Reference Standards

Streamline Your MCPD and Glycidol Analysis with Our New Certified Reference Materials

RESTEK Pure Chromatography www.restek.com

Streamline Your MCPD and Glycidol Analysis with Our New Certified Reference Materials

Our new MCPD esters and glycidyl stearate certified reference materials (CRMs) help labs streamline their analysis of these food processing contaminants. By relying on our manufacturing expertise, labs can minimize errors, save time, and reduce cost compared to sourcing neat materials.

A high concentration of up to 100 µg/mL adds additional flexibility in creating working standards, and an optimized GC-MS method helps labs simplify method development.

- Compounds meet DIN EN ISO 18363-1; AOCS Cd29c-18; and DGF C-VI 18 (10) method requirements.
- Lower concentration, higher volume ampul option of PP-3-MCPD-d5 (10 µg/mL, 10 mL/ampul) for automated systems analyzing 3-MCPD and glycidol.
- Certified Reference Material (CRM) manufactured and QC-tested in our ISO-accredited labs.
- Formulated for optimal stability and usability to ensure your calibration standards are accurate.

3-MCPD Standard

3-Chloro-1,2-propanediol (96-24-2)2-Methylfuran (534-22-5)

Conc. in Solvent	CRM?	Min Shelf Life on Ship Date	Max Shelf Life on Ship Date	Shipping Conditions	Storage Temp.	qty.	cat.#
100 µg/mL, P&T Methanol, 1 mL/ampul	Yes	6 months	36 months	Ambient	10 °C or colder	ea.	31016

PP-3-MCPD-d5 Standard

- Lower concentration, higher volume ampul option available for automated systems (cat.# 31017).

3-Chloro-1,2-propanediol Dipalmitate-d5 (1185057-55-9)

Conc. in Solvent	CRM?	Min Shelf Life on Ship Date	Max Shelf Life on Ship Date	Shipping Conditions	Storage Temp.	qty.	cat.#
10 µg/mL, Toluene, 10 mL/ampul	Yes	6 months	24 months	Ambient	10 °C or colder	ea.	31017
100 µg/mL, Toluene, 1 mL/ampul	Yes	6 months	24 months	Ambient	10 °C or colder	ea.	31018

PP-3-MCPD Standard

3-Chloro-1,2-propanediol Dipalmitate (51930-97-3)

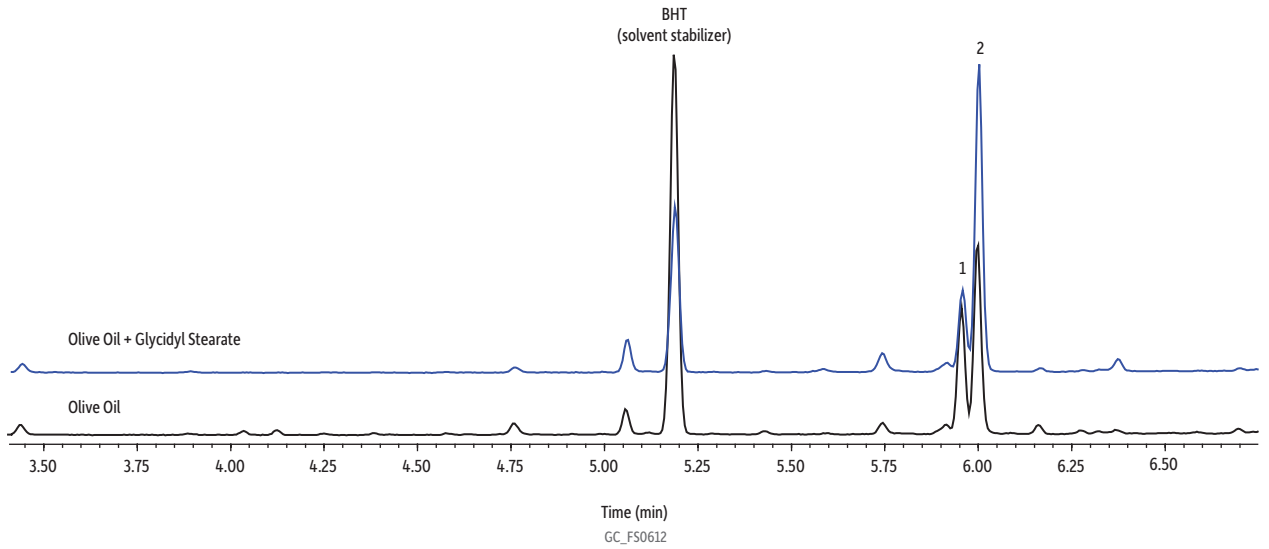
Conc. in Solvent	CRM?	Min Shelf Life on Ship Date	Max Shelf Life on Ship Date	Shipping Conditions	Storage Temp.	qty.	cat.#
100 µg/mL, Toluene, 1 mL/ampul	Yes	6 months	24 months	Ambient	10 °C or colder	ea.	31019

Glycidyl Stearate Standard

Glycidyl Stearate (7460-84-6)

Conc. in Solvent	CRM?	Min Shelf Life on Ship Date	Max Shelf Life on Ship Date	Shipping Conditions	Storage Temp.	qty.	cat.#
100 µg/mL, Toluene, 1 mL/ampul	Yes	6 months	24 months	Ambient	10 °C or colder	ea.	31020

Figure 1: Restek's Rxi-17Sil MS GC columns provide baseline separation of 3-MCPD and 3-MCPD-d5 on a 30 m column.



Peaks	t_R (min)	Conc. (µg/mL)
1. 3-MCPD-d5	5.954	4
2. 3-MCPD	5.994	4

Column	Rxi-17Sil MS GC, 30 m, 0.32 mm ID, 0.25 µm (cat.# 14124)
Standard/Sample	3-MCPD (cat.# 31016) PP-MCPD-d5 (cat.# 31018) PP-MCPD (cat.# 31019) Glycidyl stearate (cat.# 31020)
Diluent:	isooctane
Conc.:	4 µg/mL
Injection	
Inj. Vol.:	2 µL split (split ratio 10:1)
Liner:	Topaz, straight split inlet liner, 3.5 mm x 5.0 x 95, for Shimadzu 17A, 2010, 2014, and 2030 GCs, w/ quartz wool (cat.# 23319)
Inj. Temp.:	280 °C
Split Vent Flow Rate:	18.4 mL/min
Oven	
Oven Temp.:	100 °C (hold 0.5 min) to 180 °C at 12 °C/min (hold 0 min) to 320 °C at 25 °C/min (hold 4 min)
Carrier Gas	He, constant flow
Flow Rate:	1.4 mL/min
Linear Velocity:	44 cm/sec @ 280 °C
Detector	Shimadzu GCMS-QP 2020 NX
SIM Program:	147, 196, 150, 201 m/z, 0.3 ms dwell
Transfer Line Temp.:	280 °C
Analyzer Type:	Quadrupole
Source Temp.:	200 °C
Solvent Delay Time:	3 min
Tune Type:	PFTBA
Ionization Mode:	EI
Instrument	Shimadzu GC-2030
Sample Preparation	Two samples were prepared in parallel. 20 µL of PP-MCPD-d5 (100 µg/mL cat.# 31018), 20 µL of PP-MCPD (100 µg/mL cat.# 31019), and 100 mg of virgin olive oil were added to each sample. 20 µL of glycidyl stearate (100 µg/mL cat.# 31020) was added to the second sample. One-hundred microliters of MTBE was added to both samples, and the solutions were vortexed for 30 s. Two-hundred microliters of a NaOH solution (0.5 M in methanol) was added to each. Both samples were vortexed for 30 s and then allowed to sit for 5 min. Six-hundred microliters of acidified NaCl (3.4 M NaCl, 0.875% sulfuric acid) was added to quench the reaction. The solution was washed twice with 600 µL of n-hexane with the organic layer being discarded. The aqueous solutions were extracted into 600 µL of 6:4 ether:ethyl acetate solution three times. The combined organic layers were stirred over sodium sulfate for 5mins. Twenty microliters of a saturated phenyl boronic acid was added to the each and then was evaporated to dryness under a stream of nitrogen. The samples were re-extracted into 500 µL of isooctane for final analysis.
Notes	Unreacted phenyl boronic acid appears at 11.32 min. Lower concentration, higher volume ampul option of PP-3-MCPD-d5 (10 µg/mL, 10 mL/ampul) available for automated systems (cat.# 31017).

Rxi-17Sil MS GC Columns

df (Film Thickness)	Inner Diameter (ID)	Length	cat.#
0.25	0.32 mm	30 m	14124

Topaz Straight Split Inlet Liner

for Shimadzu 17A, 2010, 2014, and 2030 GCs

Internal Diameter (ID)	Outer Diameter (OD)	Length	Packing Materials	Units	Cat.#
3.5 mm	5.0 mm	95 mm	Quartz Wool	5-pk.	23319

Additional product configurations available at **www.restek.com**

www.restek.com

Lit. Cat.# FSSS4250B-UNV