



DATA SHEET

Process Safety Management Services

DEKRA Process Safety provides effective and efficient Process Safety Management services to the process industries worldwide.

What is PSM?

Process Safety Management (PSM) is a subset of a Safety Management System (SMS) which relates principally to Major Hazards (Fire, Explosion, Runaway Reaction, Toxic Release) with adverse consequences on human, environment & business loss. The goal of a sound PSM program is to ensure that process facilities handling highly hazardous materials operate safely.

Many companies do not have the internal support to create and/or implement an effective PSM program by themselves. They either don't have the in-house expertise, or tend to operate on restricted budgets, or both. Even large companies with a sound process safety culture and a corporate PSM program cannot always ensure that local facilities fully comply with their PSM goals because their resources may be limited. The result has been numerous process safety related accidents and catastrophes over the recent years, sometimes unfortunately with multiple fatalities and injuries.

We assist companies in meeting their PSM challenges in an effective and efficient manner, with a clear understanding of the requirements of sound PSM program design and implementation, and the global coverage and support to comply with local requirements.



Our Approach

There are several PSM regulations that exist worldwide (i.e., OSHA PSM in the U.S., SEVESO SMS in Europe, etc.). There are also industry guidelines that drive PSM practices, such as CCPS's Risk-based **Process Safety Management** Guidelines which is comprised of twenty (20) elements categorized into four (4) pillars of PSM:

1. Commitment to Process Safety from top to bottom in an organization
2. Understand and Analyze Process Hazards & Risks
3. Manage the Risks
4. Continually Learn from Experience (i.e., near misses investigations, training, auditing, etc.)

Our aim is to accompany our customers to help them meet PSM regulatory compliance, established industry standards and beyond. We help ensure PSM fits seamlessly into our clients' business models and operations; that PSM is embraced and becomes a real part of the company's culture; and that it is successfully implemented throughout the lifecycle of operations to lower risk. We do this by providing "best in class" PSM and process safety engineering (PSE) services to all of our clients.

Our Experience, our Tools and Strength

Our large team of PSM consultants has developed expertise and a solid track record in developing and implementing sound PSM programs for the process industries including: Chemicals, Petrochemicals, Off-shore and On-shore Oil & Gas, Pharmaceuticals, Food & Beverage and any other industry that uses Highly Hazardous Chemicals.

Our PSM experts are process, chemical and safety engineers with a strong industry background complemented by an in-depth expertise in process safety. CVs are available on request. Through the network of DEKRA Process Safety staff, located in 12 offices globally, we offer and can tailor the following PSM services to your needs:

- > Process Safety Management (PSM) Development, Implementation & Improvement

- > PSM Auditing & Gap Identification
- > **PSM Training** & Process Safety Culture
- > Process Hazard Analysis (**HAZOP**, LOPA, HAZID, What-if, FMEA, BowTie, Fault Tree)
- > Quantitative Risk Assessment (QRA), Consequence Modelling and Blast Effects
- > Process Safety Information & Laboratory Testing
- > Pre Start-Up Safety Reviews (PSSR)
- > Permitting & Emergency Plans
- > Major Hazards Safety Cases & SEVESO Compliance
- > Technical & organizational prevention measures
- > Incident Investigation, Expert Witness & Litigation Support

Our PSM services are available in a large variety of languages, including: English, Spanish, French, German, Portuguese, Italian, Arabic and Hindi.

Specific details and dedicated service brochures of these PSM services are available on our websites.

Our References

- > **Oil & Gas:** Exxon Mobil, Shell, Repsol, Total, Conoco Phillips, Reliance, Maersk, BP, Amerada Hess, NPCC...
- > **Energy:** GDF-Suez, EON, EDF, Alstom, Scottisch Southern Power...
- > **Chemical:** BASF, Bayer, Ineos, Sabic, Dupont, Huntsman, Evonik, Arkema, PPG, Clariant, Kemira, Chemtura, Croda, Stepan, Huber corp., SNE, United Phosphorus, Solvay, Lubrizol...
- > **Pharmaceuticals:** GSK, Teva, Merck, Roche, BMS, Sanofi, Boehringer-Ingelheim, Covidien, J&J, Pfizer, UCB Pharma, Astellas, Dr Reddy...
- > **Cosmetics & Household:** L'Oréal, P&G, Diversey, Reckitt Benckiser, Henkel...
- > **Food & Beverage:** Unilever, Cargill, IFF, Conagra, Kraft, Nestlé, Pepsico, Sensient, Firmenich, British Sugar...
- > **Engineering & Procurement:** Foster-Wheeler, Saipem, Technip, SNC Lavalin, Bechtel, Technimont, Tetrapak, Bocard...
- > **Other sectors:** Siemens, Arava, BMW, ABB, EADS, Tata, Vendata, BHP Billiton, Lafarge, Danieli, Imperial tobacco...

DEKRA Process Safety

The breadth and depth of expertise in process safety makes us globally recognized specialists and trusted advisors. We help our clients to understand and evaluate their risks, and work together to develop pragmatic solutions. Our value-adding and practical approach integrates specialist process safety management, engineering and testing. We seek to educate and grow client competence to provide sustainable performance improvement. Partnering with our clients we combine technical expertise with a passion for life preservation, harm reduction and asset protection. As a part of the world's leading expert organization DEKRA, we are the global partner for a safe world.

Process Safety Management (PSM) Programs

- > Design and creation of relevant PSM programs
- > Support the implementation, monitoring, and sustainability of PSM programs
- > Audit existing PSM programs, comparing with best practices around the world
- > Correct and improve deficient programs

Process Safety Information/Data (Laboratory Testing)

- > Flammability/combustibility properties of dusts, gases, vapors, mists, and hybrid atmospheres
- > Chemical reaction hazards and chemical process optimization (reaction and adiabatic calorimetry RC1, ARC, VSP, Dewar)
- > Thermal instability (DSC, DTA, and powder specific tests)
- > Energetic materials, explosives, propellants, pyrotechnics to DOT, UN, etc. protocols
- > Regulatory testing: REACH, UN, CLP, ADR, OSHA, DOT
- > Electrostatic testing for powders, liquids, process equipment, liners, shoes, FIBCs

Specialist Consulting (Technical/Engineering)

- > Dust, gas, and vapor flash fire and explosion hazards
- > Electrostatic hazards, problems, and applications
- > Reactive chemical, self-heating, and thermal instability hazards
- > Hazardous area classification
- > Mechanical equipment ignition risk assessment
- > Transport & classification of dangerous goods

We have offices throughout North America, Europe, and Asia.

For more information, visit www.dekra-process-safety.com

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Would you like to get more information?

Contact Us