



# Agilent Technologies

**Agilent J&W DB-17**

A collection of citations to advance your research

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## Energy and chemicals

### [Iron Particle Size Effects for Direct Production of Lower Olefins from Synthesis Gas](#)

*Journal of the American Chemical Society*, **134**,  
16207-16215 (2012)  
Hirsa M. Torres Galvis *et al.*

**Tags**  
CP-Sil 5 CB, DB-17, GS-GasPro, 7890 GC, energy  
and chemicals, natural gas

#### **Abstract**

The Fischer–Tropsch synthesis of lower olefins (FTO) is an alternative process for the production of key chemical building blocks from non-petroleum-based sources such as natural gas, coal, or biomass. The influence of the iron carbide particle size of promoted and unpromoted carbon nanofiber supported catalysts on the conversion of synthesis gas has been investigated at 340–350 °C, H<sub>2</sub>/CO = 1, and pressures of 1 and 20 bar. The surface-specific activity (apparent TOF) based on the initial activity of unpromoted catalysts at 1 bar increased 6–8-fold when the average iron carbide size decreased from 7 to 2 nm, while methane and lower olefins selectivity were not affected. The same decrease in particle size for catalysts promoted by Na plus S resulted at 20 bar in a 2-fold increase of the apparent TOF based on initial activity which was mainly caused by a higher yield of methane for the smallest particles. Presumably, methane formation takes place at highly active low coordination sites residing at corners and edges, which are more abundant on small iron carbide particles. Lower olefins are produced at promoted (stepped) terrace sites that are available and active, quite independent of size. These results demonstrate that the iron carbide particle size plays a crucial role in the design of active and selective FTO catalysts. Reprinted with permission from the Journal of the American Chemical Society © 2012 American Chemical Society.

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## Environmental

### [Thermal desorption GC–MS as a tool to provide PAH certified standard reference material on particulate matter quartz filters](#)

*Talanta*, **105**, 101-108 (2013)  
Emanuela Grandesso, Pascual Pérez Ballesta,  
Konrad Kowalewski

**Tags**  
DB-17, 6890 GC, 5975C MS, 5973 MS,  
environmental, soil, sludges and sediments

#### **Abstract**

An Agilent J&W DB-17 GC column, with Agilent GC/MS instruments, was used in an assessment of thermal desorption GC/MS as a tool to provide PAH-certified standard reference material on particulate quartz filters. Published by Elsevier B. V.

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[A new validated analytical method for the determination of tributyltin in water samples at the quantification level set by the European Union](#)

*Journal of Chromatography A*, **1261**, 151-157 (2012)  
Christophe Devos, Frank David, Pat Sandra

**Tags**  
DB-17, DB-17ms, HP-5ms, 7890 GC, 7000B Triple Quadrupole MS, environmental, water analysis

**Abstract**

Agilent J&W GC columns and instruments were used to develop heart-cutting GC/MS methods for tributyltin in water samples to meet new, more stringent EU regulations. Published by Elsevier B. V.

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[Processing of meteoritic organic materials as a possible analog of early molecular evolution in planetary environments](#)

*PNAS*, **110**, 15614-15619 (2013)  
Sandra Pizzarello *et al.*

**Tags**  
CP-Chirasil Dex CB, DB-17, 6890N, 5973N, environmental, soils, sludges and sediments

**Abstract**

GC/MS analysis of insoluble organic material from a meteorite was achieved using Agilent J&W CP-Chirasil-Dex CB and DB-17 GC columns on an Agilent 6890N/5973N GC/MS. Published by PNAS.

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## Food testing and agriculture

[Finding of pesticides in fashionable fruit juices by LC-MS/MS and GC-MS/MS](#)

*Food Chemistry*, **134**, 2398-2405 (2012)  
Kevin Tran *et al.*

**Tags**  
HP-5ms UI, DB-5, DB-17, 7890A GC, 5975C MSD, 7000 Triple Quadrupole MS, food testing and agriculture, pesticides, fruit juice

**Abstract**

Over 100 pesticides were detected in mushrooms, açai, goji, mangosteen, noni, pomegranate, and sea buckthorn using an Agilent GC/MSD equipped with Agilent J&W GC columns. Published by Elsevier B.V.

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