



PROCESS SAFETY

For Safe Plants and Reliable Operation

Increasing safety requirements, stricter regulatory provisions, and advancing technologies constitute significant challenges for operators. Our process safety experts support you in managing risks and operating your plants safely, efficiently, and in full compliance.

INNOVATIVE AND TAILORED SOLUTIONS FOR YOUR SAFETY AND PROFITABILITY

Combining deep expertise, creativity, and many years of experience, we develop customized solutions for the safe design, construction, and operation of your facilities. From the concept stage through ongoing operations, we make sure risks are minimized and requirements are consistently met.



OUR CORE COMPETENCIES



1. Risk Analysis and HAZOP Facilitation

- Conducting HAZID and HAZOP analyses
- Moderation and execution by experienced facilitators and interdisciplinary teams
- Development of operating concepts with focus on operability and safe operation
- Documentation and structured follow-up of actions

Applicable standard: IEC 61882



2. SIL/LOPA and Functional Safety

- LOPA methodology for evaluation of protection layers
- SIL classification and verification of Safety Instrumented Functions (SIF)
- Support across the safety lifecycle

Applicable standards: EN 61508, EN 61511, and VDI/VDE 2180



3. Overpressure Protection and Safety Valves

- Scenario definition and relief load calculation
- Sizing and selection of safety valves
- Pressure-drop verification and datasheet preparation

Applicable standards: API 521, ISO 23251, API 520, ISO 4126 and AD 2000



4. Underpressure Protection and Vacuum Relief

- Vacuum scenario analysis for tanks and vessels
- Design of tank venting systems
- Sizing and selection of vacuum breakers and conservation vents

Applicable standards: API 2000 and ISO 28300



5. Flare Systems and Thermal Disposal

- Flare network design and hydraulic modeling
- Design of KO drums and flare stacks
- Radiation, noise assessments and location optimization

Applicable standards: API 537 and ISO 25457



6. Explosion Protection Concepts

- Hazardous area classification for gas and dust (IEC/ATEX)
- Technical and organizational protective measures
- Development of EX zoning plans



7. Environmental Protection and Emissions Compliance

- TA-Luft and Emission Control
- Permitting procedure under the German Federal Immission Control Act (BImSchG)
- Environmental Risk and Impact Reduction

YOUR BENEFITS

- ✓ **Enhanced Safety:** Reliable risk identification and effective safeguards
- ✓ **Legal Certainty:** Compliance with standards, guidelines, and regulatory requirements
- ✓ **Efficiency:** Optimized, cost-effective solutions for dependable operation
- ✓ **Futureproofing:** Sustainable processes with flexibility for future expansion



Working together for safe processes – reach out to us!



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