natran
R&I

Industrial safety

Hazard modeling software: PERSEE +
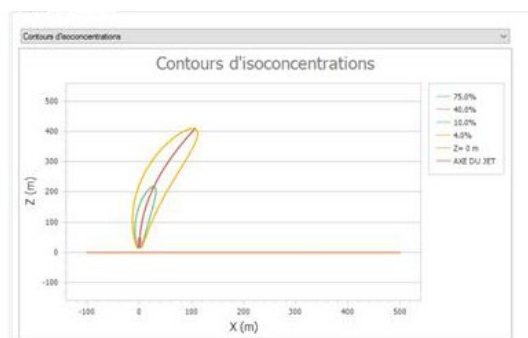
PERSÉE⁺

YOU ARE

- **In charge of safety studies** on natural gas, hydrogen or LNG facilities
- **You are a software user** and wish to anticipate the consequences of a gas release on a site, as part of a risk analysis or hazard study, but also to optimize the layout of equipment and safety barriers in relation to safety requirements.

YOUR CHALLENGES

PERSEE+ is designed to predict the consequences of accidental releases from all gas infrastructures (production, storage and transport).
It is a fast, reliable and ergonomic platform.

The PERSEE+ software (Evolving Research Platform for the Safety of Equipment and its Environment) has two modules: one dedicated to modeling the consequences of a loss of gas containment (Natural Gas & Hydrogen), the other dedicated to modeling the consequences of a loss of liquefied gas containment (LNG).

OUR STRENGTHS

- Software licenses, including corrective maintenance.
- Training of two days for the PERSEE + natural gas module, one day for the PERSEE + LNG module, and three days for both modules combined. One or two training sessions are offered per year.
- On-demand calculations: generic or specific configurations.
- Access to the user club: annual meeting to share experience.

PERSEE + is a consequence modeling tool dedicated to the assessment of hazardous phenomena associated with natural gas, LNG and new gases such as hydrogen, biogas and CO_2. Users can define accident scenarios likely to occur at their facilities, and assess the severity of their consequences in the design, development and maintenance of safe operations.

Developed and validated through NaTran R&I's extensive program of large-scale experiments, joint industrial projects and scientific publications, PERSEE+ has evolved into a state-of-the-art predictive tool whose quality is recognized by industry and regulatory bodies.

USERS AND SCOPE OF APPLICATION

PERSEE+ is designed for people in charge of safety studies (industrial safety engineers) and can be used to model numerous accident scenarios in the gas industry.
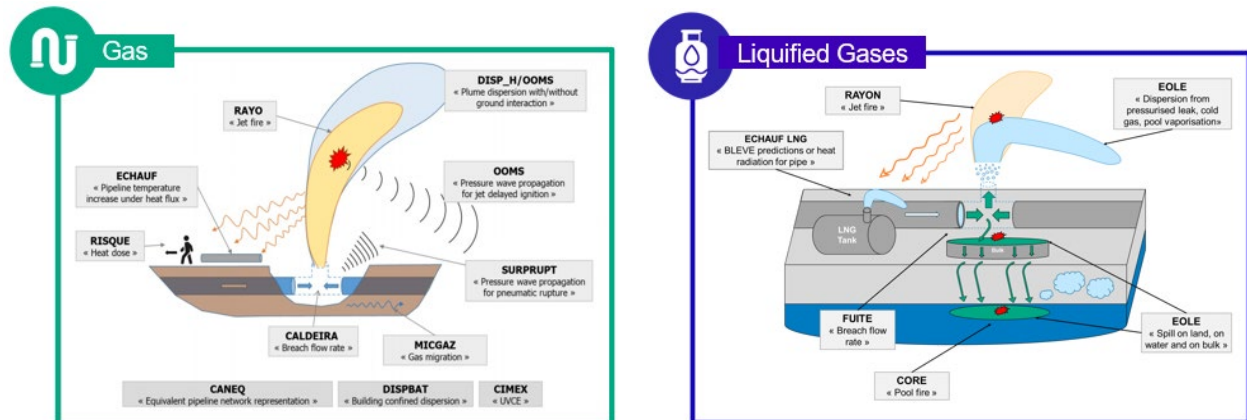
OUR RESOURCES

Regular upgrades are carried out to incorporate the latest advances in knowledge and technology.
A dedicated team of developers provides training, maintenance and a hotline for fast, efficient user support.
The tool is easy to learn and use, and delivers accurate, actionable results.

SCIENTIFIC VALIDATION

The predictive accuracy of PERSEE+ results is based on a thorough validation process

- The PERSEE+ physical models are based on recognized models (fluid mechanics with conservation of mass, energy and momentum) adapted to the specific characteristics of natural gas and hydrogen.
- The implementation of the physical models has been validated by numerous experimental campaigns.
- The validity ranges of the models have been clearly identified.

- The tool has been benchmarked on numerous occasions against full-featured and 3D commercial software and industrial accidents (e.g. Ghislenghien).
- Third-party expert reports (DNV GL, INERIS & TNO) have also validated the tool's good predictive capabilities and its ability to model accident scenarios.

PARTNERSHIPS

PERSEE+ has been developed thanks to an extensive partnership with manufacturers.

- PERSEE+ is being developed with the support of NaTran, Storengy and Elengy.
- Several MOCs have been carried out to improve the mathematical models

OUR RATES

	License	Formation	Hotline
PERSEE+ Gas software	8,500 excl. tax/ year	4 300 € HT /< 3 pers.	3,500 excl. tax (based on 20h/year)
		7 200 € HT /4 to 6 pers.	
PERSEE+ LNG software	6,000 excl. tax/ year		
PERSEE+ natural gas and LNG software	12,000 excl. tax/ year		

These prices are for internal use: you reserve the use of PERSEE+ for your own needs. For external use, i.e. offering services using this software, please contact us for a specific quote.

YOUR CONTACT

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THEY PUT THEIR TRUST IN US