

# Phthalate Standards Reference Guide



**AccuStandard<sup>®</sup>**

# Phthalates

Benzene dicarboxylic acid is equivalent to phthalic acid. Reacting phthalic acid with a variety of alcohols results in the synthesis of a group of chemicals designated as phthalic acid esters or phthalates.

Phthalates are used primarily as plasticizers. Plasticizers lower the glass transition temperature of a plastic/polymer and impart flexibility, durability and longevity to these types of products by acting as softening agents.

Due to their low-cost, versatility and effectiveness, phthalates are widely used in plastics manufacturing, in pharmaceutical coatings, in all types of packaging, in inks, in textiles and as gelling agents. They are end-use components of electronics, paints, adhesives, building materials, cleaning products and toys to name just a few.

Phthalates are now separated into two distinct classes according to the length of the precursor alcohol. The lower molecular weight (LMW) phthalates, including di-butyl, benzyl butyl and diethyl hexyl are made from alcohols with three to six carbon backbones.

Unfortunately, the LMW phthalates are easily released into the environment because there is no chemical bond between the phthalates and the plastic/polymer matrix. Leaching and atmospheric release of these compounds increases as the substrate ages and/or weathers; and has resulted in phthalates becoming a major environmental contaminant. This is important because phthalates are considered to be potential endocrine-disrupting agents (1). Human exposure to phthalates may be through direct contact, ingestion or inhalation. Concern over the adverse health effects has prompted regulatory changes and lead to a permanent ban of these plasticizers in baby-care products and toys.

Such a large-scale health concern has led to the development of analytical methods for phthalates in a variety of matrices. The majority of these methods focus on the analysis of the LMW phthalates ranging from mono/diethyl to mono/dioctyl and, in particular, dibutyl and diethyl hexyl phthalates (2). Diethyl hexyl phthalate has been the dominant plasticizer and is the largest volume phthalate in the global market. It is used as a standard for comparison for the performance of other types of plasticizers.

All of the above-mentioned phthalates are single isomer compounds which can be analyzed via straight-forward GC/MS methods yielding a single chromatographic peak for each compound.

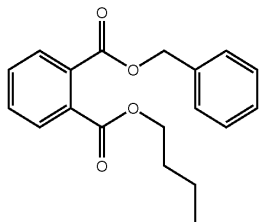
1. S. Jobling et al., *Environ. Health Perspect.*, **103** (6), 582-587 (1995)
2. H. Fromme et al., *Water Research*, **36** (6), 1429-1438 (2002)

15 New  
Phthalates

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## Phthalates

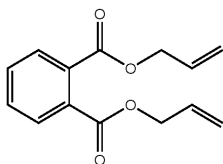
### Benzyl butyl phthalate



CAS 85-68-7 MF C<sub>19</sub>H<sub>20</sub>O<sub>4</sub> MW 312.26 PS L  
SG 1.13 g/cm<sup>3</sup> MP <25 °C BP 370-380 °C  
FP 198 °C

Matrix	Cat. No.	Unit
NEAT	ALR-082N	100 mg
100 µg/mL in MeOH	ALR-082S	1 mL
5 mg/mL in MeOH	AS-E0065	1 mL

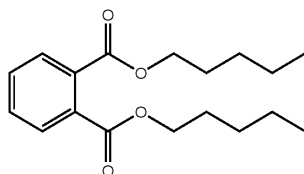
### Diallyl phthalate



CAS 131-17-9 MF C<sub>14</sub>H<sub>14</sub>O<sub>4</sub> MW 246.26 PS L  
SG 1.11 g/cm<sup>3</sup> MP 16 °C BP 165 °C FP 165 °C

Matrix	Cat. No.	Unit
NEAT	J-002	100 mg

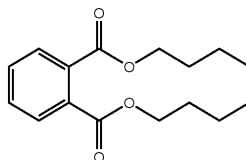
### Diamyl phthalate



CAS 131-18-0 MF C<sub>18</sub>H<sub>26</sub>O<sub>4</sub> MW 306.40 PS L  
SG 1.03 g/cm<sup>3</sup> BP 357-3607 °C FP 190 °C

Matrix	Cat. No.	Unit
NEAT	ALR-098N	100 mg
100 µg/mL in MeOH	ALR-098S	1 mL

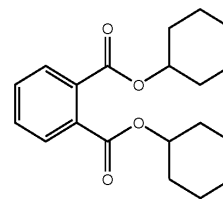
### Dibutyl phthalate



CAS 84-74-2 MF C<sub>16</sub>H<sub>22</sub>O<sub>4</sub> MW 278.34 PS L  
SG 1.05 g/cm<sup>3</sup> MP -35 °C BP 337-340 °C  
FP 177 °C

Matrix	Cat. No.	Unit
NEAT	J-003	100 mg
100 µg/mL in MeOH	APP-9-063	1 mL
1 mg/mL in MeOH	APP-9-063-10X	1 mL
5 mg/mL in MeOH	AS-E0066	1 mL

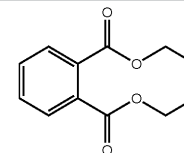
### Dicyclohexyl phthalate



CAS 84-61-7 MF C<sub>20</sub>H<sub>26</sub>O<sub>4</sub> MW 330.42 PS S  
SG 1.14 g/cm<sup>3</sup> MP 61-66 °C BP 235 °C  
FP 207 °C

Matrix	Cat. No.	Unit
NEAT	J-004	100 mg
100 µg/mL in MeOH	ALR-099S	1 mL
1 mg/mL in AcCN	AS-E0318	1 mL

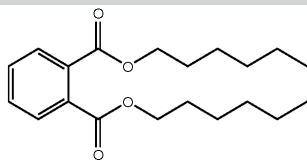
### Diethyl phthalate



CAS 84-66-2 MF C<sub>12</sub>H<sub>14</sub>O<sub>4</sub> MW 222.24 PS L  
SG 1.12 g/cm<sup>3</sup> MP -3 °C BP 172 °C FP 160 °C

Matrix	Cat. No.	Unit
NEAT	J-005	100 mg
100 µg/mL in MeOH	APP-9-081	1 mL
1 mg/mL in MeOH	APP-9-081-10X	1 mL
5 mg/mL in MeOH	AS-E0068	1 mL

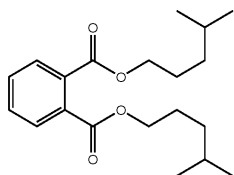
## Dihexyl phthalate



CAS 84-75-3 MF C<sub>20</sub>H<sub>30</sub>O<sub>4</sub> MW 334.45 PS L  
SG 1.01 g/cm<sup>3</sup> BP 185-187 °C FP 200 °C

Matrix	Cat. No.	Unit
NEAT	ALR-100N	100 mg
100 µg/mL in MeOH	ALR-100S	1 mL

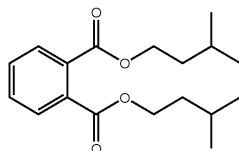
## Diisohexyl phthalate



CAS 71850-09-4 MF C<sub>20</sub>H<sub>30</sub>O<sub>4</sub> MW 334.45  
PS L SG 1.01 g/cm<sup>3</sup> MP < 25 °C BP 370 °C  
FP 180 °C

Matrix	Cat. No.	Unit
NEAT	J-007	100 mg

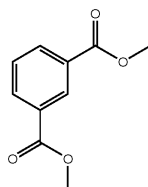
## Diisopentyl phthalate **NEW**



CAS 605-50-5 MF C<sub>18</sub>H<sub>26</sub>O<sub>4</sub> MW 306.40 PS L  
SG 1.03 g/cm<sup>3</sup> FP 167 °C

Matrix	Cat. No.	Unit
NEAT	J-127	100 mg

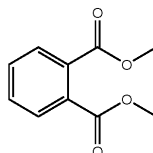
## Dimethyl isophthalate



CAS 1459-93-4 MF C<sub>10</sub>H<sub>10</sub>O<sub>4</sub> MW 194.18 PS S  
SG 1.18 g/cm<sup>3</sup> MP 64-68 °C BP 282-285 °C  
FP 148 °C

Matrix	Cat. No.	Unit
NEAT	J-009	100 mg

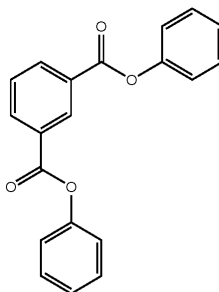
## Dimethyl phthalate



CAS 131-11-3 MF C<sub>10</sub>H<sub>10</sub>O<sub>4</sub> MW 194.18 PS L  
SG 1.19 g/cm<sup>3</sup> MP 2-6 °C BP 282-284 °C  
FP 295 °C

Matrix	Cat. No.	Unit
NEAT	J-010	100 mg
100 µg/mL in MeOH	APP-9-088	1 mL
1 mg/mL in MeOH	APP-9-088-10X	1 mL
5 mg/mL in MeOH	AS-E0069	1 mL
0.1 mg/mL in EtOAc	M-8032-IS	1 mL

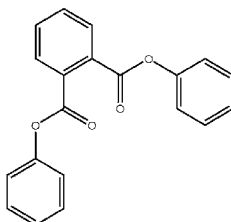
## Diphenyl isophthalate



CAS 744-45-6 MF C<sub>20</sub>H<sub>14</sub>O<sub>4</sub> MW 318.32 PS S  
SG 1.24 g/cm<sup>3</sup> MP 136-138 °C FP 256 °C

Matrix	Cat. No.	Unit
NEAT	J-012	100 mg

## Diphenyl phthalate



CAS 84-62-8 MF C<sub>20</sub>H<sub>14</sub>O<sub>4</sub> MW 318.32 PS S  
SG 1.24 g/cm<sup>3</sup> MP 74-76 °C BP 255 °C FP 256 °C

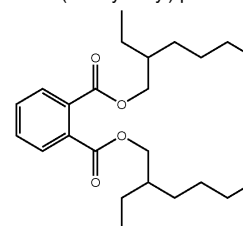
Matrix	Cat. No.	Unit
NEAT	J-013	100 mg

### Property Key

<b>CAS</b>	Chemical Abstract Service Number	<b>SG</b>	Specific Gravity (g/cm <sup>3</sup> )
<b>MF</b>	Molecular Formula	<b>MP</b>	Melting Point (°C)
<b>MW</b>	Molecular Weight	<b>BP</b>	Boiling Point (°C)
<b>PS</b>	Physical State (Solid, Liquid)	<b>FP</b>	Flash Point (°C)

## bis(2-Ethylhexyl)phthalate (DEHP)

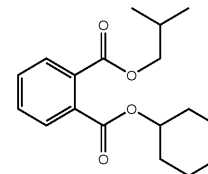
Di(2-Ethylhexyl) phthalate



CAS 117-81-7 MF C<sub>24</sub>H<sub>38</sub>O<sub>4</sub> MW 390.56 PS L  
SG 0.98 g/cm<sup>3</sup> MP - 50 °C BP 361 °C FP 204 °C

Matrix	Cat. No.	Unit
NEAT	ALR-097N	100 mg
100 µg/mL in MeOH	ALR-097S	1 mL
1 mg/mL in MeOH	APP-9-029-10X	1 mL

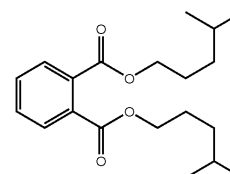
## Isobutylocyclohexyl phthalate



CAS 5334-09-8 MF C<sub>18</sub>H<sub>24</sub>O<sub>4</sub> MW 304.38 PS L  
SG 1.11 g/cm<sup>3</sup> BP 380-382 °C FP 181 °C

Matrix	Cat. No.	Unit
NEAT	J-014	100 mg

## bis(4-Methyl-2-pentyl)phthalate **NEW**



CAS 146-50-9 MF C<sub>20</sub>H<sub>30</sub>O<sub>4</sub> MW 334.45 PS L  
SG 1.01 g/cm<sup>3</sup> BP 370-380 °C FP 180 °C

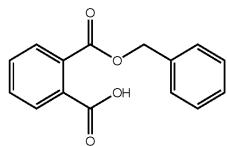
Matrix	Cat. No.	Unit
NEAT	J-109	100 mg

# Monophthalates

Mono-phthalate esters are the primary phthalate metabolites formed via hydrolysis of one ester bond. It is these compounds that are thought to be toxic agents; and are receiving interest as a possible human health issue. Studies have shown that they can produce estrogenic and immune-suppressive effects in humans.

AccuStandard offers eight mono-phthalates including the mono-ethylhexyl (mEHP) which is the metabolite of the plasticizer with the greatest yearly production and use on a global basis.

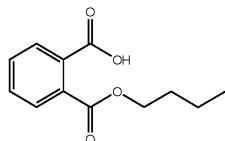
## Monobenzyl phthalate (mBzP) **NEW**



CAS 2528-16-7 MF C<sub>15</sub>H<sub>12</sub>O<sub>4</sub> MW 256.25 PS S  
SG 1.28 g/cm<sup>3</sup> MP 106 °C BP 441 °C FP 168 °C

Matrix	Cat. No.	Unit
NEAT	ALR-134N	100 mg
100 µg/mL in AcCN	ALR-134S-CN	1 mL

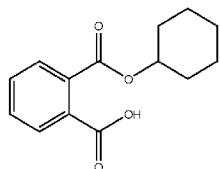
## Monobutyl phthalate (mBP)



CAS 131-70-4 MF C<sub>12</sub>H<sub>14</sub>O<sub>4</sub> MW 222.24 PS S  
SG 1.17 g/cm<sup>3</sup> MP 73 °C BP 350-354 °C FP 138 °C

Matrix	Cat. No.	Unit
NEAT	ALR-135N	100 mg
100 µg/mL in AcCN	ALR-135S-CN	1 mL

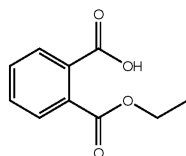
## Monocyclohexyl phthalate (mBP) **NEW**



CAS 7517-36-4 MF C<sub>14</sub>H<sub>16</sub>O<sub>4</sub> MW 248.27 PS S  
SG 1.24 g/cm<sup>3</sup> MP 89-91 °C BP 410 °C FP 154 °C

Matrix	Cat. No.	Unit
NEAT	ALR-178N	100 mg
100 µg/mL in AcCN	ALR-178S-CN	1 mL

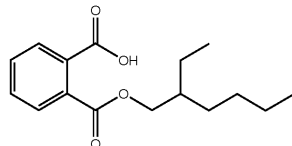
## Monoethyl phthalate (mEP)



CAS 2306-33-4 MF C<sub>10</sub>H<sub>10</sub>O<sub>4</sub> MW 194.18 PS S  
SG 1.24 g/cm<sup>3</sup> MP 101 °C BP 329 °C FP 135 °C

Matrix	Cat. No.	Unit
NEAT	ALR-137N	100 mg
100 µg/mL in AcCN	ALR-137S-CN	1 mL

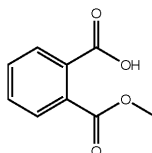
## Monoethylhexyl phthalate (mEHP)



CAS 4376-20-9 MF C<sub>16</sub>H<sub>22</sub>O<sub>4</sub> MW 278.34 PS S  
SG 1.09 g/cm<sup>3</sup> MP 142 °C BP 390-395 °C  
FP 144 °C

Matrix	Cat. No.	Unit
NEAT	ALR-138N	100 mg
100 µg/mL in AcCN	ALR-138S-CN	1 mL

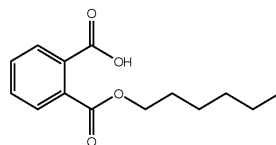
## Monomethyl phthalate



CAS 4376-18-5 MF C<sub>9</sub>H<sub>8</sub>O<sub>4</sub> MW 180.16 PS S  
SG 1.29 g/cm<sup>3</sup> MP 81-84 °C BP 315-316 °C  
FP 135 °C

Matrix	Cat. No.	Unit
NEAT	ALR-139N	100 mg
100 µg/mL in AcCN	ALR-139S-CN	1 mL

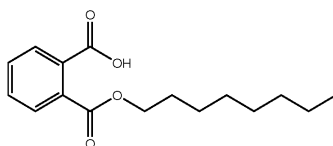
## Monoethyl phthalate **NEW**



CAS 24539-57-9 MF C<sub>14</sub>H<sub>18</sub>O<sub>4</sub> MW 250.29 PS S  
SG 1.12 g/cm<sup>3</sup> MP 133 °C BP 375-380 °C  
FP 142 °C

Matrix	Cat. No.	Unit
NEAT	ALR-175N	100 mg
100 µg/mL in AcCN	ALR-175S-CN	1 mL

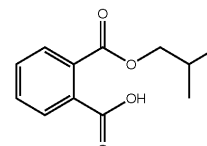
## Monooctyl phthalate **NEW**



CAS 5393-19-1 MF C<sub>18</sub>H<sub>22</sub>O<sub>4</sub> MW 278.34 PS S  
SG 1.09 g/cm<sup>3</sup> MP 149 °C BP 400 °C FP 146 °C

Matrix	Cat. No.	Unit
NEAT	ALR-141N	100 mg
100 µg/mL in AcCN	ALR-141S-CN	1 mL

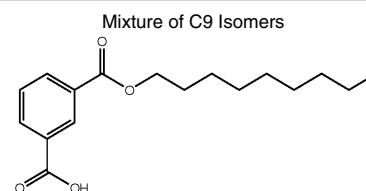
## Monoisobutyl phthalate **NEW**



CAS 30833-53-5 MF C<sub>12</sub>H<sub>14</sub>O<sub>4</sub> MW 222.24 PS S  
SG 1.17 g/cm<sup>3</sup> MP 78-80 °C BP 356-357 °C  
FP 135 °C

Matrix	Cat. No.	Unit
NEAT	ALR-176N	100 mg
100 µg/mL in AcCN	ALR-176S-CN	1 mL

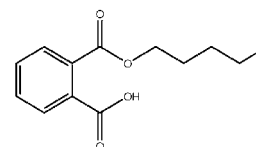
## Monoisononyl phthalate **NEW**



CAS N/A MF C<sub>17</sub>H<sub>24</sub>O<sub>4</sub> MW 292.37 PS S

Matrix	Cat. No.	Unit
NEAT	ALR-142N	100 mg
100 µg/mL in AcCN	ALR-142S-CN	1 mL

## Mono-n-pentyl phthalate **NEW**



CAS 24539-56-8 MF C<sub>13</sub>H<sub>16</sub>O<sub>4</sub> MW 236.26 PS S  
SG 1.48 g/cm<sup>3</sup> MP 125-126 °C BP 376-377 °C  
FP 140 °C

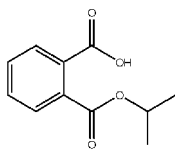
Matrix	Cat. No.	Unit
NEAT	ALR-177N	100 mg
100 µg/mL in AcCN	ALR-177S-CN	1 mL

### Property Key

<b>CAS</b>	Chemical Abstract Service Number	<b>SG</b>	Specific Gravity (g/cm <sup>3</sup> )
<b>MF</b>	Molecular Formula	<b>MP</b>	Melting Point (°C)
<b>MW</b>	Molecular Weight	<b>BP</b>	Boiling Point (°C)
<b>PS</b>	Physical State (Solid, Liquid)	<b>FP</b>	Flash Point (°C)

## Monophthalates (continued)

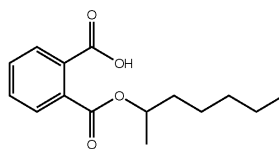
### Monoisopropyl phthalate **NEW**



CAS 35118-50-4 MF C<sub>11</sub>H<sub>12</sub>O<sub>4</sub> MW 208.21 PS S  
SG 1.20 g/cm<sup>3</sup> MP 100-104 °C BP 343-344 °C  
FP 133 °C

Matrix	Cat. No.	Unit
NEAT	ALR-179N	100 mg
100 µg/mL in AcCN	ALR-179S-CN	1 mL

### Mono-2-heptyl phthalate **NEW**



CAS N/A MF C<sub>15</sub>H<sub>20</sub>O<sub>4</sub> MW 264.32 PS S

Matrix	Cat. No.	Unit
NEAT	ALR-143N	100 mg
100 µg/mL in AcCN	ALR-143S-CN	1 mL

## Phthalates - Mixed Isomers

The high molecular weight (HMW) phthalates have more than six carbons in the backbone; and are synthesized from phthalic acid and mixtures of C9 and C10 alcohols. The two major HMW products are diisononyl phthalate (DINP) and diisodecyl phthalate (DIDP).

Attention has now turned to the analysis of these compounds as they are becoming major players in the plasticizer marketplace. However, due to the synthesis process, GC separation of DINP and DIDP results in a cluster of peaks corresponding to different isomers. Consequently, different analytical approaches based on soft ionization techniques and MS detection have been documented in the literature (1). These new approaches can provide another tool to scrutinize the amounts, environmental fate and potential health effects of these HMW plasticizers.

1. David, F., Sandra, P. and Hancock, P., *Current Trends in Mass Spectrometry*, May 2011)

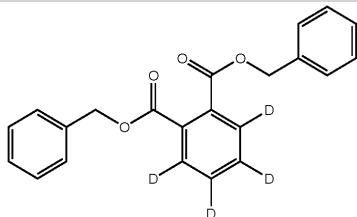
Compound	Matrix	CAS No.	Cat. No.	Unit
Alkyl benzyl phthalate (C7 to C9) (Santicizer® 261)	NEAT	68515-40-2	PLAS-PL-005N	50 mg
	1000 µg/mL in Hexane		PLAS-PL-005S	1 mL
Butyloctyl phthalate (Tech Mix)	NEAT	84-78-6	J-001	100 mg
Didecyl phthalate (Tech Mix) <b>NEW</b>	NEAT	84-77-5	J-120	100 mg
Diisodecyl phthalate	NEAT	26761-40-0	ALR-101N	100 mg
	100 µg/mL in MeOH		ALR-101S	1 mL
Diisoheptyl phthalate (Jayflex® 77)	NEAT	71888-89-6	PLAS-PL-017N	50 mg
	1000 µg/mL in Hexane		PLAS-PL-017S	1 mL
Diisooctyl phthalate (C8 Isomers)		27554-26-3	ALR-103N	100 mg
	100 µg/mL in MeOH		ALR-103S	1 mL
Di-n-octyl phthalate (Tech Mix)		117-84-0	J-011	100 mg
	100 µg/mL in MeOH		APP-9-095	1 mL
	5 mg/mL in MeOH		AS-E0067	1 mL
Dinonyl phthalate (Tech Mix) <b>NEW</b>	NEAT	84-76-4	J-105	100 mg
Hexyl-2-ethylhexyl phthalate (Tech Mix) <b>NEW</b>	NEAT	75673-16-4	J-016	100 mg
n-Octyl n-decyl phthalate (Tech Mix)	NEAT	119-07-3	J-015	100 mg
Diisononyl phthalate (C8 to C10 Isomers)	NEAT	68515-48-0	ALR-102N	100 mg
	100 µg/mL in MeOH		ALR-102S	1 mL



# Deuterated Phthalates

AccuStandard offers eleven deuterated phthalates which can be used as internal standards. To simplify the ordering process, the native and the corresponding deuterated compound are packaged as sets at a reduced price

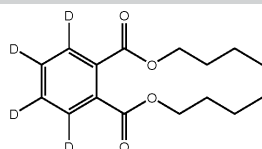
## Dibenzylphthalate-d<sub>4</sub>



CAS 1015854-62-2 MF C<sub>22</sub>H<sub>14</sub>D<sub>4</sub>O<sub>4</sub> MW 350.40  
PS S MP 40-42 °C BP 276-278 °C

Matrix	Cat. No.	Unit
NEAT	PHTH-D4-001N	5 mg
100 µg/mL in MeOH	PHTH-D4-001S	1 mL

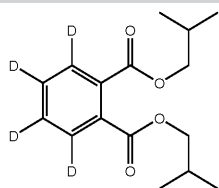
## Di-n-butyl phthalate-d<sub>4</sub>



CAS 93952-11-5 MF D<sub>4</sub>H<sub>16</sub>D<sub>4</sub>O<sub>4</sub> MW 282.37 PS L  
SG 1.07 g/cm<sup>3</sup> MP < 25 °C BP 336 °C FP 171 °C

Matrix	Cat. No.	Unit
NEAT	PHTH-D4-002N	5 mg
100 µg/mL in MeOH	PHTH-D4-002S	1 mL

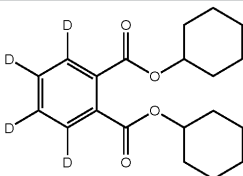
## Di-iso-butyl phthalate-3,4,5,6-d<sub>4</sub>



CAS 358730-88-8 MF C<sub>16</sub>H<sub>18</sub>D<sub>4</sub>O<sub>4</sub> MW 282.37 PS L  
BP 327 °C FP 109 °C

Matrix	Cat. No.	Unit
NEAT	PHTH-D4-003N	5 mg
100 µg/mL in MeOH	PHTH-D4-003S	1 mL

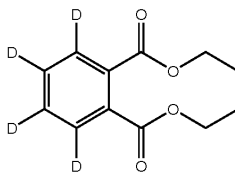
## Dicyclohexyl phthalate-3,4,5,6-d<sub>4</sub>



CAS 358731-25-6 MF C<sub>20</sub>H<sub>22</sub>D<sub>4</sub>O<sub>4</sub> MW 334.44 PS S  
SG 1.16 g/cm<sup>3</sup> FP 207 °C

Matrix	Cat. No.	Unit
NEAT	PHTH-D4-004N	5 mg
100 µg/mL in MeOH	PHTH-D4-004S	1 mL

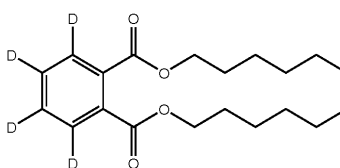
## Diethyl phthalate-3,4,5,6-d<sub>4</sub>



CAS 93952-12-6 MF C<sub>12</sub>H<sub>10</sub>D<sub>4</sub>O<sub>4</sub> MW 226.26 PS L  
SG 1.14 g/cm<sup>3</sup> MP -3 °C FP 160 °C

Matrix	Cat. No.	Unit
NEAT	PHTH-D4-005N	5 mg
100 µg/mL in MeOH	PHTH-D4-005S	1 mL

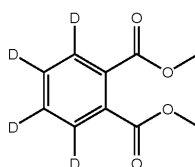
## Di-n-hexyl phthalate-3,4,5,6-d<sub>4</sub>



CAS 1015854-55-3 MF C<sub>20</sub>H<sub>26</sub>D<sub>4</sub>O<sub>4</sub> MW 338.47  
PS L SG 1.01 g/cm<sup>3</sup> BP 185-187 °C

Matrix	Cat. No.	Unit
NEAT	PHTH-D4-006N	5 mg
100 µg/mL in MeOH	PHTH-D4-006S	1 mL

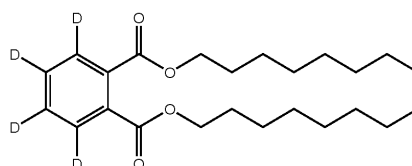
## Dimethyl phthalate-3,4,5,6-d<sub>4</sub>



CAS 93951-89-4 MF C<sub>10</sub>H<sub>8</sub>D<sub>4</sub>O<sub>4</sub> MW 198.21 PS L  
SG 1.20 g/cm<sup>3</sup> MP 2 °C BP 282 °C FP 147 °C

Matrix	Cat. No.	Unit
NEAT	PHTH-D4-007N	5 mg
100 µg/mL in MeOH	PHTH-D4-007S	1 mL

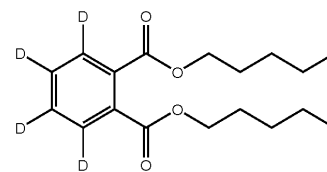
## Di-n-octyl phthalate-3,4,5,6-d<sub>4</sub>



CAS 93952-13-7 MF C<sub>24</sub>H<sub>34</sub>D<sub>4</sub>O<sub>4</sub> MW 394.58 PS L  
SG 0.96 g/cm<sup>3</sup> MP -50 °C BP 390 °C FP 205 °C

Matrix	Cat. No.	Unit
NEAT	PHTH-D4-008N	5 mg
100 µg/mL in MeOH	PHTH-D4-008S	1 mL

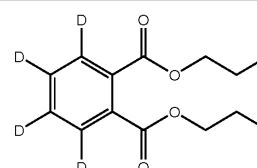
## Di-n-pentyl phthalate-3,4,5,6-d<sub>4</sub>



CAS 358730-89-9 MF C<sub>18</sub>H<sub>22</sub>D<sub>4</sub>O<sub>4</sub> MW 310.42 PS L  
BP 360 °C FP >110 °C

Matrix	Cat. No.	Unit
NEAT	PHTH-D4-009N	5 mg
100 µg/mL in MeOH	PHTH-D4-009S	1 mL

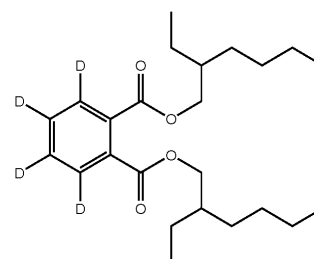
## Di-n-propyl phthalate-3,4,5,6-d<sub>4</sub>



CAS 358731-29-0 MF C<sub>14</sub>H<sub>14</sub>D<sub>4</sub>O<sub>4</sub> MW 254.31 PS L  
SG 1.08 g/cm<sup>3</sup> BP 317-318 °C FP >110 °C

Matrix	Cat. No.	Unit
NEAT	PHTH-D4-010N	5 mg
100 µg/mL in MeOH	PHTH-D4-010S	1 mL

## bis(2-Ethylhexyl) phthalate-3,4,5,6-d<sub>4</sub>



CAS 93951-87-2 MF C<sub>24</sub>H<sub>34</sub>D<sub>4</sub>O<sub>4</sub> MW 394.58 PS L  
SG 0.98 g/cm<sup>3</sup> MP -50 °C BP 384 °C FP 207 °C

Matrix	Cat. No.	Unit
NEAT	PHTH-D4-011N	5 mg
100 µg/mL in MeOH	PHTH-D4-011S	1 mL

## Set include 11 Deuterated Phthalates

Neat Set	PHTH-D4N-SET	11 x 5 mg
Solution Set	PHTH-D4S-SET	11 x 1 mL

Other compounds are available.  
contact our Technical Service if you  
require additional deuterated or other  
labeled compounds.

## Method 506 Phthalate Esters by PID

### Phthalate Esters

**M-506** 1 x 1 mL  
**M-506-PAK** **SAVE** 5 x 1 mL  
 1.0 mg/mL each in Isooctane 7 comps.

Benzyl butyl phthalate	bis(2-Ethylhexyl)adipate
Dimethyl phthalate	bis(2-Ethylhexyl)phthalate
Diethyl phthalate	Di- <i>n</i> -octyl phthalate
Di- <i>n</i> -butyl phthalate	

**M-506-QC** 1 x 1 mL  
**M-506-QC-PAK** **SAVE** 5 x 1 mL  
 At stated conc. in MeOH 7 comps.

Benzyl butyl phthalate (0.25 mg/mL)	bis(2-Ethylhexyl)adipate (1.2 mg/mL)
Dimethyl phthalate (0.1 mg/mL)	bis(2-Ethylhexyl)phthalate (0.25 mg/mL)
Diethyl phthalate (0.1 mg/mL)	Di- <i>n</i> -octyl phthalate (0.65 mg/mL)
Di- <i>n</i> -butyl phthalate (0.1 mg/mL)	

## Method 606 Phthalate Esters by GC/ECD

**M-606** 1 x 1 mL  
**M-606-PAK** **SAVE** 5 x 1 mL  
 0.2 mg/mL each in MeOH 6 comps.

Benzyl butyl phthalate	Di- <i>n</i> -butyl phthalate
Dimethyl phthalate	Di- <i>n</i> -octyl phthalate
Diethyl phthalate	bis(2-Ethylhexyl)phthalate

## Method 8060 Phthalate Esters by GC/ECD

### Phthalate Esters

**M-8060** 1 x 1 mL  
**M-8060-PAK** **SAVE** 5 x 1 mL  
 2.0 mg/mL each in Isooctane 6 comps.

Benzyl butyl phthalate	Di- <i>n</i> -butyl phthalate
Diethyl phthalate	Di- <i>n</i> -octyl phthalate
Dimethyl phthalate	bis(2-Ethylhexyl)phthalate

**M-8060-QC** 1 x 1 mL  
**M-8060-QC-PAK** **SAVE** 5 x 1 mL  
 At stated conc. in MeOH 6 comps.

Benzyl butyl phthalate (0.1 mg/mL)	Di- <i>n</i> -butyl phthalate (0.25 mg/mL)
Diethyl phthalate (0.25 mg/mL)	Di- <i>n</i> -octyl phthalate (0.5 mg/mL)
Dimethyl phthalate (0.25 mg/mL)	bis(2-Ethylhexyl)phthalate (0.5 mg/mL)

## Method 8061A Phthalate Esters by GC/ECD

### Phthalate Esters

**M-8061-R1** 1 x 1 mL  
**M-8061-R1-PAK** **SAVE** 5 x 1 mL  
 1.0 mg/mL each in Hexane 15 comps.

bis(2- <i>n</i> -Butoxyethyl)phthalate	Dimethyl phthalate
Butyl benzyl phthalate	Dinonyl phthalate
Diamyl phthalate	Di- <i>n</i> -octyl phthalate
Di- <i>n</i> -butyl phthalate	bis(2-Ethoxyethyl)phthalate
Dicyclohexyl phthalate	bis(2-Ethylhexyl)phthalate
Diethyl phthalate	bis(2-Methoxyethyl)phthalate
Dihexyl phthalate	bis(4-Methyl-2-pentyl)phthalate
Diisobutyl phthalate	

**M-8061A** 1 x 1 mL  
**M-8061A-PAK** **SAVE** 5 x 1 mL  
 1.0 mg/mL each in Hexane 6 comps.

Butyl benzyl phthalate	Diethyl phthalate
bis(2-Ethylhexyl)phthalate	Dimethyl phthalate
Di- <i>n</i> -butyl phthalate	Di- <i>n</i> -octyl phthalate

### Matrix Spike Solution

**M-8061A-MS** 1 x 1 mL  
**M-8061A-MS-PAK** **SAVE** 5 x 1 mL  
 2.0 mg/mL each in Acetone 2 comps.

Butyl benzyl phthalate	bis(2-Ethylhexyl)phthalate
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### Internal Standard

**M-8061-IS** 1 x 1 mL  
**M-8061-IS-PAK** **SAVE** 5 x 1 mL  
 5.0 mg/mL in Hexane

Benzyl benzoate

### Surrogate Standards

**M-8061-SS** 1 x 1 mL  
**M-8061-SS-PAK** **SAVE** 5 x 1 mL  
 50 µg/mL each in Acetone

**M-8061-SS-10X** 1 x 1 mL  
**M-8061-SS-10X-PAK** **SAVE** 5 x 1 mL  
 500 µg/mL each in Acetone 3 comps.

Dibenzyl phthalate	Diphenyl phthalate
Diphenyl isophthalate	

## Phthalates Solution Set

Set of 17 Phthalate Solutions  
Each at 100 µg/mL Concentration

ALR-PHT-SET 17 x 1 mL  
S in MeOH, S-CN in AcCN

Compound	CAS No.	Cat. No.	Unit
Benzyl butyl phthalate	85-68-7	ALR-082S	1 mL
Diamyl phthalate	131-18-0	ALR-098S	1 mL
Dicyclohexyl phthalate	84-61-7	ALR-099S	1 mL
Di(2-ethyl hexyl) phthalate (DEHP)	117-81-7	ALR-097S	1 mL
Diethyl phthalate	84-66-2	ALR-110S	1 mL
Di-hexyl phthalate	84-75-3	ALR-100S	1 mL
Diisodecyl phthalate	26761-40-0	ALR-101S	1 mL
Diisononyl phthalate	68515-48-0	ALR-102S	1 mL
Diisooctyl phthalate	27554-26-3	ALR-103S	1 mL
Dimethyl phthalate (DMP)	131-11-3	ALR-111S	1 mL
Di-n-butyl phthalate (DBP)	84-74-2	ALR-104S	1 mL
Di-n-octyl phthalate	117-84-0	ALR-105S	1 mL
Monobenzyl phthalate (mBzP)	2528-16-7	ALR-134S-CN	1 mL
Monobutyl phthalate (mBP)	131-70-4	ALR-135S-CN	1 mL
Monoethyl phthalate (mEP)	2306-33-4	ALR-137S-CN	1 mL
Monoethylhexyl phthalate (mEHP)	4376-20-9	ALR-138S-CN	1 mL
Monomethyl phthalate	4376-18-5	ALR-139S-CN	1 mL

Although not strictly allergens, phthalates in cosmetics are toxic and suspected carcinogens.

## Phthalate Esters Kit

PS-840C-R1-SET 15 vials  
Neats at 1 mL each.

### Calibration Mixture

PS-84C-1ML 1 mL vial

Neat at the stated weight %

Neat at stated weight %

Dimethyl phthalate	16.7%
Diethyl phthalate	16.7%
Di-n-propyl phthalate	33.3%
Di-n-butyl phthalate	33.3%

- (01) Dimethyl phthalate
- (02) Diethyl phthalate
- (03) Di-n-propyl phthalate
- (04) Di-iso-propyl phthalate
- (05) Di-n-butyl phthalate
- (06) Di-iso-butyl phthalate
- (07) Dipentyl phthalate
- (08) Dihexyl phthalate
- (09) Diheptyl phthalate
- (10) Dioctyl phthalate
- (11) Dinonyl phthalate
- (12) Didecyl phthalate
- (13) Diundecyl phthalate
- (14) Didodecyl phthalate

(15) Phthalate Mixture PS-84C

Neat at stated weight %

Dimethyl phthalate	16.7%
Diethyl phthalate	16.7%
Di-n-propyl phthalate	33.3%
Di-n-butyl phthalate	33.3%

## Miscellaneous Phthalate Mixes

### Appendix IX Phthalate Mix

#### APP-9-PHTH-MIX

1000 µg/mL each in Cyclohexane



1 x 1 mL  
6 comps.

bis(2-Ethylhexyl)phthalate	Diisodecyl phthalate
Dibutyl phthalate	Diisononyl phthalate
Di-n-octyl phthalate	Benzyl butyl phthalate

### Phthalate Mix

#### ASM-146

1.0 mg/mL each in MeOH

1 x 1 mL  
6 comps.

Benzyl butyl phthalate	Di-n-butyl phthalate
Dimethyl phthalate	Di-n-octyl phthalate
Diethyl phthalate	bis(2-Ethylhexyl)phthalate

### Phthalate Esters Mix

#### M-PHE

#### M-PHE-PAK

At stated conc. (µg/mL) in Acetone

1 x 1 mL  
**SAVE** 5 x 1 mL  
6 comps.

Benzyl butyl phthalate	10	Dimethyl phthalate	25
bis(2-Ethylhexyl)phthalate	50	Di-n-butyl phthalate	25
Diethyl phthalate	25	Di-n-octyl phthalate	50



# AccuStandard®

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125 Market Street New Haven, CT 06513 USA  
AccuStandard.com 203-786-5290 Fax 203-786-5287