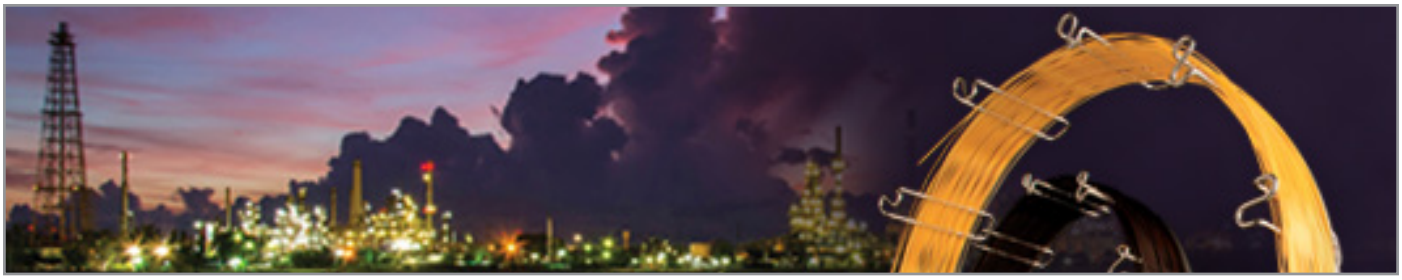

ASTM Petrochemical Method Chromatography Product Guide

Proven, Integrated Solutions and Veteran Expertise for Your Petrochemical & Chemical Analyses

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.

(High-Temperature) Simulated Distillation (SimDist)

Method #	Method Title	Restek Column(s)	Restek Reference Standard(s)	Chromatogram#
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 *or* Rtx-2887 Column 10 m x 0.53 mm x 2.65 µm - cat.# 10199	ASTM D2887-12 Calibration Standards - cat.# 31674 Polywax Standards - cat.# 36224–36227 D2887 Calibration Mix - cat.# 31222	GC_PC1299 GC_PC00750
D2887B Accelerated	Standard Test Method for Boiling Range Distribution of Petroleum Fractions by Gas Chromatography (C5–C44)	MXT-1HT SimDist Column 10 m x 0.53 mm x 0.88 µm - cat.# 70134 *or* MXT-1HT SimDist Column 5 m x 0.53 mm x 2.65 µm - custom column #1396	ASTM D2887-12 Calibration Standards - cat.# 31674 Polywax Standards - cat.# 36224–36227 D2887 Calibration Mix - cat.# 31222	GC_PC1303
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	Request today	GC_PC1285 GC_PC1191
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	GC_PC1188
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	GC_PC1285

(High-Temperature) Simulated Distillation (SimDist) *(Continued from page 1)*

Method #	Method Title	Restek Column(s)	Restek Reference Standard(s)	Chromatogram#
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	GC_PC1164 GC_PC1165
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	GC_PC1308
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	Request today *or* D3710-95 Calibration Mix - cat.# 31223	GC_PC1326 GC_PC1327 GC_PC1328

Detailed Hydrocarbon Analysis (DHA)

Method #	Method Title	Restek Column(s)	Restek Reference Standard(s)	Chromatogram#
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	Request today	GC_PC1318 GC_PC1319 GC_PC1320
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	GC_PC1322 GC_PC1323 GC_PC1324 GC_PC1325 GC_PC1330
D6730	Standard Test Method for Determination of Individual Components in Spark Ignition Engine Fuels by 100–Meter Capillary (with precolumn) 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	GC_PC1284
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	

Finished Gasoline

Method #	Method Title	Restek Column(s)	Restek Reference Standard(s)	Chromatogram#
D3606	Standard Test Method for Determination of Benzene and Toluene in Spark Ignition Fuels by Gas Chromatography	D3606 Application 2-Column Set - cat.# 83606A *Specified in the D3606 method addendum — includes:* - Column 1: Backflush column, 6' (1.8 m), 1/8" OD, 2.0 mm ID *and* - Column 2: proprietary packing, 15.5' (4.7 m), 1/8" OD, 2.0 mm ID	D3606 Standards - cat.# 30647–30674	GC_PC1366 GC_PC1372
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	Request today	GC_PC00194
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	Request today	
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 *or* Rtx-DHA-100 100 m x 0.25 mm x 0.50 µm - cat.# 10148	Request today	GC_PC1144

Biodiesel

Method #	Method Title	Restek Column(s)	Restek Reference Standard(s)	Chromatogram#
D6584	Test Method for Determination of Free and Total Glycerin in B-100 Biodiesel Methyl Esters by Gas Chromatography	MXT-Biodiesel TG, Siltek-treated stainless steel 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 15 m x 0.32 mm x 0.10 µm with 2 m x 0.53 mm retention gap - cat.# 70291 *or* Rtx-Biodiesel TG 15 m x 0.32 mm x 0.10 µm with 2 m x 0.53 mm retention gap - cat.# 10293	Biodiesel Standards - cat.# 31880 - cat.# 33020–33026 - cat.# 33032–33033	GC_PC1293 GC_PC00969

Jet Fuel

Method #	Method Title	Restek Column(s)	Restek Reference Standard(s)	Chromatogram#
D8267	Standard Test Method for Determination of Saturated Hydrocarbon, Aromatic, and Diaromatic Content of Aviation Turbine Fuels Using Gas Chromatography with Vacuum Ultraviolet Absorption Spectroscopy Detection (GC-VUV)	Rxi-1ms 30 m x 0.25 mm x 0.25 µm - cat.# 13323	Request today	GC_PC1359

Natural Gas

Method #	Method Title	Restek Column(s)	Restek Reference Standard(s)	Chromatogram#
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	GC_PC1182

Refinery Gas

Method #	Method Title	Restek Column(s)	Restek Reference Standard(s)	Chromatogram#
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	GC_PC1309 GC_PC1310
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	Request today	GC_PC1182

Impurities

Method #	Method Title	Restek Column(s)	Restek Reference Standard(s)	Chromatogram#
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	GC_PC1202
D2712	Standard Test Method for Hydrocarbon Traces in Propylene Concentrates by Gas Chromatography	Rt-Alumina BOND/KCl 50 m x 0.53 mm x 10 µm - cat.# 19760	Refinery Gas Standard #5 - cat.# 34443	GC_PC01142
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	GC_PC01110
D5441	Standard Test Method for Analysis of Methyl *Tert*-Butyl Ether (MTBE) by Gas Chromatography	Rtx-DHA-100 100 m x 0.25 mm x 0.50 µm - cat.# 10148 *or* Rtx-DHA-50 50 m x 0.20 mm x 0.50 µm - cat.# 10147 *or* Rtx-DHA-150 150 m x 0.25 mm x 1.0 µm - cat.# 10149	Request today	GC_PC1268 GC_PC1270 GC_PC1269

Sulfur

Method #	Method Title	Restek Column(s)	Restek Reference Standard(s)	Chromatogram#
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 *or* Rtx-1 60 m x 0.32 mm x 5.0 µm - cat.# 10180	Request today	GC_PC1223
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	Request today (gas, liquid)	GC_PC1271 GC_PC00198

Industrial Chemicals

Method	Method Title	Restek Column(s)	Restek Reference Standard(s)	Chromatogram#
D5917	Standard Test Method for Trace Impurities in Monocyclic Aromatic Hydrocarbons by Gas Chromatography and External Calibration	Stabilwax 60 m x 0.32 mm x 0.25 µm - cat.# 10627	Request today	GC_PC1355 GC_PC1352 GC_PC1353 GC_PC1354
D7266	Standard Test Method for Analysis of Cyclohexane by Gas Chromatography (External Standard)	Rtx-DHA-100 100 m x 0.25 mm x 0.50 µm - cat.# 10148	Request today	GC_PC1356
D7504	Standard Test Method for Trace Impurities in Monocyclic Aromatic Hydrocarbons by Gas Chromatography and Effective Carbon Number	Stabilwax 60 m x 0.32 mm x 0.25 µm - cat.# 10627	Request today	GC_PC1352 GC_PC1353 GC_PC1354 GC_PC1355
D7871	Standard Test Method for Analysis of Cyclohexane by Gas Chromatography (Effective Carbon Number)	Rtx-DHA-100 100 m x 0.25 mm x 0.50 µm - cat.# 10148	Request today	GC_PC1356
D7011	Standard Test Method for Determination of Trace Thiophene in Refined Benzene by Gas Chromatography and Sulfur Selective Detection	Rtx-WAX 30 m x 0.32 mm x 1.00 µm - cat.# 12454	Request today	GC_PC1357
D6144	Standard Test Method for Analysis of AMS (a-Methylstyrene) by Capillary Gas Chromatography	Rtx-1 60 m x 0.32 mm x 1.00 µm - cat.# 10157	Request today	GC_PC1351
D7057	Standard Test Method for Analysis of Isopropylbenzene (Cumene) by Gas Chromatography (External Standard)	Rtx-1 60 m x 0.32 mm x 1.00 µm - cat.# 10157	Request today	GC_PC1350

RESTEK
Pure Chromatography

Questions? Contact us or your local Restek representative (www.restek.com/contact-us).

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