Chemical waste and its influence on the environment.

Harriet Wood*

Managing Editor, Journal of Environmental Waste Management and Recycling, United Kingdom

Accepted on September 16, 2021

Introduction

For at least two decades, the environmental impact of chemical waste generated by teaching, agriculture, urbanization, health care and research has been a source of tremendous worry and debate. Scientists have emphasised the importance of implementing a method for the treatment of chemical waste in educational institutions, agriculture, urbanization and health care which contribute to the formation of small quantities of waste, many of which are highly dangerous, in most laboratory and non- laboratory activities. When a material is discarded without expecting to be compensated for its inherent value, it is considered waste. When incorrectly processed, stored, transported, disposed of, or managed, these wastes may represent a risk to human health or the environment (soil, air, and water). A significant portion of these wastes are potentially toxic to the environment and pose a serious threat to living species, including humans. There is plenty of evidence that incorrect garbage disposal can pollute the air, surface water, ground water, soils, sediments, and biota. The greatest environmental hazard linked with the landfilling of garbage is the contamination of ground water by landfill leachate, which poses a risk to downstream surface waters and wells. It is critical to control such hazardous waste in an environmentally feasible and sound manner in order to protect our ecosystem. Government agencies concerned about environmental quality have put some of this on the list. Toxic acids, metals, solvents, compounds, and synthesis products whose toxicity is often unknown are just a few examples. As previously stated, educational and scientific institutions pollute the environment by producing hazardous waste, disposing of hazardous materials down the drain, and allowing solvents to evaporate, among other actions that are destructive to the environment. Because the notion of research entails the investigation of new chemicals and their disposal if the outcome is neither intriguing nor useful, the recommended technique of reducing dangerous waste production is not always practicable. This activity differs from industrial processes in that it involves routine actions, the constant use of raw materials, and the production of well-known waste products. The variety of non-routine tasks in research is naturally more difficult to govern.

Perilous synthetic compounds typically found in world and requiring appropriate treatment are:

- synthetic specialists outperforming their lapse date and in this manner needing re-assessment of their viability, and need for removal
- containers of synthetic compounds without names or with off-base or unintelligible names
- material in a condition of crumbling or in bundles which are weakened, or harmed
- obscure build-ups in synthetic compounds holders
- research centre waste, for example, paper towels and clothes
- non-recyclable batteries and gas cylinders
- aprons, glasses, masks, and gloves contaminated with dangerous biological, chemical, or radioactive material
- pesticides, equipment containing toxic substances, various types of waste oils, old solvents, Thinner, oil remover, and wood preservers
- formaldehyde, formalin, and acrylamide waste in liquid or gel form
- mercury and other very poisonous metals
- sharp devices such as needles, syringes, chromatography needles, Pasteur pipettes, and tips
- defunct electronics, computers, and thermometers
- synthetic squanders produced in research labs, and during instructing exercises
- bleach, ammonia, cleaning solvents, liquid wood polish
- empty yet contaminated chemical bottles of glass and plastic
- polluted laboratory glass that has been cracked or damaged
- thermometers that have been polluted with mercury and are broken or damaged
- pathogenic bacteria, carcinogenic and radioactive chemicals
- Industrial waste such as Organic chlorine compounds, organic phosphate compounds, Heavy metals, pigments, solvents, organic residues

Steps to Manage Hazardous waste

- Waste characteristics, such as waste types, hazard levels, chemical and physical stability, waste compatibilities, and the ability to separate ignitable, reactive, and incompatible wastes. To choose appropriate treatment and disposal methods.
- Chemical elements of wastes' fate and transport characteristics, as well as their predicted degradation products
- The crucial media of concern (air, surface water, ground water, soils/sediments, and so on).

- Assessment of probable waste constituent release and exposure pathways, as well as human and ecological exposures.
- Assessment of the wastes' environmental and health implications, if they reach critical human and environmental levels.
- Determination of the geology, topography, hydrogeology, and meterological conditions of disposed sites.
- Determination of the proposed waste facility's service area, such as whether it would handle waste from local industry alone or from regional and/or national sources.
- Environmental, social, and economic suitability of proposed waste facility location, including proximity to communities, natural systems, water resources, and so on.
- The best available technology (BAT) for dealing with the specific wastes in addition, contingency plans and emergency procedures should be included in the design of waste management strategies.

***Correspondence to:**

Harriet Wood
Managing Editor
Journal of Environmental Waste Management and Recycling
United Kingdom
recycling@escienceopen.com