

Proposed Secondary Treatments of Chemicals/Wastes from Chemical Accidents

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Many companies or countries are suffering from proper disposal or treatment methods of chemical wastes which are produced from primary or emergency response of the chemicals released from various chemical accidents, including fire, explosion, and leaking during handlings and transports of chemicals. This study proposed final or secondary treatment methods of the chemicals or chemical wastes released/produced from chemical accidents, depending upon their categorization of special hazardous, acid and base (liquid solution), liquid phases, gas phase and solid phase chemicals. The special hazardous chemicals were classified into two types of water reactivity and explosiveness, which are finally disposed of as designated waste procedures after applying powder adsorption techniques. Their transport or handling processes should be maintained the conditions not to be involved in the conditions to be desorbed or get exploded. Liquid solutions of acids and bases is mainly disposed of general or designated waste procedures depending on the pH of the solution obtained after their neutralization. The proposed secondary treatment methods of the liquid phase chemicals or wastes of petrochemicals/hydrocarbons or solvents include suction techniques by transportable tanks or after wet scrubbing, adsorption techniques using adsorbent powder or fabric, and treatments by dried soil or sand. The gas phase chemicals or wastes are disposed of suction or wet scrubbing before and/or after collection of gases phases using portable suction tanks. The gaseous chemicals or wastes after being sucked by portable tanks can be also recycled/reused after proper separation or purification procedures. The solid phase chemicals or wastes, which are not having water reactivity and/or explosiveness, can be collected in bags by vacuum cleaners and portable suction tanks and then they can be recycled/reused after proper separation or purification procedures. The remaining solid chemicals or wastes after the collection can be disposed of by neutralization techniques or by general or designated waste procedures after washing them by water or wet scrubbing techniques.

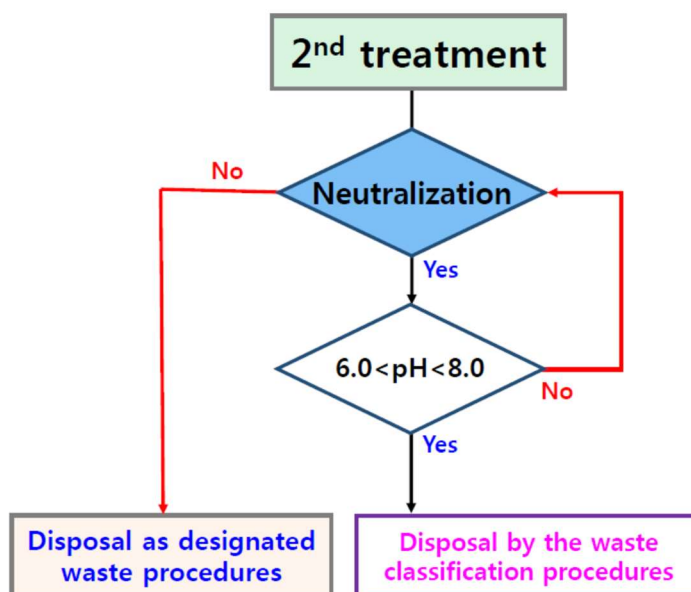


Fig. 1: Proposed secondary treatment methods of chemicals/wastes released from chemical accidents.

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