

# A Proposal of Classification Criteria as Designated or General Waste of Chemicals Emitted from Chemical Accidents

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A large amount of chemicals or chemical wastes are generated from various chemical accidents, including fire, explosion, and leaking during handlings and transports of chemicals (raw, intermediate and final materials). Even though there are different classification methods of many wastes, exact classification criteria of known or unknown-chemicals released from chemical accidents have not been reported. Thus, many companies or people are suffering from improper classifications of the released chemicals or wastes, resulting in improper treatments or disposal and finally giving serious economical burdens or environmental impacts. This study aims to try establish proper classification criteria and then apply proper disposal methods of chemical wastes based on the corresponding classifications. Determination of proper classification criteria of chemicals or wastes can facilitate to minimize adverse environmental impacts or burdens. This study developed classification criteria as general or designated (or hazardous) waste of the released chemicals. This study first proposed classification criteria based on their physicochemical properties or characteristics of the released chemicals, including their pH values of acids and bases, rated scores of flammability or explosiveness, instability or reactivity and health hazard, specific hazard classification, and their integrated scores of the chemicals. The scores rated, according to the U.S. National Fire Protection Association (NFPA), are given on a class or score of 0 to 4, based on the degree of their health risk (blue diamond), flammability (red diamond) considering explosive limits, and reactivity (yellow diamond) as shown in Fig. 1. Then unusual water reactivity (W) or oxidative capability (oxy) or corrosiveness of chemical substances is also assigned as a special hazard class. After being considered for the integrated scores and/or specific hazard conditions of the chemicals, they are finally evaluated by the current regulations of the waste control act in Korea, including their pH values and other conditions, for the classification as general or designated waste. Then the classified general or designated waste should be followed by particular or special treatments or disposal methods of them depending upon their classification types.

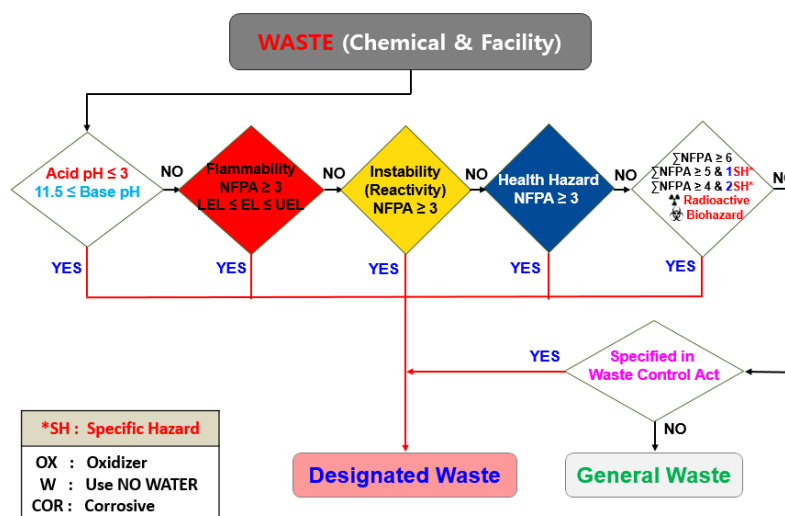


Fig. 1: Proposed classification criteria as designated or general waste of chemicals released from chemical accidents.

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