

## عنوان مقاله:

A Credit Approach to Measure Inherent Hazards Using the Fire, Explosion and Toxicity Index in the Chemical Process  
Industry: Case Study of an Iso-max Unit in an Iran Oil Refinery

## محل انتشار:

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## خلاصه مقاله:

**Objectives:** Indices are extensively used for ranking various units of a chemical process industry on the basis of the hazards they pose of risk a fire, explosion and toxicity release. **Methods:** This type of ranking enables the professionals to identify the more hazardous units from the less hazardous ones so that greater attention can be paid to the former. The key process subunits in the Iso-max unit were identified based on parameters such as process pressure, temperature and material value. In next step, the main parameters affecting the FETI were identified and estimated, and the Mond FETI index was calculated for each subunit. In addition, the criteria offset measures for each case were identified and their influences were studied. **Results:** The results showed that the process route's potential hazardous characteristics, such as major incidents, were associated with one or more of the following dangerous phenomena: thermal radiation, blast (pressure wave) and ejection of fragments, release of toxic materials and chemical concentration in the air. Intake amount assessments and the corresponding risk of exposure were also produced. By using statistical incident data of the risks of fire, explosion and toxicity, exposure risks can be estimated more realistically as probabilities. This approach is capable of comparing alternative processes to select the one which is inherently safest. **Conclusion:** Using this method, the exposure risks in a process can be identified sooner, and proper risk management decisions can be made early in the process development or predesign stages.

## کلمات کلیدی:

Inherent Hazards, Chemical Process, Criteria Offset Measures

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