The evaluation of reactive hazards is necessary for the safe working of chemical process industries. An integral aspect of reactive hazard testing is the screening of chemicals to focus experimental efforts on the more hazardous chemicals. The screening is generally performed using a Differential Scanning Calorimeter (DSC) or the Reactive System Screening Tool (RSST). The study of chemical compatibility highlights the need for efficient screening techniques since a large number of experiments need to be performed at a reasonable cost and in a short period of time.

The aim of this paper is to generate the chemical compatibility data for di-ter-butyl peroxide (DTBP) and a variety of organic solvents using the RSST. Based on the functional groups, the results have been generalized to extend the generated data to compounds where data are unavailable. Further a classification for reactive chemicals is proposed that can serve as a guideline for selecting compositions for detailed testing.