Journal of Hazardous Materials, 9 (1984) 383—396
Elsevier Science Publishers B V , Amsterdam — Printed in The Netherlands

Book Reviews

Fire Protection Handbook, 15th edn , National Fire Protection Association, Batterymarch Place, Quincy, MA 02269, U S A , 1981, 1358 pages, NFPA Number FPH1581, $60

When the National Fire Protection Association, a private non-profit organization dedicated to the protection of life and property from unwanted fires and related disasters, published the first edition of this handbook in 1896, fire-fighting with hose streams and bucket brigades was still the norm Over the years, the NFPA has operated to raise the professional and scientific aspects of fire prevention, and this 15th edition contains the distilled essence of that work

While much of the material in this edition is, in fact, related to fire fighting and the protection of human occupancy from fires, the chemist, engineer, and environmentalist will find much of value in it Even a cursory reading of Section 4, Fire Hazards of Materials, which occupies 131 pages, will furnish the reader with respect for the fire and pyrolysis aspects of this combustible world Starting with wood and wood-based products, the chapter includes fibers and textiles, flammable and combustible liquids, gases, chemicals in general, explosives and blasting agents, plastics (further broken down into thermosets, thermoplastics, and elastomers, and including simple tests for identifying the more common plastics, and the fire behavior of plastics along with treatment to minimize combustion rates), dusts (including an excellent table of the explosion characteristics of various dusts which extends over seven pages with fundamental data on the individual members), metals (including magnesium, titanium, sodium, lithium, potassium, zirconium, hafnium, calcium and zinc, as well as metals not normally considered combustible such as aluminum, Al alloys, iron and steel), and radioactive metals including thorium, uranium and plutonium Systems of identification of the hazards of materials are presented, including the NFPA 704-M system which, for some reason not understood by this reviewer, has never achieved its associated acceptance The placarding of hazardous cargoes is noted in the 1981 frame, nothing more than passing mention is made of the U N system using the four digit numbers (such as 1203 instead of spelling out "gasoline"), which is now en vogue and presents much greater problems of identification to emergency personnel

Other major sections of interest to scientific personnel include fire hazards of industrial occupancy, broken down into electrical power sources, textile manufacturing, plastics fabrication, rubber products, wood products, furniture making, pulp and paper mills, paper products, printing and publishing, machine shops, vegetable and animal oil processing, clay products, asphalt, and dry cleaning plants. Process fire hazards are discussed in many processes, storage practices and hazards and special fire problems (such as electronic

computing/data processing equipment, laboratories, medical areas, pesticides and electrostatic ignition) are included Fire extinguishing systems are explored, going beyond water to carbon dioxide, halons, dry chemicals, and foams, as are special combustible metal agents. Organizations with fire protection interests in the U.S and in the U S Government are listed in detail In general, this book is a most valuable reference in its field, this being human's friend yet, at time, a deadly foe

H H FAWCETT

Encyclopaedia of Occupational Health and Safety, by Luigi Parmeggiani (Ed), 3rd revised edn., International Labour Organization, CH-1211, Geneva, Switzerland, 1983, in two volumes, 2538 pages, available from the ILO offices in member countries, US$155, postpaid

To adequately review this massive tome would require more pages than practical, for this edition which weighs 6810 grams (15 pounds) contains 1150 articles prepared by 900 specialists from 60 different countries and 20 international organizations It is truly a "goldmine" for anyone who wishes a quick three-or-four page summary of the potential hazards to which the human condition exposes its toiling members It must be noted that the ILO, as a part of the United Nations, is especially interested in assisting developing countries with occupational health and safety problems, many of which go back in time to antiquity

The articles, in general, are well written, and give two or three references Many references are in languages which are not readily available to the English-oriented readers The Russian and Japanese input is very significant Where possible, the editor cites CIS references

Volume I, A to L, contains, among other topics, articles as wide-ranging as abbatoirs and abrasive cleaners, acrolein, acetylaminofluorene, acetone, amides, aminotriazole, anthrax, antibiotics, asbestos (first recognized as the cause of fibrosis of the lung by Montague Murray in London in 1899), mesothelioma and lung cancer (a more recent discovery dating to 1947), carcinogenic substances, cardiovascular diseases, catalysts, occupational cataracts, DDT, dibromochloropropane, ethylene oxide, explosive substances, farmer's lung, exposure limits for chemicals and also for biological materials (the latter especially well presented by Dr. D Djuric of Yugoslavia), fibers (man-made and natural), firemen and fire fighting, as well as prevention, health physics, n-hexane, human engineering, hydrofluoric acid, indium, iodine, and Kienbock's disease (the latter a semi-lunar osteonecrosis of the wrist from repeated forced extensions of the wrist), to name only a few In Volume II, the first article, laboratory workers, is reprinted virtually without change from the 1972 edition (the author was not given the opportunity to update it), followed by chemical laboratory work and micro-