

EFFECTS

Advanced, easy-to-use consequence analysis



Software that streamlines safety analysis

EFFECTS: advanced & easy-to-use consequence analysis software

Efficiently calculate the effects and consequences of the accidental release of a hazardous material using reliable and easy-to-use software. Gexcon combines transparent, traceable, and internationally recognised scientific simulations with a flexible and user-friendly interface.

Designed for safety professionals

EFFECTS is an easy-to-use software tool that allows you to analyse the consequence and lethality of toxic or flammable gases, liquefied gases, and liquids.

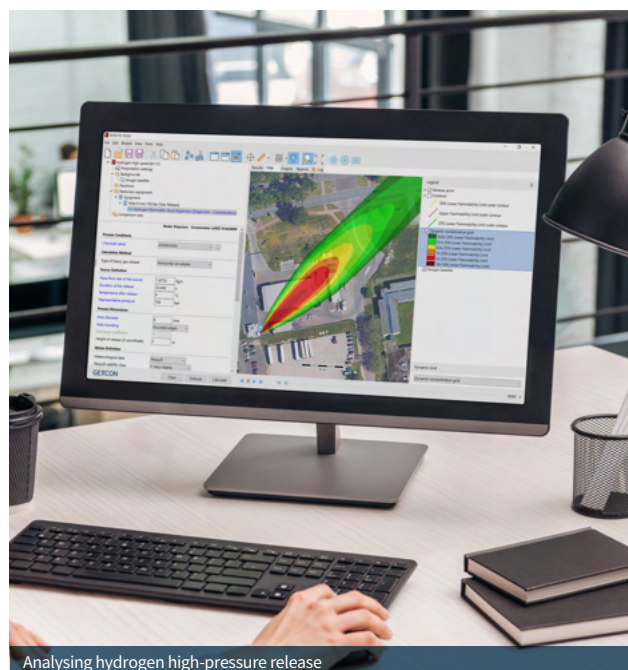
It calculates heat radiation from fires, over-pressure from explosions, toxic concentrations, and dose from dispersion clouds, and much more.

Supporting safe energy transition initiatives

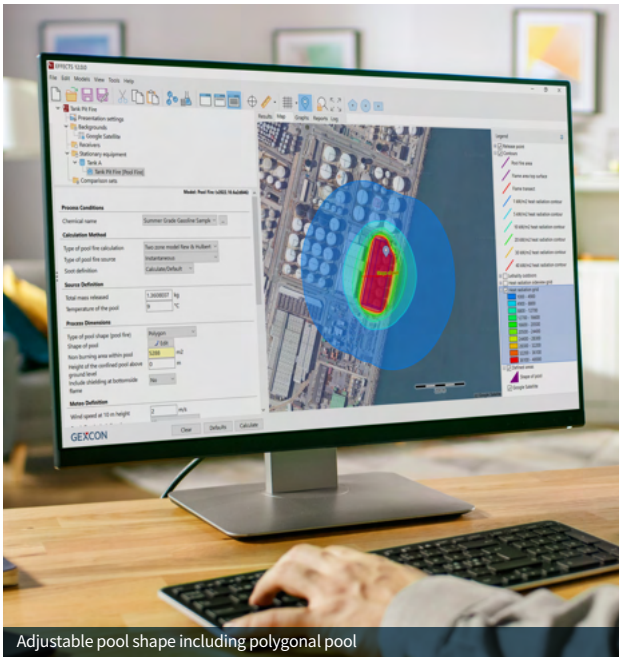
EFFECTS offers functionalities to support the energy transition and the simulation of new energy carriers, such as hydrogen and ammonia.

- A dispersion model that allows for automatic dispersion behaviour detection and simulates all behaviours including:
 - dense gas dispersions (e.g., cryogenic LNG, liquefied ammonia and LPG releases).
 - neutral gas dispersions (e.g., chemicals with similar density to air).
 - lighter-than-air dispersions (e.g., hydrogen and ammonia).
- A gas fireball model is available to calculate the instantaneous release of hydrogen gas (as it should not be modelled as a BLEVE).

- Dispersion, fire, and explosion models that consider hydrogen unique properties: lighter than air dispersion, low flame emissivity, high reactivity, and fast laminar burning velocity.
- Reliable high-speed jet release simulation to analyse highly pressurized hydrogen releases (commonly stored and transported at very high pressures – up to 900 bar).
- Improved modelling to account for plume reflection against the ground and enhanced turbulence, e.g., simulating natural gas releases.



Analysing hydrogen high-pressure release



Adjustable pool shape including polygonal pool

Insight into every scenario

With more than 70 models, EFFECTS simulates a wide variety of scenarios: from leaks and ruptures in pipelines, pressure valves, vessels and storage tanks, to confined gas explosions, BLEVEs, drifting toxic clouds and jet-, pool-, rim-, bund-, or rooftop fires, just to name a few.

The models can be examined individually or linked together for a complete picture of a loss-of-containment scenario.

Suitable for occasional & expert users

Frequent users of EFFECTS will enjoy the level of control and customisability that EFFECTS can bring. But for new or occasional users, EFFECTS offers a simple straightforward alternative.

Using 'Combined models', users can simply describe the chemical involved in an accident and process conditions, and EFFECTS automatically analyses and calculates every possible effect of a loss-of-containment scenario that might take place.

With just a few mouse clicks, occasional users can get accurate and reliable results.

Comprehensive and scalable

EFFECTS models the effect of a scenario on a specific (3D) area: either a 'congestion area' for detailed VCE calculations, or a 'vulnerable area' to calculate physical damage and lethality.

With the latest version of the DIPPR chemical database, EFFECTS contains more than 2200 known chemical components. What's more, it allows you to define customised chemicals and mixtures, specific to your own organisation.

Easy to use and share

EFFECTS is designed to have a short learning curve and be configurable for both experts and occasional users. Its modern and intuitive interface allows you to quickly determine the consequence of accidental releases.

Results in EFFECTS are presented in graphs, reports, tables, and integrated GIS environments.

Use your own maps, drawings or online satellite data from various sources. Seamless integration with Microsoft Office™, Google Earth® and dedicated GIS software, so you can quickly create professional presentations.



Share results via Google Earth©

Reliable results

EFFECTS was originally developed based on the Coloured Books and has been continuously expanded and improved since then for more than 35 years to ensure it is kept up to date with the most recent research and scientific data.

The software is also extensively validated for new energy carriers applications, including hydrogen jet fires, gas fireballs, and rising buoyant plumes.

Experience you can rely on

Gexcon is a world-leading company in the field of safety and risk management and advanced dispersion, explosion and fire modelling.

Gexcon's detailed knowledge of these phenomena is built up throughout the years by performing extensive research projects, accident investigations and validating their models with physical experiments. This ensures that the company has the expertise in developing safety tools you can trust for your safety needs.

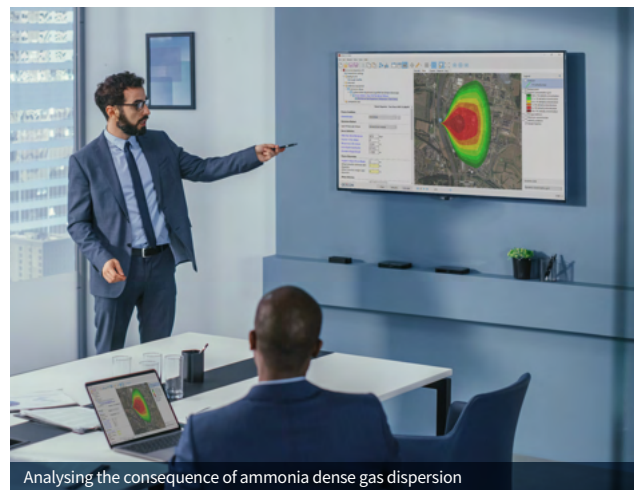
With EFFECTS, you can ensure complete, accurate and effective analysis in any scenario.

Cost-effective with flexible licensing options

EFFECTS offers a variety of flexible licensing options to suit your specific situation best.

This includes cloud licensing which allows for flexibility of a network license without the need for setting up your own license server.

The pricing allows you to use professional software regardless of if you are a large multinational company or a small engineering firm.



Want to know more?

Download a free viewing demo version of EFFECTS at gexcon.com/EFFECTS

The Coloured Books are available for download at gexcon.com/COLOUREDBOOKS

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