

for **more info**

See pages 658-668 for chromatograms of flavors and fragrances analysis.

Fragrance Materials Test Mix

The Fragrance Materials Association (FMA) has proposed a method for analyzing essential oils on polar and non-polar capillary GC columns. A performance evaluation mixture should be used to aid in detecting inlet problems, stationary phase degradation, loss of resolution, changes in sensitivity, and the presence of reactive sites in the sample pathway. Our test mix is consistent with the mixture proposed by the FMA. The required 5% test solution is made by diluting the 0.5mL of neat mixture to 10mL with acetone. The working solution will be stable for up to one week if transferred to a dark container and stored refrigerated.

benzoic acid	1.0%	geraniol	0.6%
benzyl salicylate	36.2%	hydroxycitronellal	
1,8-cineole (eucalyptol)	0.5%	(3,7-dimethyl-7-	
<i>trans</i> cinnamaldehyde	0.5%	hydroxyoctanal)	5.0%
cinnamyl acetate	0.3%	d-limonene	20.0%
cinnamyl alcohol	0.3%	thymol	0.3%
ethyl butyrate	36.2%	vanillin	0.1%

Neat, 0.5mL in an amber ampul
cat. # 31807 (ea.)

No data pack available.

Dimethyldichlorosilane (DMDCS)

Restek offers dimethyldichlorosilane (DMDCS), for deactivating liners and other glassware. Simply dilute the neat material to a 5% solution in toluene, soak the glass item(s) in the solution for 15 minutes, and rinse with toluene and methanol. DMDCS reacts with active hydroxyl groups on the glass surface to produce a deactivated surface. A detailed procedure is included with the product.

dimethyldichlorosilane (DMDCS)
Neat, 20mL/ampul
cat. # 31840 (ea.)

No data pack available.

free data

Available on Our Website: Lot Certificates, Data Packs, and MSDSs

For complete information detailing manufacturing and testing for Restek inventoried reference standards, visit our website at www.restek.com.

To view lot certificates and/or an MSDS, enter the catalog number of the product in the Search feature. For a free data pack (Adobe® PDF file), enter the catalog number and lot number of the product.

Grob Test Mix (Capillary GC)

For use with temperature programmed conditions.

<i>n</i> C10-FAME	0.42mg/mL	2,6-dimethylphenol	0.32
<i>n</i> C11-FAME	0.42	2-ethylhexanoic acid	0.38
<i>n</i> C12-FAME	0.41	nonanal	0.40
2,3-butanediol	0.53	1-octanol	0.36
dicyclohexylamine	0.31	undecane (C11)	0.29
2,6-dimethylaniline	0.32	decane (C10)	0.28

In methylene chloride, 1mL/ampul
cat. # 35000 (ea.)

No data pack available.

Amine Column Test Mix (GC)

For Stabilwax®-DB, Rtx®-5Amine, and Rtx®-35Amine columns.

1,2-butanediol	0.60mg/mL	diethanolamine	1.20
pyridine	0.60	2-nonanol	0.60
decane (C10)	0.60	2,6-dimethylaniline	0.60
diethylenetriamine	1.20	dodecane (C12)	0.60

In methylene chloride:methanol (1:1), 1mL/ampul
cat. # 35002 (ea.)

No data pack available.

Isothermal Column Test Mix (GC)

1,2-hexanediol	0.46mg/mL	1-octanol	0.36
decane (C10)	0.29	nonanal	0.40
undecane (C11)	0.29	2,6-dimethylaniline	0.32
dodecane (C12)	0.29	2,6-dichlorophenol	0.57
tridecane	0.29	naphthalene	0.32

In methylene chloride, 1mL/ampul
cat. # 35003 (ea.)

No data pack available.

HPLC Normal Phase Test Mix #1

benzene	1.00mg/mL	benzyl alcohol	3.00
benzaldehyde	0.04	4-methoxybenzyl alcohol	2.00

In hexane, 1mL/ampul
cat. # 35004 (ea.)

No data pack available.

HPLC Reversed Phase Test Mix #1

benzene	3.00mg/mL	naphthalene	0.50
uracil	0.02	biphenyl	0.06

In methanol:water (75:25), 1mL/ampul
cat. # 35005 (ea.)

No data pack available.

HPLC OQ Linearity Test Mix Kit

Linear detector responses to concentration variations are an important part of operation qualification (OQ) for HPLC instruments. Our kit of five aqueous solutions of caffeine can be used to generate simple plots of UV response versus concentration. Certificate of Analysis includes caffeine concentration, calculated variance in preparing each mixture, a linearity plot, and coefficient of determination (r^2) for the linear plot.

Caffeine at 5.0, 25.0, 125.0, 250.0, 500.0 $\mu\text{g/mL}$ in water in a five ampul kit.

1mL each of these mixtures.

cat. # 31805 (kit)

No data pack available.

also available

Individual ampuls of caffeine are available on [page 430](#).

Carbohydrate HPLC Performance Check Mix

Performance qualification (PQ) determines the precision of the HPLC system. Our performance check mix for HPLC/RI consists of five simple sugars in varied concentrations. We prepare the reference material in water, lyophilize it, and pack it dry for enhanced stability.

glucose	2.0mg	maltose	4.5
fructose	2.1	sucrose	4.0
lactose	4.4		

Dry components in 4mL screw-cap vial.

Reconstitute in 1mL acetonitrile:water (75:25) to 2.0, 2.1, 4.4, 4.5, 4.0 mg/mL, respectively.

cat. # 31809 (ea.)

No data pack available.

HPLC Performance Test Mix

The National Institute of Standards and Technology (NIST) has formulated a mixture that is highly effective for characterizing HPLC columns for efficiency, void volume, methylene selectivity, retentiveness, and activity toward chelators and organic bases. Results can be used for column classification, for column selection, for monitoring column performance over time, or for quality control. We test our material against the NIST 870 standard.

amitriptyline		quinizarin	94
hydrochloride	2800 $\mu\text{g/mL}$	toluene	1400
ethylbenzene	1700	uracil	28

In methanol, 1mL/ampul

cat. # 31699 (ea.)

OQ Response Linearity Test Standard

<i>n</i> -heptadecane (C17)	1,000 $\mu\text{g/mL}$	<i>n</i> -eicosane (C20)	100
<i>n</i> -octadecane (C18)	10	<i>n</i> -docosane (C22)	1.5
<i>n</i> -nonadecane (C19)	2	<i>n</i> -tetracosane (C24)	10,000

In isooctane, 1mL/ampul

cat. # 33906 (ea.)

NPD Performance Evaluation Standard

azobenzene	6.5 $\mu\text{g/mL}$	<i>n</i> -octadecane	100
malathion	10		

In isooctane, 1mL/ampul

cat. # 33907 (ea.)

FID Performance Evaluation Standard

<i>n</i> -tetradecane (C14)		<i>n</i> -hexadecane (C16)	
<i>n</i> -pentadecane (C15)			

0.03 w/w% each in hexane, 1mL/ampul

cat. # 33908 (ea.)

OQ/PV Headspace Standard

1,2-dichlorobenzene	<i>tert</i> -butyl disulfide
nitrobenzene	

2,000 $\mu\text{g/mL}$ each in ethanol, 1mL/ampul

cat. # 33909 (ea.)

ECD Performance Evaluation Standard

aldrin	γ -BHC (lindane)
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0.33 pg/mL each in isooctane, 1mL/ampul

cat. # 32455 (ea.)

For Restek's complete line of column test mixes, visit our website at:
www.restek.com/testmixes

**for more info**

For ultimate inertness, ask our Technical Service chemists or your Restek representative about Siltek® deactivation.

For more information on Restek performance coatings, visit us on the web at:
www.restekcoatings.com

did you know?

We have more than 2,000 pure, characterized, neat compounds in our inventory! If you do not see the EXACT mixture you need listed on any of these pages, call us.

See [page 427](#) for our Custom Reference Materials Request Form.