



Our Process Safety Services

- Laboratory testing
- Consulting
- Training
- Instrumentation

Technological risks evaluation generally requires experience of process industry hazards and materials experimental characterization. Chilworth offers these two indissociable aspects.



Consulting

Practical Independent Advice and Full solution service

Chilworth, global and independent expert in process safety since 1986, operates in the following fields :

Explosion risks / ATEX Compliance

- Audits
- Hazardous Area Classification
- Hazard Assessment
- ATEX Compliance of Non Electrical Equipment
- Protection Explosion Document (PED)
- Prevention and protection systems design and sizing (inerting, explosion vents ...)

Thermal runaway hazards/ thermal stability

- Chemical reaction safety: risk evaluation and optimization
- Vent sizing (According to API, NFPA, DIERS standards)

Classified installation legislation : ICPE and SEVESO II

- Study Report – Safety measures – Bow-tie Method
- Third-party examination study reports
- Consequence modelling – toxic and flammable dispersion, explosion (BLEVE, UVCE), fire
- Safety Management System Audit

Electrostatics problems and applications

- Hazards and nuisance shocks: audits, diagnostic, measurements on site.

Process Safety

- Process safety culture audits
- Preliminary Risk Analysis
- Deviation analysis (HAZOP, LOPA)
- Safety Instrumented Systems (CEI61508/11 – SIL levels)
- Industrial accidents expertise (fire, explosion ...)

Training courses



Inter or intra training

We propose you inter or intra-company training courses aimed at all levels (operators, technicians, management). Our courses are customized to problems encountered by all kind of process industries : pharmaceuticals and cosmetics, bulk and fine chemicals, agrochemicals, food industry, solvents etc...

- Practical ATEX compliance
- ATEX for operators and maintenance teams
- Electrostatic Hazard
- Gas and dust explosion: prevention and protection
- Thermal runaway of chemical reactions: risk, prevention and control
- From the lab to the plant : the dangers of chemical industry
- Risk assessment methods (HAZOP, LOPA)
- SIL levels
- Consequences evaluation
- Process accident lessons – Experience Feedback
- Vent Sizing
- Etc.



Safety data acquisition

Our laboratories are accredited (ISO/IEC 17025) and comply with GLP regulations (Good Laboratory Practice). They are worldwide leaders in process safety data acquisition. More than 110 tests are proposed in our catalogue in line with National, European and International regulation requirements. We also perform numerous customized tests.

Flammability :

- **Dust explosion :**
 - Maximum explosion pressure and explosion severity (P_{max} and K_{st})
 - Minimum ignition energy
 - Minimum ignition temperature
 - Layer Ignition temperature
 - Lower Oxygen Concentration
- **Gas/vapor flammability :**
 - Flashpoint, flammability limits, auto-ignition temperature

Thermal stability :

- **Thermal runaway characterization**
 - Screening tests (DSC, Carius tube)
 - Reaction calorimetry (Mettler RC1)
 - Adiabatic calorimetry (ARC, Dewar)
 - Modeling
- **Self heating and powders thermal stability :**
 - Explosive properties: deflagration, detonation
 - Drying and storage safety testing
 - Testing in stove

Electrostatic properties :

- Chargeability, resistivity and relaxation time of powders
- Liquid conductivity
- Film electrostatic properties

Regulatory testing :

- Physico-chemical tests for new substances notification and REACH compliance (A series) :
- Flashpoint, liquids and solids oxidizing properties, pyrophoricity
- Explosive properties
- Classification tests for hazardous materials (GHS, CLP)
- Testing for material safety data sheets

Laboratory instruments

Chilworth proposes a huge range of laboratory instruments in order to identify flammability, reactivity, electrostatic properties... Detailed brochures are available on demand.

Testing

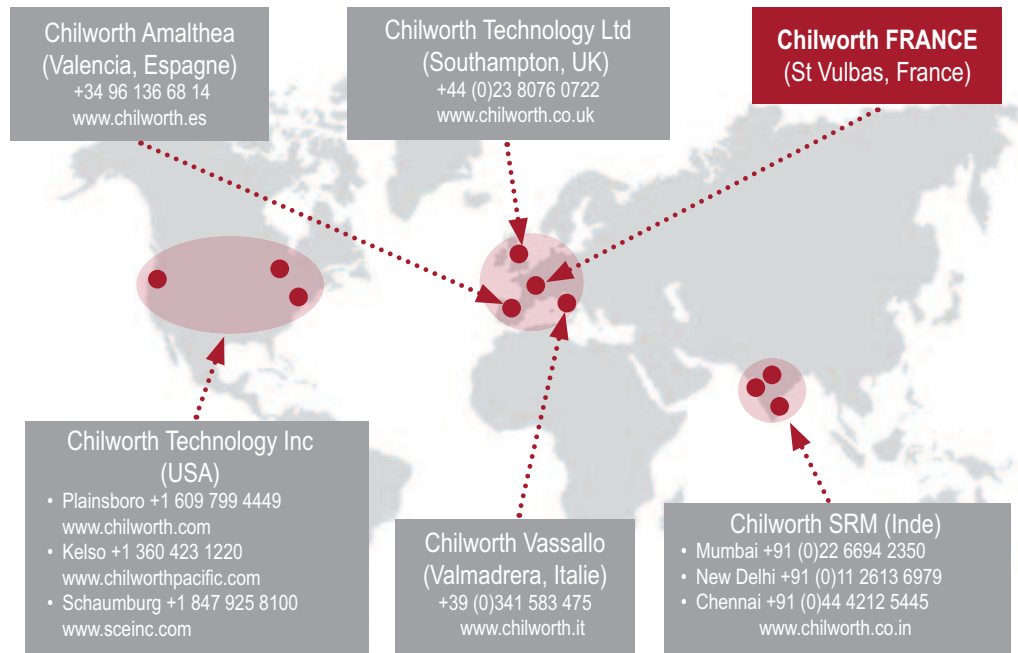
Laboratory instruments



the experts in process safety

The Group

Chilworth, Born in 1986, is a global actor in industrial process safety. Thanks to its presence in Europe, North America and Asia, Chilworth Group covers a major geographic area. The French branch, located near Lyon, offers its own expertise and, when needed, can take benefit from the support and the experience of other branches of the group.



Some examples of studies

- Tank truck explosion expertise
- Electrostatic hazards linked to the use of big-bags
- ATEX compliance for chemicals, pharmaceuticals, cosmetic industries...
- Electrostatic auditing in cosmetics and pharmaceutical industry
- Drying agrochemicals formulations safety
- Catch tank and Vent sizing
- Various training courses for chemical industry hazards: unitary operations...
- Instrumental safety real tests at starting phase of installations
- Experimental studies of chemical reactions runaway hazards
- Toxic gas dispersion studies

Our clients

Chilworth Group works for more than 700 different companies every year, in all process industry sectors: bulk and fine chemicals, pharmaceuticals, food industry and cosmetics, household and industrial waste treatment. Our references are available on demand.

Contacts

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