

## PROCESS SAFETY AT A GLANCE USER KEY

Identify your area of resource needs via the 20 CCPS Elements of Process Safety chart in the center of the page.

**CCPS Management Resource Tools** are in the left chart and are color keyed by safety category. Select any of the identified 20 CCPS Elements of Process Safety categories, from the center chart, and use the color key to get you to the appropriate management tools for your safety needs.

**CCPS Technical Resource Tools** are in the chart on the right, by category. Select any of the identified 20 CCPS Elements of Process Safety categories, from the center chart, and use the category identifiers to get you to the appropriate technical tool category for your safety needs.

## CCPS MANAGEMENT RESOURCE TOOLS

### GUIDELINES (G/L) FOR RISK BASED PROCESS SAFETY

### UNDERSTAND HAZARDS AND RISK

- Evaluating Process Safety in the Chemical Industry: A User's Guide to Quantitative Risk Analysis
- G/L for Developing Quantitative Safety Risk Criteria
- G/L for Chemical Process Quantitative Risk Analysis, 2nd Ed.
- G/L for Chemical Transportation Safety, Security, and Risk Management
- G/L for Hazard Evaluation Procedures, 3rd Ed.
- Layer of Protection Analysis
- G/L for Process Safety Documentation
- G/L for Process Safety in Outsource Manufacturing Operations
- A Practical Approach to Hazard Identification

### MANAGE RISK

- G/L for Acquisition Evaluation and Post Merger Integration
- G/L for Management of Change for Process Safety
- G/L for Mechanical Integrity Systems
- G/L for Technical Planning for On-Site Emergencies
- G/L for Performing Effective Pre-Startup Safety Reviews
- G/L for Conduct of Operations for Process Safety

### LEARN FROM EXPERIENCE

- CCPS Process Safety Metrics Online Reporting Application
- G/L for Auditing Process Safety Management Systems, 2nd Ed.
- G/L for Investigating Chemical Process Incidents, 2nd Ed.
- G/L for Process Safety Metrics
- Incidents that Define Process Safety
- Process Safety Incident Database
- Revalidating Process Hazard Analysis
- CCPS Process Safety Benchmarking Program

## 20 CCPS ELEMENTS OF PROCESS SAFETY

PROCESS SAFETY CULTURE

STANDARDS, CODES, REGULATIONS, AND LAWS

PROCESS SAFETY COMPETENCY

WORKFORCE INVOLVEMENT

STAKEHOLDER OUTREACH

PROCESS KNOWLEDGE MANAGEMENT

HAZARD IDENTIFICATION AND RISK ANALYSIS

OPERATING PROCEDURES

SAFE WORK PRACTICES

ASSET INTEGRITY AND RELIABILITY

CONTRACTOR MANAGEMENT

TRAINING AND PERFORMANCE ASSURANCE

MANAGEMENT OF CHANGE

OPERATIONAL READINESS

CONDUCT OF OPERATIONS

EMERGENCY MANAGEMENT

INCIDENT INVESTIGATION

MEASUREMENT AND METRICS

AUDITING

MANAGEMENT REVIEW AND CONTINUOUS IMPROVEMENT

## CCPS TECHNICAL RESOURCE TOOLS

### VENTING AND EMERGENCY RELIEF

- Deflagration and Detonation Flame Arrestors
- G/L for Pressure Relief and Effluent Handling Systems
- Emergency Relief Systems Design Using DIERS Technology

### CHEMICAL REACTIVITY HAZARDS

- Essential Practices for Managing Chemical Reactivity Hazards
- G/L for Reactivity Evaluation and Application to Process Design
- G/L for Safe Storage and Handling of Reactive Materials
- G/L for Process Safety in Batch Reaction Systems

### SAFE DESIGN

- Continuous Monitoring for Hazardous Material Releases
- G/L for Engineering Design for Process Safety
- G/L for Evaluating Process Plant Buildings for External Explosions and Fires
- Human Factors: Methods for Improving Performance in the Process Industries
- G/L for Safe Handling of Powders and Bulk Solids
- G/L for Safe Design and Operation of Process Vents and Emission Control Systems
- Making EHS an Integral Part of Process Design
- G/L for Safe and Reliable Instrumented Protective Systems
- Inherently Safer Design, 2nd Ed.
- G/L for Process Safety in Bioprocess Manufacturing Facilities

### CONSEQUENCE MODELING

- G/L for Consequence Analysis of Chemical Releases
- G/L for Evaluating the Characteristics of Vapor Cloud Explosions, Flash Fires, and BLEVEs, 2nd Edition
- Understanding Explosions
- Wind Flow and Vapor Cloud Dispersion at Industrial and Urban Sites

