T.S.S. Dikshith: Handbook of Chemicals and Safety

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Bibliography

Handbook of Chemicals and Safety
T.S.S. Dikshith
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Every year about 400 million tonnes of chemicals in 100,000 varieties are manufactured globally. Every year about 1,000 new variations are added. It is suggested that most have never been tested for their effects on health and the environment. Furthermore, it is claimed that the majority of the newly released additions are accepted without any tests or regulation, and the aberrations caused by these chemicals go unnoticed. This sweeping statement would be rejected by many manufacturers, especially those in the pharmaceutical industry. Rightly or wrongly, very major incidents occur at remarkably regular frequency around the world: the London Smog (UK, 1952); Love Canal (USA, 1953); Seveso (Italy, 1976); Bhopal (India, 1984); Chernobyl (Ukraine, 1986); Exxon Valdez (USA, 1989); Donana (Spain, 1998); and Fukushima (Japan 2011). The very variation of the causes of these catastrophes exemplifies the extraordinary difficulty of defining what chemical contamination consists of, and what precautions can be used to prevent it.

The adverse health effects and resulting fatalities caused by environmental pollution and chemical disasters are many. These are not necessarily limited to toxicity, the duration of exposure, and the individual's age or health.

There are many causes; and not all effects can be reduced or guarded against, demonstrated by the examples above. Would any nuclear designer of 35 years ago have been able to predict the 15-m tsunami that hit the Fukushima plant?

The author states the intention of this book is to provide guidance to students, toxicologists, hygienists, basic chemists, engineers and occupational workers with a standardised and ready-reference source of data. The potential readership is then stretched further, by suggesting semi-skilled workers and householders would find it a useful ready-reference source. With these objectives in mind the text is clearly laid out, containing information about the use and possible health effects, immediate and long term effects, and hazards of chemical substances, all to be encountered when handling any of the chemicals listed. The listings also include correct identification, use and handling, separation when stored, and waste disposal. Some 50% of the contents are a compilation of chemical substances, listed alphabetically, and also by classification. Each individual chemical is compiled with its CAS number, IUPAC name, molecular formula, synonyms, trade names, use and exposure, toxicity and health effects, carcinogenicity, exposure limits, methods of storage, precautions, waste disposal and any relevant references.

In supporting the recently introduced Globally Harmonised System of Classification and Labelling of Chemicals (GHS), the author is hopeful it will have a significant effect on reducing major disasters. Whilst a forward step, it seems equally likely that however much knowledge is available and however well it is applied, such events will keep occurring. Although most data given are available in many other sources, the presentation is concise, clear, quickly referenced and easily read—but it will only have appeal to those working in uncomplicated environments needing a quick reference source.

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