

PRODUCT SHEET



PumaFlow®
Fluid Flow Simulation

PumaFlow® is a versatile and powerful fluid flow simulator, with robust physics and high-performance computing. The software is applicable to various models, from sector to full-field, from geothermal simulation to compositional and dual medium, thermal and chemical EOR, or CO₂ injection and monitoring. Validated on some of the largest and most complex oil fields worldwide, PumaFlow® is compliant with industry standards, integrates smoothly with other simulators, and seamlessly fits into sophisticated reservoir engineering workflows.

Versatile calculator and rigorous physical formulations

PumaFlow® embeds best-in-class formulations for any reservoir configuration, including black-oil, dual medium, compositional, chemical EOR, thermal, and unconventional reservoirs into a single calculator and user interface. For the last twenty years, PumaFlow® has been the reference simulator for fractured reservoirs and the modeling of all exchange mechanisms between matrix and fractures including capillarity, gravity drainage and viscous forces, diffusion and block-to-block re-imbibition.

PumaFlow® accurately handles various thermal processes that can be combined with dual medium and compositional options for fractured reservoirs. Optional gas adsorption model can be added to simulate shale gas reservoirs. All types of chemical EOR processes are accurately modeled from lab to full field scale, including polymer, surfactants, alkaline, CO₂, ASP, foam, and others. PumaFlow offers also a complete solution to design and simulate Intelligent Completion Devices.

Unrivalled scalability and performances

PumaFlow® numerical solvers and numerical schemes (SOLSS, IMPES, IMPEX and AIM) have been relentlessly optimized. They leverage computer configuration through unrivalled scalability across cluster nodes, adopting innovative solving algorithms and by optimizing domains partitioning. PumaFlow® allows running very large models with performance improvement,

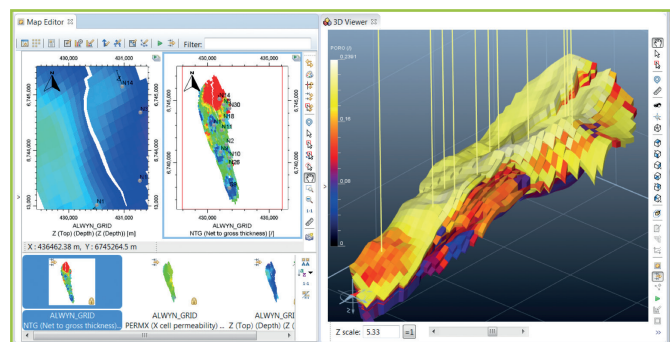
often up to 64 cores. PumaFlow® runs on Linux and Windows platforms.

Next generation user-interface

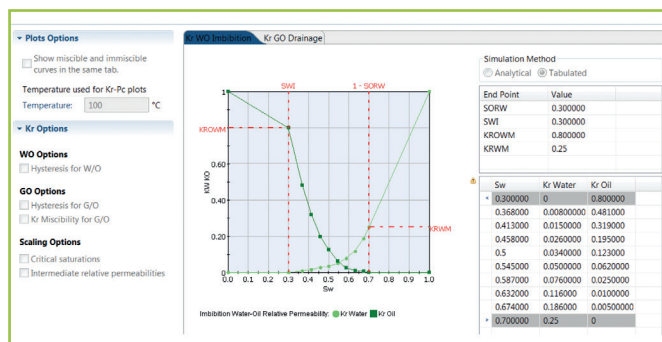
PumaFlow® comes with an innovative approach to the user interface, using an industry-standard computer environment and supported by a relational database. All the static and dynamic parameters and input data used by the simulation can be interactively and graphically input, controlled and modified in seconds. PumaFlow® can also run using traditional keyword files. It comes with modern graphically-oriented post-processing capabilities allowing instant analysis of the results of multiple simulation runs. The post-processing is also fully compatible with Eclipse, VIP/Nexus and CMG simulators.

Key benefits

- All-in-one fully interactive platform including model preparation, simulation, post-processing, PVT package, uncertainties and assisted history matching.
- Unrivalled scalability and performances on black-oil and dual medium.
- Versatile simulator including all options (Black Oil, Compositional, Dual Medium, Shale Gas, Chemical and Thermal EOR) in one calculator.
- Excellence in physics.



Accurate Multi 2D and 3D Views



Interactive definition of simulation elements. Here, relative permeability tables and options