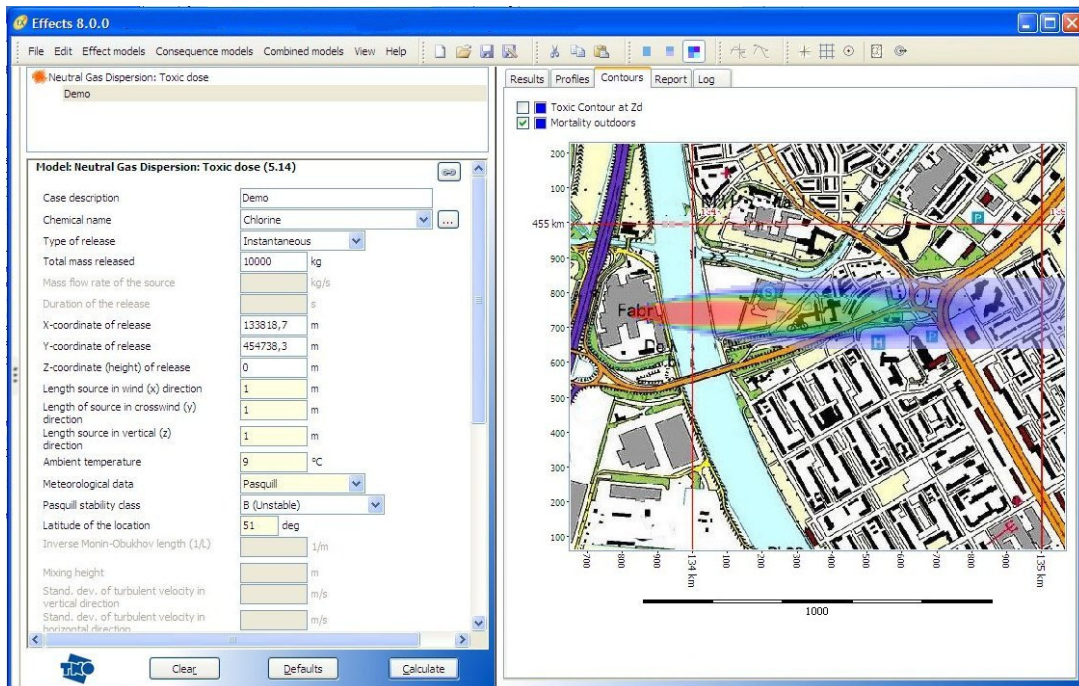


"What's new" in EFFECTS 8

A summary of changes versus EFFECTS 7.6

With EFFECTS 8, TNO introduces the latest version of its consequence modeling software EFFECTS, and focuses on improved productivity and ease of use. This document describes the changes versus EFFECTS 7.6, the latest maintenance release of EFFECTS 7.

More info needed? Please download the demo version via our web-site (www.tno.nl/effects) or contact us directly via e-mail: info.effects@tno.nl



Summary of changes:

1. NEW: "Automatic Model Linking"
2. NEW: "Universal Release Model"
3. Improved workflow with multiple (linked) models
4. NEW: Purple Book G2-release support (10 min. until empty)
5. Multiple-session reporting and comparison support
6. Various Model improvements
7. On-the-fly unit conversion and default unit sets
8. Redesigned User Interface
9. Modes of operation: novice / normal / expert
10. Alternate model chooser
11. Improved geo-referencing support
12. Microsoft Windows Vista[®] compliance
13. Microsoft Office[®] integration for enhanced reporting

1. Automatic Model Linking

One of the most important improvements is the ability to perform automatic calculation on a complete chain of models. Users can select a generic Loss Of Containment scenario, and depending on the properties of the material and the selected scenario the program will automatically select and run the appropriate chain of models.

In the example of a release of pressurized liquefied gas, depending on the initial conditions and the substance, this may involve a spray release from a hole in a vessel, followed by gas dispersion and pool evaporation, followed by heavy gas dispersion followed by a multi energy explosion.

The reporting will give you transparent and complete information on the chain of models that have been used.

2. Universal Release Model

This new model automatically selects and runs the appropriate release model (gas, liquid, liquefied gas), based on the properties of the material, environment and the Loss of Containment Scenario. This model is used as the first step in the Automatic model Linking.

3. Linked models

The internal linking of parameters has been improved. It allows a linking connection between any model or session that has run. Additionally all parameters can be manually linked to individual parameters of the previous model.

4. Purple Book G2-release support (10 min. until empty)

All release models (Gas, two phase outflow and liquids) now have a "10 min release" version: these models will search for a corresponding hole size for a 10 minutes scenario as used in the Purple Book. The models will calculate the size of the hole, required to get an representative rate which equals the flow required for the (G2) scenario in which the full inventory is released in 10 minutes.

5. Multiple-session reporting and comparison support

The reporting module is now HTML based and supports comparing of different calculation sessions in different columns.

6. Model improvements:

- In the evaporation model a spreading pool without bunds will now report the appropriate end radius.
- Some default values differ from earlier versions. This will not affect a calculation with actual values however.
- An important choice had to be made for the "best applicable method" to combine two dispersion sources. In the combined models for two phase releases, a direct release (either instantaneous or from a spray release) and a secondary feed from material from the evaporating pool can occur. For the combination of two continuous sources, this is pretty straightforward, but the combination of instantaneous and continuous dispersion -which are two modes of operation for a dispersion model- a realistic and practical method has been chosen. This method is described in detail in the section accumulation of sources.
- Instantaneous flashing liquid: the final temperature of the vapor cloud is now corrected in case it is mixed with ambient air until it reaches UEL concentration
- Neutral gas dispersion: improved accuracy (better error function); results of this improvement are mainly noticeable close to the source.
- Heavy gas dispersion, explosive mass: Improved modeled behavior of initial cloud (plume) above evaporating pool. When working in the instantaneous mode, the model now also reports the upwind contour in the contour graphs.

- All dispersion "explosion mode" models (heavy gas and neutral gas) now also report the LEL contour at time tmac (Maximum Area Cloud). This is according to the "Free field method" as described in the Purple book. For neutral gas, this LEL cloud footprint is calculated at height of release, the heavy gas model uses ground level LEL footprint.

7. On-the-fly unit conversion and default unit sets

EFFECTS 8 contains a fully automated, on-the-fly unit conversion system: by simply right-clicking on a unit, a list of possible units is presented and applied after selection. Apart from individual and default unit sets, it is also possible to use parameter specific display units: e.g present a LEL in vol% instead of mg/m³. All automated unit conversions also apply to the graph axes.

8. Redesigned User Interface

The user interface has been thoroughly revised with a shorter learning curve and a higher productivity in mind. We believe that after some "getting used to it", you will be able to produce better results in a shorter period of time.

9. Modes of operation: novice / normal / expert

The input parameters are now presented in 3 modes of operation. The novice mode only offers the minimal amount of parameters needed, while the expert mode offers all possible parameters that influence the calculation. Together with the improved default settings, calculations can be set-up relatively easy and in a short period of time.

10. Alternate model chooser

On the left side of the screen, a selection screen offers an alternative grouping of the supported models.

11. Improved geo-referencing support

Geo-referencing a background image and release point has been simplified. Additionally an expert mode is offered.

12. Microsoft Windows Vista[®] compliance

EFFECTS 8 has been completely redesigned for VISTA. The previous version 7 was Vista compatible, but still performed some writing actions in the applications directory, which was handled by the internal VISTA virtualization mechanism. Version 8 completely satisfies VISTA rules, and uses system designated folders for writing user settings and other files. The help function is now based on the current windows help format (CHM), which implies that VISTA users will not have to download the Winhelp32 engine anymore. This step guarantees a stable behavior on Windows XP, Windows Vista and a solid base for the future Windows 7.

13. Microsoft Office[®] integration for enhanced reporting

Graphs, contours and tables can easily be transferred to Microsoft Office in high resolution and including formatting. Reports can be transferred to Microsoft Excel in a single command.