

Classification of Waste: Assessment of HP 14 Ecotoxicity

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Waste management is complex, but an appropriate approach in this regard is fundamental to moving towards a circular economy, which promotes not only environmental protection, but also safe access to resources, social well-being, and economic growth [1]. Nowadays, it is clear that “waste” must be considered a valuable “resource”, and waste disposal must be kept to a minimum. Waste policies play a significant role to ensure that waste is properly managed and/or disposed of ensuring reduced risks to human health and the environment. In this scope, waste must be properly separated and classified at the source. Indeed, classifying waste as hazardous or non-hazardous is a central decision throughout the chain of waste management, from generation to final treatment or application [2]. Whenever waste is correctly classified as “hazardous”, several important responsibilities are triggered, namely in terms of labeling and packaging, as well as in terms of deciding a suitable treatment or application [2]. Currently, in Europe and also in Portugal, the guidance documents for waste classifications are the European List of Waste (LoW) published in the Commission Decision 2014/955/EU, as well as Regulation (EU) No. 1357/2014 and Regulation (EU) No. 2017/997 which publish the properties that render waste hazardous and the methods to evaluate them. However, some challenges arise for authorities and industry in this context. Among the hazardous properties, the assessment of HP 14 (ecotoxicity) is the most challenging and has been continuously discussed at the regulatory level [2] and also among the scientific community [3]. In general, the property HP 14 ‘Ecotoxic’ has been defined as “*waste which presents or may present immediate or delayed risks for one or more sectors of the environment*”. Regulation (EU) 2017/997 presents a methodology for HP 14 assessment based on waste chemical composition aligned with the chemicals legislation, but this approach exhibits limitations for evaluating waste complex matrices. In this context, biotests are relevant for assessing such complex matrices and should be included in the analysis. Currently, the European Commission does not provide specific recommendations regarding the approach to be followed for the ecotoxicological assessment through biotests. Thus, each Member State decides, on a case-by-case basis, on the acceptability and interpretation of results from the ecotoxicological characterization of waste using biotests [2]. In this work, an overview of the problems associated with the assessment of HP 14 of waste will be given, and bottom ash from municipal solid waste incineration will be considered as a case study.

References

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- [2] Commission notice on technical guidance on the classification of waste (2018/C 124/01)
- [3] Pandard, P., Römbke, J. (2013). Proposal for a “harmonized” strategy for the assessment of the HP 14 property. Integrated Environmental Assessment and Management.