Petroleum & Petrochemical

ASTM Petrochemical Method Chromatography Product Guide

RESTEK® Pure Chromatography www.restek.com

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Restek is your ideal partner for integrated petrochemical solutions, and the following ASTM method product guide will help you quickly pick the right GC columns and reference standards for SimDist, DHA, finished gasoline, and other common petroleum analyses.

If you have any questions or need more information, visit **www.restek.com/petro** for additional resources or to contact one of our in-house petroleum experts for assistance.

Method #	Method Title	Restek® Column(s)	Restek® Reference Standard(s)
(High-Temperature) Simulated Distillation (SimDist)			
D2887	Standard Test Method for Boiling Range Distribution of Petroleum Fractions by Gas Chromatography (C5–C44)	MXT®-2887, Siltek®-treated stainless steel, 10 m x 0.53 mm x 2.65 µm - cat.# 70199 *or* MXT®-1HT SimDist, Siltek®-treated stainless steel, 10 m x 0.53 mm x 2.65 µm - cat.# 70132	ASTM D2887-12 Calibration Standards - cat.# 31674 - cat.# 31675 Polywax® Standards - cat.# 36224–36227 D2887 Calibration Mix - cat.# 31222
D7213	Standard Test Method for Boiling Range Distribution of Petroleum Distillates in the Boiling Range From 100 to 615 °C by Gas Chromatography (C5–C60)	MXT®-1HT SimDist, Siltek®-treated stainless steel, 5 m x 0.53 mm x 0.10 µm - cat.# 70112 *or* MXT®-1HT SimDist, Siltek®-treated stainless steel, 5 m x 0.53 mm x 0.20 µm - cat.# 70115 *or* MXT®-1HT SimDist, Siltek®-treated stainless steel, 5 m x 0.53 mm x 0.88 µm - cat.# 70131	E-mail standards@restek.com for more information.
D6352	Standard Test Method for Boiling Range Distribution of Petroleum Distillates in Boiling Range From 174 to 700 °C by Gas Chromatography (C10–C90)	MXT®-1HT SimDist, Siltek®-treated stainless steel, 5 m x 0.53 mm x 0.10 µm - cat.# 70112 *or* MXT®-1HT SimDist, Siltek®-treated stainless steel, 5 m x 0.53 mm x 0.20 µm - cat.# 70115	Polywax® Standards - cat.# 36224–36227
D7398	Standard Test Method for Boiling Range Distribution of Fatty Acid Methyl Esters (FAME) in the Boiling Range From 100 to 615 °C by Gas Chromatography	MXT®-1HT SimDist, Siltek®-treated stainless steel, 5 m x 0.53 mm x 0.88 µm - cat.# 70131	Polywax® Standards - cat.# 36224–36227
D7500	Standard Test Method for Determination of Boiling Range Distribution of Distillates and Lubricating Base Oils in Boiling Range From 100 to 735 °C by Gas Chromatography (C7–C110)	MXT®-1HT SimDist, Siltek®-treated stainless steel, 5 m x 0.53 mm x 0.10 µm - cat.# 70112 *or* MXT®-1HT SimDist, Siltek®-treated stainless steel, 5 m x 0.53 mm x 0.20 µm - cat.# 70115	Polywax® Standards - cat.# 36224–36227
D7169	Standard Test Method for Boiling Point Distribution of Samples with Residues Such as Crude Oils and Atmospheric and Vacuum Residues by High-Temperature Gas Chromatography	MXT®-1HT SimDist, Siltek®-treated stainless steel, 5 m x 0.53 mm x 0.10 µm - cat.# 70112 *or* MXT®-1HT SimDist, Siltek®-treated stainless steel, 5 m x 0.53 mm x 0.20 µm - cat.# 70115	Polywax® Standards - cat.# 36224–36227
D7096 (replaces D3710)	Standard Test Method for Determination of the Boiling Range Distribution of Gasoline by Wide-Bore Capillary Gas Chromatography	MXT®-1, Siltek®-treated stainless steel, 15 m x 0.53 mm x 5.00 µm - cat.# 70177 *or* MXT®-1, Siltek®-treated stainless steel, 30 m x 0.53 mm x 5.00 µm - cat.# 70179	E-mail standards@restek.com for more information.
Detailed Hydrocarbon Analysis (DHA)			
D5134	Standard Test Method for Detailed Analysis of Petroleum Naphthas Through *n*-Nonane by Capillary Gas Chromatography	Rtx®-DHA-50, 50 m x 0.20 mm x 0.50 µm - cat.# 10147	DHA Standards - cat.# 33034 - cat.# 30725–30731
D6729	Standard Test Method for Determination of Individual Components in Spark Ignition Engine Fuels by 100-Meter Capillary High-Resolution Gas Chromatography	Rtx®-DHA-100, 100 m x 0.25 mm x 0.50 µm - cat.# 10148	DHA Standards - cat.# 33034 - cat.# 30725–30731
D6730	Standard Test Method for Determination of Individual Components in Spark Ignition Engine Fuels by 100–Meter Capillary (with pre-column) High-Resolution Gas Chromatography	Rtx®-DHA-100, 100 m x 0.25 mm x 0.50 µm - cat.# 10148 *and* Rtx®-5 DHA Tuning, 5 m x 0.25 mm x 1.00 µm - cat.# 10165	DHA Standards - cat.# 33034 - cat.# 30725–30731
D6733	Standard Test Method for Determination of Individual Components in Spark Ignition Engine Fuels by 50-Meter Capillary High-Resolution Gas Chromatography	Rtx®-DHA-50 , 50 m x 0.20 mm x 0.50 µm - cat.# 10147	DHA Standards - cat.# 33034 - cat.# 30725–30731
D5501	Standard Test Method for Determination of Ethanol Content of Denatured Fuel Ethanol by Gas Chromatography	Rtx®-DHA-150, 150 m x 0.25 mm x 1.00 µm - cat.# 10149	E-mail standards@restek.com for more information.

Method #	Method Title	Restek® Column(s)	Restek® Reference Standard(s)
Finished Gasoline			
D3606	Standard Test Method for Determination of Benzene and Toluene in Finished Motor and Aviation Gasoline by Gas Chromatography	D3606 Application 2-Column Set - cat.# 83606-800 Specified in the D3606 method addendum - includes: - Rtx®-1 , 6' (1.8 m), 1/8" OD, 2.0 mm ID *and* - proprietary packing, 16' (4.9 m), 1/8" OD, 2.0 mm ID	D3606 Standards - cat.# 30647–30674
D4815	Standard Test Method for Determination of MTBE, ETBE, TAME, DIPE, tertiary-Amyl Alcohol, and C1 to C4 Alcohols in Gasoline by Gas Chromatography (Oxygenates)	Micropacked with 20% TCEP on 80/100 Chromosorb PAW 0.56 m x 0.75 mm ID x 1/16" OD - cat.# 19040 *and* Rtx®-1 , 30 m x 0.53 mm x 3.00 µm - cat.# 10185	E-mail standards@restek.com for more information.
D5580	Standard Test Method for Determination of Benzene, Toluene, Ethylbenzene, p/m-Xylene, o-Xylene, C9 and Heavier Aromatics, and Total Aromatics in Finished Gasoline by Gas Chromatography	Micropacked with 20% TCEP on 80/100 Chromosorb PAW 0.56 m x 0.75 mm ID x 1/16" OD - cat.# 19040 *and* Rtx®-1, 30 m x 0.53 mm x 5.00 µm - cat.# 10179	E-mail standards@restek.com for more information.
Biodiesel			
D6584	Test Method for Determination of Free and Total Glycerin in B-100 Biodiesel Methyl Esters by Gas Chromatography	MXT®-Biodiesel TG, 14 m x 0.53 mm x 0.16 µm with 2 m Integra-Gap® - cat.# 70289 *or* MXT®-Biodiesel TG, Siltek®-treated stainless steel 10 m x 0.32 mm x 0.10 µm with 2 m x 0.53 mm retention gap - cat.# 70290 *or* Rtx®-Biodiesel TG, 10 m x 0.32 mm x 0.10 µm with 2 m x 0.53 mm retention gap - cat.# 10291	Biodiesel Standards - cat.# 31880 - cat.# 33020–33026 - cat.# 33032–33033
Natural Gas			
D1945	Standard Test Method for Analysis of Natural Gas by Gas Chromatography	MXT®-Msieve 5A, Siltek®-treated stainless steel, 30 m x 0.53 mm x 50 µm - cat.# 79723-273 *and* MXT®-Q-BOND, Siltek®-treated stainless steel, 30 m x 0.53 mm x 20 µm - cat.# 79716-273	Natural Gas Standards - cat.# 34438–34440
Refinery Gas			
D2163	Standard Test Method for Determination of Hydrocarbons in Liquefied Petroleum (LP) Gases and Propane/Propene Mixtures by Gas Chromatography	Rt®-Alumina BOND/Na_2SO_4, 50 m x 0.53 mm x 10 µm - cat.# 19756	Refinery Gas Standards - cat.# 34441–34443
D1946 (UOP 539)	Standard Practice for Analysis of Reformed Gas by Gas Chromatography	2abc Refinery Gas Packed Column Set - cat.# 88000-875 *or* MXT®-Msieve 5A, Siltek®-treated stainless steel, 30 m x 0.53 mm x 50 µm - cat.# 79723-273 *and* MXT®-Q-BOND, Siltek®-treated stainless steel, 30 m x 0.53 mm x 20 µm - cat.# 79716	E-mail standards@restek.com for more information.
Impurities			
D2593	Standard Test Method for Butadiene Purity and Hydrocarbon Impurities by Gas Chromatography	Rt®-Alumina BOND/MAPD, 50 m x 0.53 mm x 10 µm - cat.# 19778	Refinery Gas Standard #5 - cat.# 34443
D2712	Standard Test Method for Hydrocarbon Traces in Propylene Concentrates by Gas Chromatography	Rt®-Alumina BOND/Na_2SO_4, 50 m x 0.53 mm x 10 µm - cat.# 19756	Refinery Gas Standard #5 - cat.# 34443
D6159	Standard Test Method for Determination of Hydrocarbon Impurities in Ethylene by Gas Chromatography	Rt®-Alumina BOND/KCl, 50 m x 0.53 mm x 10 µm - cat.# 19760 *and* Rtx®-1, 30 m x 0.53 mm x 5.00 µm - cat.# 10179	Refinery Gas Standard #5 - cat.# 34443
Sulfur			
D6228	Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Flame Photometric Detection	Rtx®-1, 60 m x 0.53 mm x 7.00 µm - cat.# 10193 *or* MXT-®-1, Siltek®-treated stainless steel, 60 m x 0.53 mm x 7.00 µm - cat.#70193	E-mail standards@restek.com for more information.
D5623	Standard Test Method for Sulfur Compounds in Light Petroleum Liquids by Gas Chromatography and Sulfur Selective Detection	Rtx®-1, 30 m x 0.32 mm x 4.00 µm - cat.# 10198	E-mail standards@restek.com for more information.

Learn more at **www.restek.com/petro**

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Lit. Cat.# PCAR2082-UNV