

Quantitative Risk Assessment

Quantitative Risk Assessment Defined

A quantitative risk assessment (QRA) involves the detailed estimation of the expected frequency and consequences of potential accidents associated with a facility or operation.

Value of a QRA

A QRA is an invaluable method for making informed risk-based process safety planning decisions, as well as being fundamental to any facility siting decision-making. It enables a detailed understanding of process risks, and where those risks arise from. In conducting a QRA, these risks can be better managed and mitigated.

Experienced Professionals

ioMosaic has a proven track record of performing QRAs. Our professionals have performed assessments on a wide range of facilities, such as refineries, chemical plants, pharmaceutical plants, tar sands, crude oil refineries, LNG facilities, and rail and marine transportation terminals. ioMosaic helps you make risk-based decisions with confidence.

QRA Tools

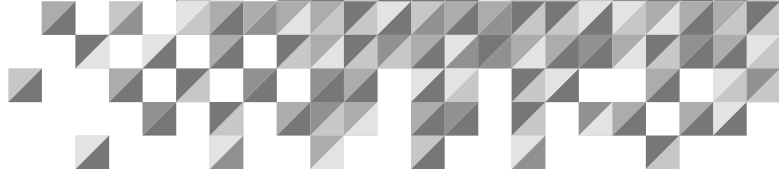
ioMosaic uses Process Safety Office® SuperChems™ component to conduct QRAs. SuperChems™ has all the functionality necessary to conduct a QRA and can be used for calculating risk for fixed facilities, pipelines or transportation routes. ioMosaic understands that QRAs consist of two principal steps: **preparation** and **implementation**. SuperChems™ can help you with both steps:

Preparation

- Define meteorological and topographical data in SuperChems™
- Visually define population data in SuperChems™
- Visually define Ignition data in SuperChems™
- Define your risk tolerability criteria

Implementation

- Generate failure scenarios in SuperChems™
- Generate results in SuperChems™ (graphical and tabular)
- Discharge
- Dispersion
- Toxic effects
- Radiation effects
- Explosion effects
- Individual risk
- Societal risk
- Analysis of results
- Risk-ranking of scenarios
- Filtering of results
- What-If scenarios



About ioMosaic Corporation

Through innovation and dedication to continual improvement, ioMosaic has become a leading provider of integrated process safety and risk management solutions. ioMosaic has expertise in a wide variety of areas, including pressure relief systems design, process safety management, expert litigation support, laboratory services, training and software development.

ioMosaic offers integrated process safety and risk management services to help you manage and reduce episodic risk. Because when safety, efficiency, and compliance are improved, you can sleep better at night. Our extensive expertise allows us the flexibility, resources, and capabilities to determine what you need to reduce and manage episodic risk, maintain compliance, and prevent injuries and catastrophic incidents.

Our mission is to help you protect your people, plant, stakeholder value, and our planet.

Overview of most services / products we provide:

- Asset integrity
- Auditing
- Chemical reactivity management
- Combustible dust hazard analysis (DHA) and testing
- Due diligence support
- Effluent handling design
- Facility siting
- Fire and explosion dynamics
- Incident investigation, litigation support, and expert witness
- Liquefied natural gas (LNG) safety
- Pipeline safety
- Pressure relief and flare system design
- Process engineering design and support
- Process hazard analysis (PHA)
- Process safety management (PSM)
- Quantitative risk assessment (QRA)
- Risk management program development
- Software solutions
 - Process Safety Enterprise®
 - Process Safety Learning®
 - Process Safety Office®
 - Process Safety Project Opportunity Marketplace (PSPOM™)
 - Process Safety tv®
- Structural dynamics
- Training (open enrollment, online, and customized)

For more information on ioMosaic, please visit: www.ioMosaic.com

