

- Spill scenario rationale
- Sources of information
- CERCLA liquid chemical information (physical property data)
- Sorbent selection rationale

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Treatment of Hazardous Waste Leachate: Unit Operations and Cost, by J.L. McCardle, M.M. Arozarena and W.E. Gallagher, Noyes Data Corp., Park Ridge, NJ, 1988, ISBN No. 0-8155-1160-4, 111 pp., price: US\$36.

Comparative capital and operating costs of pollution control equipment are very difficult to find, and comparative costs based on the same assumptions are rare. This book thus fills a very definite void in the literature – in providing comparative costs on the treatment system. Although the book purports to discuss costs of data and the use applicable to only the treatment of leachate, the data used are applicable to the treatment of industrial wastes, as both wastestreams contain similar contaminants and utilize similar treatment sequences.

The authors have briefly discussed the generation of leachate, its constituents and treatability. All this information is presented briefly and found in process publications. The utility of the book, however, is its discussion and comparison of the costs for 20 different unit operations used for leachate/industrial wastewater pretreatment/treatment.

These 20 unit operations were divided into four different categories:

1. Pretreatment
 - equalization
 - sedimentation
 - granular media filtration
 - oil-water separation
2. Physical/Chemical
 - neutralization
 - precipitation/flocculation
 - oxidation/reduction
 - carbon adsorption
 - steam stripping
 - air stripping
 - reverse osmosis
 - ultrafiltration
 - ion exchange
 - wet oxidation

- 3. **Biological Treatment** – activated sludge reactor
 - sequency bath reactor
 - powdered activated carbon additives
 - rotating biological contactors
 - trickling filters
- 4. **Post Treatment** – chlorination

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