

*Gas Explosions: Protection Against Explosions Due to Mixture of Flammable Gases, Vapors or Mists with Air*, published by the International Section of the ISSA for the Prevention of Occupational Risks in the Chemical Industry, Heidelberg, FRG, 1987, 32 pp. (no price and ISBN given).

The purpose of the booklet is to provide plant managers and safety personnel who may not have specialized knowledge of the field of explosion protection, with the means to assess whether or not explosion hazards due to flammable vapors or gases or mists in admixture with air can exist in their plant. The committee of the International Social Security Association (ISSA) that wrote and published the book did a good job delivering their message both verbally and graphically with a well-chosen series of coloured diagrams and accompanying text. Topics covered are:

- What is an explosive mixture?
- What are explosive limits?
- What are ignition sources?
- How can one prevent an explosion? How one can mitigate them?
- How one can mitigate the effects of an explosion?
- Organizational measures.
- Design measures to prevent explosions.

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*Dioxin-containing Wastes: Treatment Technologies*, by M. Arenti, L. Wilk, M. Jasinski and H. Prominski, Noyes Data Corp., Park Ridge, NJ, 1988, ISBN 0-8155-1181-7, 243 pp., US \$36.00.

This book describes treatment technologies for dioxin-containing wastes. Information is provided on processes that have been evaluated with actual dioxin waste streams and processes that have been tested using similar streams. In addition to process-specific details, extensive data (30 pages in all) are included on the general characteristics of dioxin-containing wastes.

The authors have divided the destructive treatment techniques into two sections: Thermal and non-thermal. Each section has a number of chapters.

*Thermal Technologies:*

- Stationary Rotary Kiln
- Mobile Rotary Kiln
- Liquid Injection Incineration
- Fluidized Bed/Circulating Fluidized Bed System

- High Temperature Fluid Wall Destruction – Advanced Electric Reactor
- Infrared Destruction
- Plasma Arc Pyrolysis
- Molten Salt Destruction
- Supercritical Water Oxidation
- *In situ* Vitrification

*Non-thermal Technologies*

- Chemical Dechlorination
- UV Photolysis
- Solvent Extraction
- Biological Treatment
- Stabilization Fixation
- Chemical Degradation Using Ruthenium Tetroxide
- Chemical Degradation Using Chloro-iodides
- Gamma Ray Radiolysis

For each of the technologies, the authors provide the following data:

- Process Description
- Performance Evaluation
- Costs of Treatment
- Process Status

A final chapter is devoted to the factors affecting technology selection, both technical and cost.

The U.S. EPA has indicated that incineration is the only sufficiently demonstrated technology for dioxin wastes in that it can attain 99.9999% destruction and removal efficiency of the principal organic hazardous constituents. Of the non-thermal technologies, those that show the most promise and have undergone the highest level of recent investigation and testing are chemical dechlorination and UV photolysis. Both of these technologies are currently being field-tested on dioxin-contaminated soil.

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*What Went Wrong? – Case Histories of Process Plant Disasters, 2nd ed.*, by T.A. Kletz, Gulf Publishing, Houston, TX, 1988, ISBN 0-87201-919-5, 238 pp., US \$45.00.

The author, with over 40 years experience in the process industries, has collected many unfortunate incidents of past years, into a very readable book that will “help to keep the memories alive”. This is important because many incidents are repeated after people forget, or move to a new position, or whatever. It is a must reading for every new engineer entering the process industries and should not only be on the shelf of all personnel connected with operations, but