

# A chemicals mixture screening method: HYDREX™ environmental impact score

El Bahloul-Remonnay, I.,<sup>1,2</sup> Ravat, J.,<sup>2</sup> Martin J.,<sup>2</sup> Belhadj-Kaabi, F.,<sup>3</sup>

\* Ismahane El Bahloul-Remonnay

<sup>1</sup> [ismahane.remonnay@veolia.com](mailto:ismahane.remonnay@veolia.com)

<sup>2</sup> Veolia Water Technology VWT, Hydrex Risk & Compliance RAC Department, 1, place Montgolfier 94417 Saint-Maurice cedex – France

<sup>3</sup> VERI Veolia Research & Innovation, Environmental & Health Department, Chemin de la digue - BP76 - 78603 Maisons-Laffitte - France

Abstract Text: In 2018, for compliance with the SAICM Strategic Approach to International Chemicals Management, adopted in February 2006 and driven by the United Nations Environment Program (PNUE) which defines a policy framework for ensuring a global chemical safety, the HYDREX regulatory RAC Team has launched a project to develop a chemicals mixture screening method (Figure 1) based on selected parameters (physico-chemical, toxicological, ecotoxicological and also application data) and the building of:

- an OECD QSAR-like model (in silico model) adapted to the water compartment and chemicals profile.
- and a scoring chemoinformatic tool for assessing the environmental impact of the chemicals mixture (HYDREX™ impact score). Depending on their reliability, a data set will be input in a water-adapted algorithm allowing to evaluate the water impact of a HYDREX™ product.

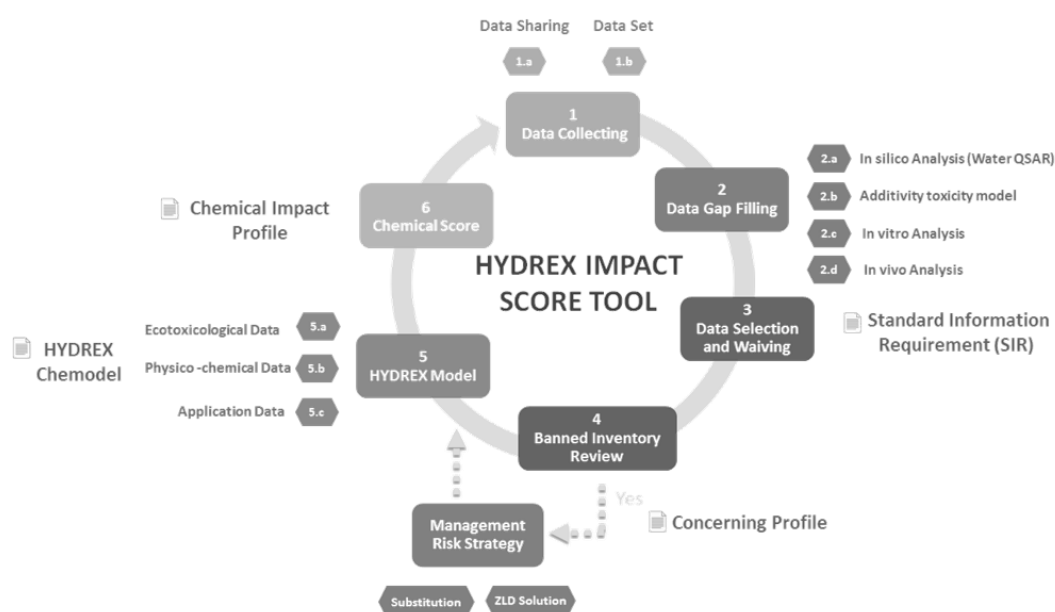


Figure 1 – A screening method for Hydrex™ chemicals mixture

The classical approaches for impact assessment are focusing on single substance and not mixture approach. The HYDREX™ chemicals, mainly mixtures, are used on the whole process of water treatment and are therefore likely to reach the aquatic compartment. An environmental & health impact screening of Veolia HYDREX solutions is required by customers and authorities before placing the chemicals on the market. A neutral scoring will drive the customer selection and the authority approval process. These regulation and market Expectations accelerate also, the transition from a linear economy to a circular economy (as Zero Liquid Discharge” or for chemical solutions “Zero Hazardous Discharge” approaches).

Bibliography:

Ongoing – Not yet published