458 Ferrous Sulfate Poisoning. T.J. Covey. J. Pediat. 64, 218 (Feb. 1964).

The incidence, pathological aspects, and symptoms of acute severe iron poisoning are reviewed. Four cases are presented: the first terminated in death by acute hepatic failure; the second patient with severe first and second phase symptoms was treated successfully with peritoneal dialysis and edathamil calcium disodium (EDTA); and in the third and fourth patients recovery occurred after treatment by chelation and supportive measures. Four phases of reaction to acute ferrous sulfate poisoning are: hemorrhagic gastroenteritis occurring one-half to one hour or more after ingestion, delayed profound shock 20 to 48 hours after ingestion, liver injury and liver failure, and gastric obstruction occurring at an average of 4 weeks after poisoning. A fifth phase, not yet demonstrated, may be a theoretical phase of cirrhosis due to subfatal liver damage. A plan for management is formulated. It includes the use of EDTA and peritoneal dialysis. -- J.Am.Med. Assn. References & Reviews

459 The Significance of Urine Uranium Excretion Data.
M. Lippmann, L.D.Y. Ong, and W. B. Harris.
Am. Ind. Hyg. Assn. J. 25, 43-54 (Jan.-Feb. 1964).

Urine uranium excretion data for persons exposed to uranium by inhalation are analyzed. Data from both chronic and single massive exposures are included, and a generalized excretion pattern applicable to any uranium compound absorbed by inhalation, is proposed. Using this model, estimates can be made of previous exposure levels, future excretion values, and body burdens, based on appropriate urine data. It is shown that routine urine samples cannot be used to monitor individual exposures or to determine chronic exposure levels. However, suitably designed series of samples, collected after the termination of exposure, can provide useful estimates of exposure level and body burden. -- Authors' abst.

460 The Pyrophoric Properties of Zirconium Metal. A Critique Based on a Survey of the Literature. R.P. Gleason and M.B. LeBoeuf.
J.Am. Soc. Safety Eng. 9, 15-20 (March, 1964).

The authors discuss the subject under the following headings: Introduction, General Hazards of Zirconium Powders, Influence of Particle Size, Factors in Ignition and Combustion of Zirconium Powder, Reaction of Zirconium Powders with Water, Presence of Alloying Materials on Zirconium Pyrophoricity, Safety Precautions in the Use of Zirconium Powders, Inert Gases and Exclusion of Oxygen, Presence of Water, Particle Size, Limitations of Amounts of Powder and Personnel Exposed, Zirconium Chips, Cuttings, Fines, and Turnings, Other Considerations and Conclusion. While the paper has been directed toward the pyrophoric properties and hazards of zirconium powders and scrap, there is much more to zirconium reactivity. Molten zirconium is extremely reactive. Zirconium and its alloys can react violently with acid solutions, and zirconium fires and explosions have occurred in the presence of, or in circumstances involving carbon tetrachloride, nitrogen, zirconium tetrachloride, magnesium chloride, and potassium bisulfate. The mechanism occurring in these reactions may not be known, but if the principles covered in this review — (1) importance of particle size and surface area, (2) nature of contact or mixture of zirconium with any oxidant, (3) the character and instability of the protective oxide layer, and (4) limitations of amounts and personnel exposures — are applied in any use or handling of zirconium, the unfavorable experience of the past may be averted whatever the future extent of use. Twenty-three references are listed.