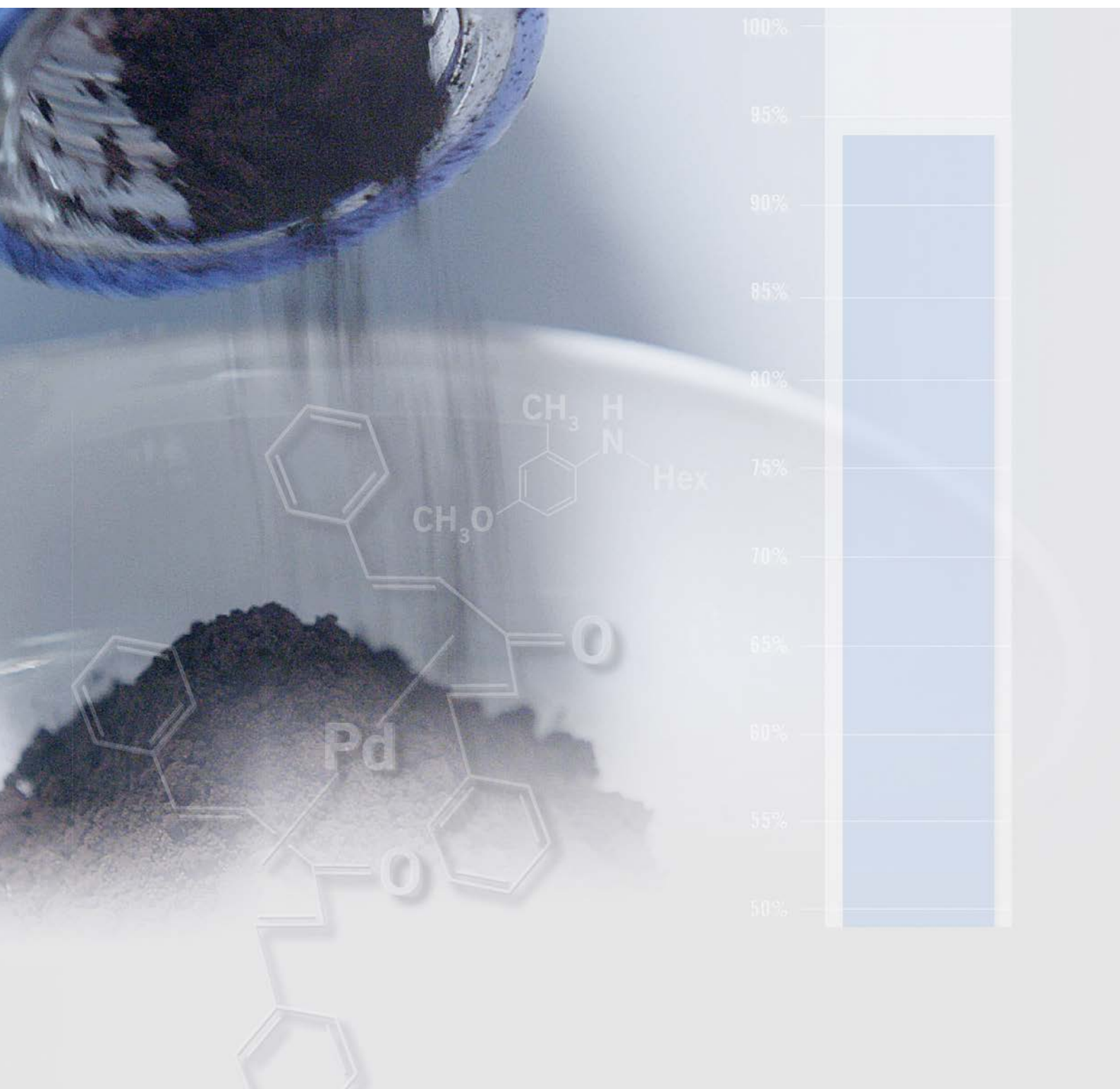




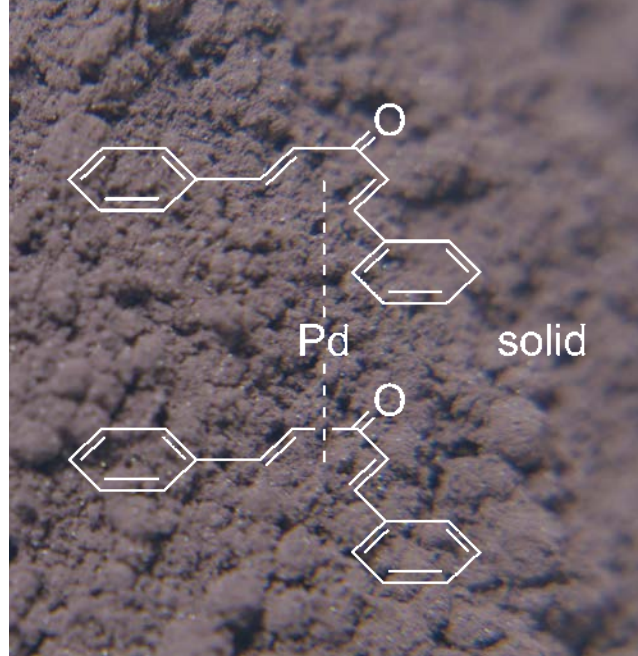
Pd₂(dba)₃ FOR CROSS- COUPLING REACTIONS

Benchmarking Results

Tris(dibenzylideneacetone)dipalladium(0) is an organometallic compound. It is a red brown to black solid which is soluble in organic solvents. Because the dba ligands can be easily exchanged, the complex is used as a precursor for homogeneous catalysts in organic synthesis.

EASY TO HANDLE

- › Air-stable
- › Easy to transport
- › Non-explosive
- › No cooling required



EXTERNAL BENCHMARKS PROVE:

HIGH PERFORMANCE OF HERAEUS $\text{Pd}_2(\text{dba})_3$ FOR CROSS-COUPLING REACTIONS

BENCHMARK CONDITIONS

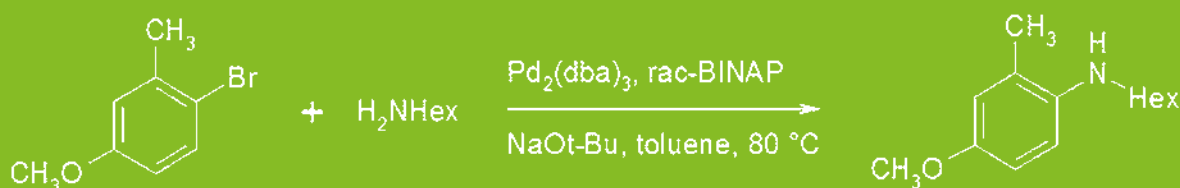
The benchmark test of $\text{Pd}_2(\text{dba})_3$ was conducted in a well-known cross-coupling reaction: the Buchwald-Hartwig Amination. This reaction is an excellent method for synthesizing amines, utilized in pharmaceutical and fine chemical as well as electronics applications.



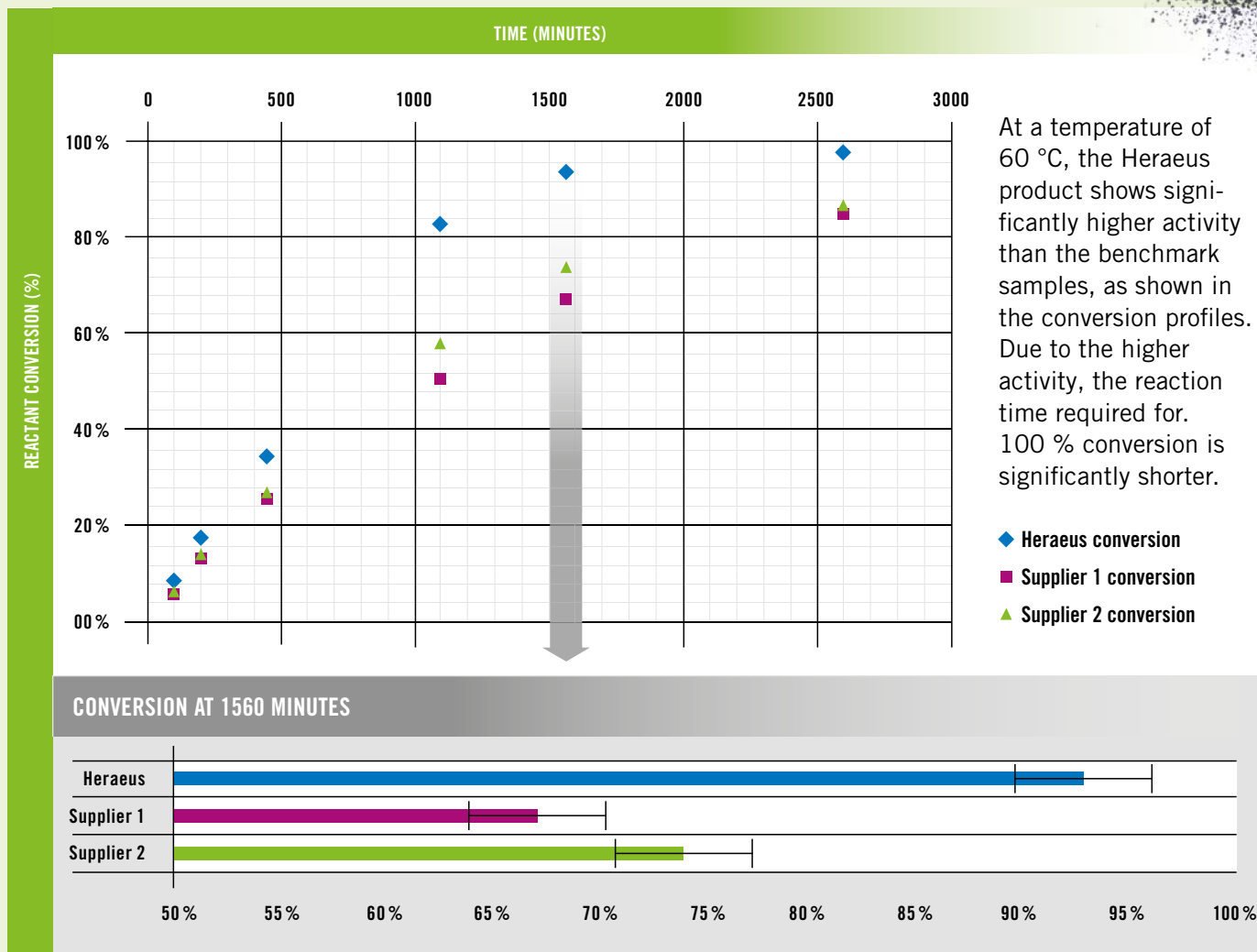
Three different $\text{Pd}_2(\text{dba})_3$ samples from leading suppliers were benchmarked under the following conditions:

- › Catalyst loading of 0.5 mol%
- › Three different temperatures: 60 °C, 70 °C and 80 °C
- › Ambient pressure
- › Two different stirring rates to check mass transfer limitations
- › To check reproducibility, all experiments were repeated

THE BUCHWALD-HARTWIG AMINATION

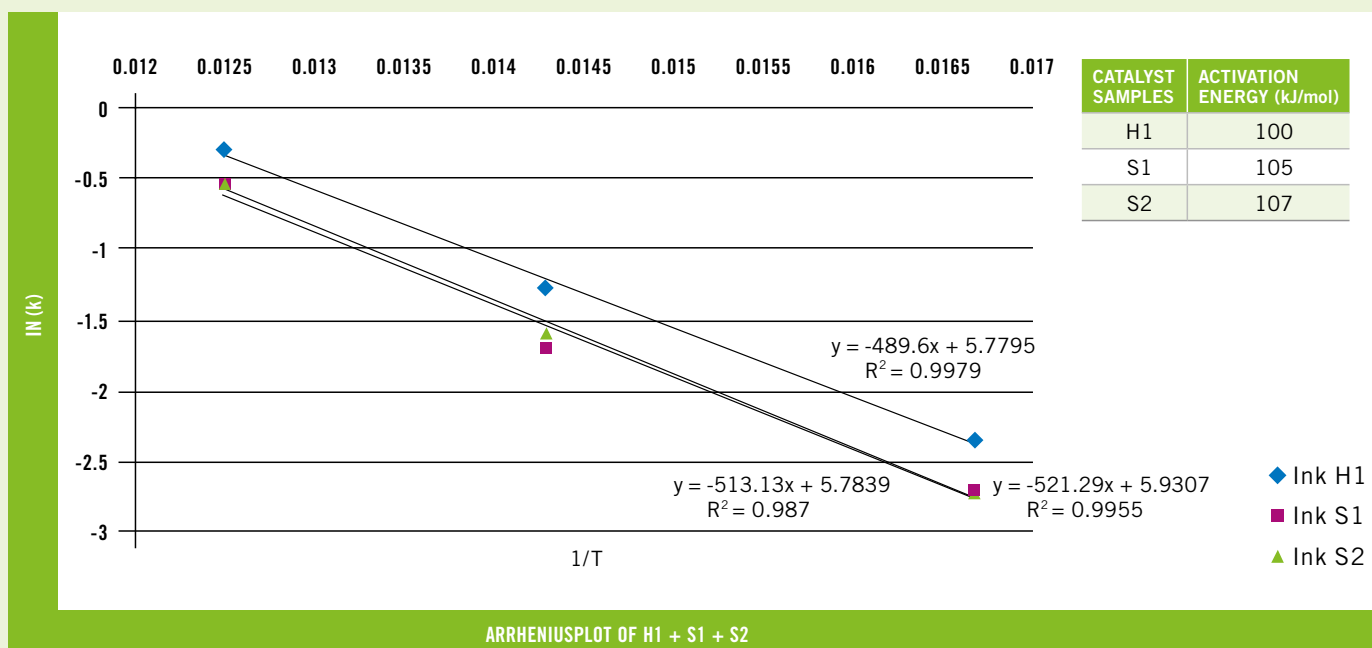


100% CONVERSION IN LESS TIME



LOWER ACTIVATION ENERGY

The Heraeus product shows better activity at all temperatures as reflected in the activation energy plot. The lower activation energy compared to the benchmark samples confirms that Heraeus $\text{Pd}_2(\text{dba})_3$ is more active overall.





ABOUT HERAEUS PRECIOUS METALS

Heraeus Precious Metals is one of the world's leading players in the precious metals industry.

As part of the Heraeus Group, the company covers the value chain from trading to precious metals products to refining and recycling. It has extensive expertise in all platinum group metals as well as gold and silver.

With about 2,500 employees at 11 sites worldwide, Heraeus Precious Metals offers a broad portfolio of products that are essential for many industries such as the automotive, chemicals, semiconductor, aerospace, pharmaceutical and hydrogen industry.

Heraeus Precious Metals

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