. FAWCETT

Calculated Risks, The Toxicity and Human Health Risks of Chemicals in our Environment, by Joseph V. Rodricks, Cambridge University Press, Cambridge, Great Britain, 1992, 256 pp. (hardcover) with index plus preface and prologue of xxv pp., ISBN 0-521-41191-2, $22.95.

Although written to provide the layperson with an overview of toxicology, this book would serve well as introductory material for anyone interested in the fields of toxicology, carcinogenesis, or risk assessment. To capture one's attention, the story of Turkey X disease in Britain, leading to the discovery of aflatoxin, is presented in the prologue. The following chapters then cover some elementary aspects of organic chemistry, the development of chemical industry, advances in analytical chemistry (which often complicate regulatory matters), metabolic processes, and the relationship of metabolism to toxicity, where both acute and chronic aspects are discussed. There is a chapter on carcinogenesis which leads into assessment of risks, societally acceptable

SSDI 0304-3894(93)E0046-5