

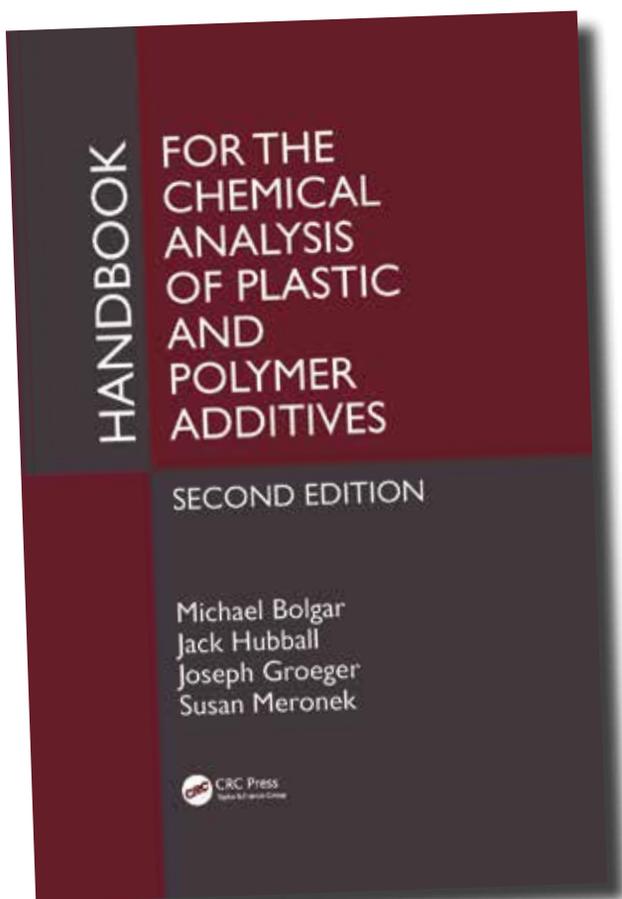
# Plastic Additive Standards Guide



AccuStandard®

# The perfect companion for your analysis!

This reference book contains the compounds in this catalog, with important reference data to aid in testing and compliance.



Cat. No: PLAS-CRC-BOOK2

**Each Compound has:**

#### **Chemical Information**

- Structure
- CAS Number (where applicable)
- RTECS Number (where available)
- Formula
- Molecular Weight
- IUPAC Name, other common names and some popular brand names

#### **Physical Properties**

- Appearance
- Melting and Boiling Points
- Stability
- Solubilities in several common solvents

#### **Other Important Information**

- Application
- Regulatory
- Environmental Impact
- Point of Release
- Toxicological Data

#### **Analytical Data**

- Mass Spectrum with key ions tabulated
- Chromatogram with conditions

As well as information to help with real world examples, tips for analysis in challenging matrices and much more!

## **Handbook for the Chemical Analysis of Plastic and Polymer Additives, 2nd Ed.**

The Second Edition of this handbook provides the necessary tools for chemists to obtain a more complete listing of additives present in a particular polymeric matrix. This edition features:

- Updated material to include the most recent additives available
- Contains actual analytical data for each chemical along with the description and methods used for obtaining the results
- Highlights the toxicological and environmental impact of each product
- Summarizes regulatory and health information in a convenient "one-step" format

With 50 additional compounds, this 2nd edition nearly doubles the number of additives in several categories including processing aids, anti-static compounds, mold release products and blowing agents. It includes a listing that can be cross-referenced by trade name, chemical name, CAS number and even key mass unit ions from the GC/MS run. Also included are new case studies related to "real-world" issues.

# Plastic Additives

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AccuStandard has been serving the analytical community with high quality Chemical Reference Standards for 30 years.

Today, we are the largest independent manufacturer specializing exclusively in analytical reference standards in the world. We achieved this distinction by concentrating on two goals: to have the widest range of organic and inorganic analytical standards and to have a knowledgeable and responsive customer and technical service department.

We also provide custom formulations and synthesis of new or rare compounds.

## Introduction

Plastics and other polymeric materials have become indispensable in our everyday lives. Although they offer many benefits, hazardous chemicals may be present in these materials. These hazardous materials can be introduced either intentionally as additives, or unintentionally as pollutants.

AccuStandard has collected or synthesized many of these polymer adjuncts and is pleased to present them in this newest unique catalog as certified reference standards for monitoring these chemicals.

The occurrence, toxicity and analytical methods used in the detection and monitoring (for both presence and levels) of these chemical classes and individual compounds within these classes are more thoroughly described in the book the "Handbook for the Chemical Analysis of Plastic and Polymer Additives" (2nd edition published in 2016 by CRC Press). Both manufacturers and distributors of plastic and related polymeric materials will find the CRC book to be an authoritative source of information that compliments this catalog.

This catalog contains a comprehensive list of Certified Reference Materials for Additive Analysis available for analysis. Calibrating with certified standards adds an additional layer of confidence in the analysis that can aid in meeting regulations, protecting in challenges from governmental regulations and providing protection from legal issues that could be raised by consumers of your products.

Below find a list of regulations that require analysis of many of these additives:

- EU Directive 2002/96/EC WEEE (Waste Electrical and Electronic Equipment) that establishes limits for the content of a product that must be recyclable or reusable.
- EU Directive 2003/11/EC ROHS (Restriction Of the use of certain Hazardous Substances) restricting the use of six toxins from most electronic and electrical equipment.
- EU Directive 90/128/EC for monomers and additives for plastics intended for food contact.
- EU Directive 2002/72/EC relating to plastic materials and articles intended to come in contact with foodstuffs.
- EU Directive 2002/61/EC Aryl Amine Breakdown Products in Azo Dyes
- EU Directive 67/548/EEC Carcinogenic and Regulated Dyes
- FDA and The United States Code of Federal Regulations (CFR) – 21 CFR Parts 175-178 that regulate adhesives, components of coatings, paper and paperboard components, polymers and adjuvants and production aids.
- United States Environmental Protection Agency (USEPA) – Methods 506, 606 and 8061 regulating Phthalates and Adipates.

Both the catalog and book are organized into classes by additive type. Manufacturers can easily find Standards that match their particular application and product formulation for the following product categories:

- Medical Devices
- Pharmaceutical Packaging
- Wire and Cable
- Food Packaging
- Toys

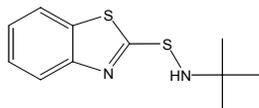


## Accelerants

Accelerators are additives that, as the name implies, accelerate or speed up the chemical reaction or the curing of the polymers into the final plastic. Accelerators are also sometimes called promoters. In rubbers, accelerators are used to increase the crosslinking reaction with sulfur in the vulcanization of rubber.

### Accelerator BBTS

N-(1,1-Dimethylethyl)-2-benzothiazolesulfenamide

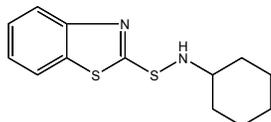


CAS 95-31-8 MF C<sub>11</sub>H<sub>14</sub>N<sub>2</sub>S<sub>2</sub> MW 238.38

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AC-003S	1 mL
NEAT	PLAS-AC-003N	50 mg

### Accelerator CBTS

N-Cyclohexyl-2-benzothiazole sulfenamide

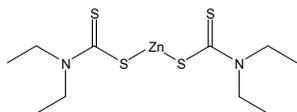


CAS 95-33-0 MF C<sub>13</sub>H<sub>16</sub>N<sub>2</sub>S<sub>2</sub> MW 264.41

Matrix	Cat. No.	Unit
NEAT	PLAS-AC-007N	50 mg

### Accelerator EZ & EZ-SP

Zinc diethyldithiocarbamate

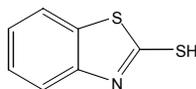


CAS 14324-55-1 MF C<sub>10</sub>H<sub>20</sub>N<sub>2</sub>S<sub>4</sub> • Zn MW 361.93

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane:Acetone 90:10	PLAS-AC-006S	1 mL
NEAT	PLAS-AC-006N	50 mg

### Accelerator MBT, MBT/MG

2-Mercaptobenzothiazole

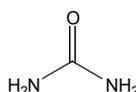


CAS 149-30-4 MF C<sub>7</sub>H<sub>5</sub>S<sub>2</sub>N MW 167.25

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane:Acetone 90:10	PLAS-AC-001S	1 mL
NEAT	PLAS-AC-001N	50 mg

### Activator OT Urea

Urea

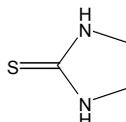


CAS 57-13-6 MF CH<sub>4</sub>N<sub>2</sub>O MW 60.07

Matrix	Cat. No.	Unit
1000 µg/mL in Acetone	PLAS-AC-005S-A	1 mL
NEAT	PLAS-AC-005N	50 mg

### Akroform ETU-22 PM

Ethylene thiourea

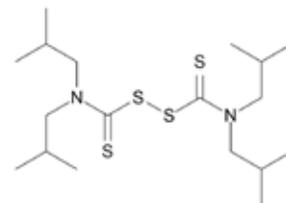


CAS 96-45-7 MF C<sub>3</sub>H<sub>6</sub>N<sub>2</sub>S MW 102.11

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane:Acetone 70:30	PLAS-AC-002S	1 mL
NEAT	PLAS-AC-002N	50 mg

### Cure-Rite® IBT

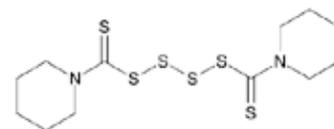
Tetraisobutylthiuram disulfide



CAS 3064-73-1 MF C<sub>18</sub>H<sub>36</sub>N<sub>2</sub>S<sub>4</sub> MW 408.76

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AC-004S	1 mL
NEAT	PLAS-AC-004N	50 mg

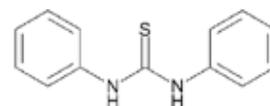
### Dipentamethylenethiuram tetrasulfide



CAS 120-54-7 MF C<sub>12</sub>H<sub>20</sub>N<sub>2</sub>S<sub>6</sub> MW 384.69

Matrix	Cat. No.	Unit
NEAT	PLAS-AC-009N	50 mg

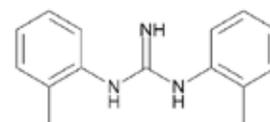
### 1,3-Diphenyl-2-thiourea



CAS 102-08-9 MF C<sub>13</sub>H<sub>12</sub>N<sub>2</sub>S MW 228.31

Matrix	Cat. No.	Unit
NEAT	PLAS-AC-008N	50 mg

### 1,3-Di-o-tolylguanidine



CAS 97-39-2 MF C<sub>15</sub>H<sub>17</sub>N<sub>3</sub> MW 239.32

Matrix	Cat. No.	Unit
NEAT	PLAS-AC-010N	50 mg

#### Property Key

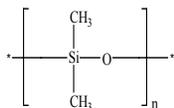
CAS	Chemical Abstract Service Number	MF	Molecular Formula
		MW	Molecular Weight

## Antifoams

Antifoaming agents (sometimes called defoamers) act to stop foaming during processing and typically work by reducing surface tension breaking up the foam. Foaming can cause both processing problems as well as weak spots in the final product.

### SF100

Dimethyl silicone fluid



CAS 9016-00-6 MF (C<sub>2</sub>H<sub>6</sub>OSi)<sub>n</sub> MW N/A

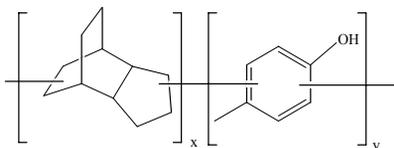
Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AF-001S	1 mL
NEAT	PLAS-AF-001N	50 mg

## Antidegradants

Antidegradants include a broad category of additives used in compounding to slow deterioration that can occur due to oxidation, ozone, light or any combination of these conditions. It is basically a generic term for additives that include antioxidants, antiozonants and UV Stabilizers.

### Akrochem Antiox 12

Butylated reaction product of p-cresol and dicyclopentadiene

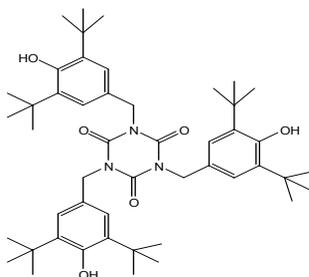


CAS 68610-51-5 MF [C<sub>11</sub>H<sub>20</sub>OH • C<sub>12</sub>H<sub>23</sub>OH]<sub>n</sub>C<sub>4</sub>H<sub>9</sub> MW 600-800

Matrix	Cat. No.	Unit
1000 µg/mL in HexaneAcetone 80:20	PLAS-AD-001S	1 mL
NEAT	PLAS-AD-001N	50 mg

### Ethanox® 314

1,3,5-tris(3,5-Di-tert-butyl-4-hydroxybenzyl)-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione

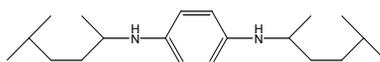


CAS 27676-62-6 MF C<sub>48</sub>H<sub>69</sub>N<sub>3</sub>O<sub>6</sub> MW 784.08

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-084S	1 mL
NEAT	PLAS-AX-084N	50 mg

### Santoflex® 77PD

N,N'-bis(1,4-Dimethylpentyl)-p-phenylenediamine



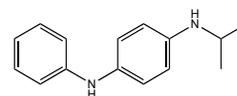
Flexsys

CAS 3081-14-9 MF C<sub>20</sub>H<sub>36</sub>N<sub>2</sub> MW 304.51

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AD-002S	1 mL
NEAT	PLAS-AD-002N	50 mg

### Santoflex® IPPD

N-Isopropyl-N'-phenyl-p-phenylenediamine

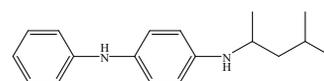


CAS 101-72-4 MF C<sub>15</sub>H<sub>18</sub>N<sub>2</sub> MW 226.32

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane:Acetone 80:20	PLAS-AD-003S	1 mL
NEAT	PLAS-AD-003N	50 mg

### Santoflex® 6PPD

N-(1,3-Dimethylbutyl)-N'-phenyl-p-phenylenediamine



CAS 793-24-8 MF C<sub>18</sub>H<sub>24</sub>N<sub>2</sub> MW 268.40

Matrix	Cat. No.	Unit
NEAT	PLAS-AD-004N	50 mg

#### Property Key

CAS	Chemical Abstract Service Number	MF	Molecular Formula
		MW	Molecular Weight

## Antioxidants

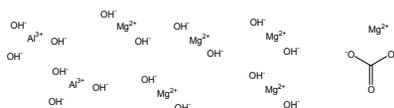
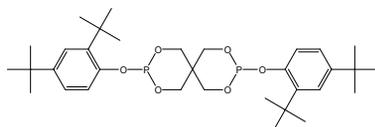
Oxidation during compounding or processing can cause problems such as: loss of strength, breakdown or discoloration. Oxidation can also occur in the final product causing discoloration, scratching and loss of strength, flexibility, stiffness or gloss.

Antioxidants are used in most hydrocarbon polymers including polyethylene, polypropylene, polystyrene and ABS.

Antioxidants work to slow down the oxidation cycle, usually by scavenging free radicals. Some types of antioxidants are: organophosphites, sterically hindered phenols, amines and thioesters.

### Alkanox® P27

bis(2,4-di-tert-Butylphenyl)pentaerythritol diphosphate and magnesium aluminum hydroxy carbonate hydrate



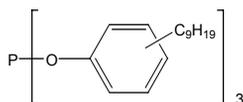
Chemtura Corporation

CAS 26741-53-7 / 11097-59-9 MF C<sub>33</sub>H<sub>50</sub>O<sub>6</sub>P<sub>2</sub> • H<sub>16</sub>Al<sub>2</sub>Mg<sub>6</sub>O<sub>19</sub> MW N/A

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-032N	50 mg

### Alkanox® TNPP

tris(Nonylphenyl) phosphite with up to 1% triisopropanol amine

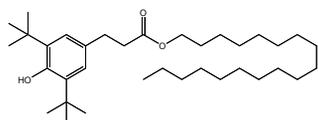


CAS 26523-78-4 MF C<sub>45</sub>H<sub>69</sub>O<sub>3</sub>P MW 689

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-077S	1 mL
NEAT	PLAS-AX-077N	50 mg

### Anox® PP18

Octadecyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propanoate

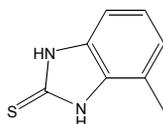


CAS 2082-79-3 MF C<sub>35</sub>H<sub>62</sub>O<sub>3</sub> MW 530.86

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-114N	50 mg

### Antioxidant 60

Methyl-2-mercaptobenzimidazole

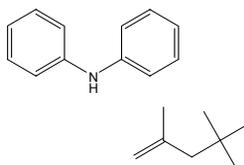


CAS 53988-10-6 MF C<sub>8</sub>H<sub>8</sub>N<sub>2</sub>S MW 164.23

Matrix	Cat. No.	Unit
1000 µg/mL in Methanol	PLAS-AX-019S-M	1 mL
NEAT	PLAS-AX-019N	50 mg

### Antioxidant S

Benzenamine, N-phenyl, reaction products with 2,4,4-trimethylpentene

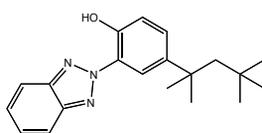


CAS 68411-46-1 MF C<sub>12</sub>H<sub>11</sub>N • C<sub>8</sub>H<sub>16</sub> MW 393.66

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-057S	1 mL
NEAT	PLAS-AX-057N	50 mg

### 2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol

2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole

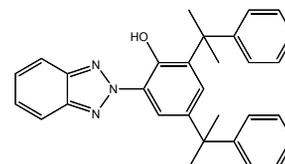


CAS 3147-75-9 MF C<sub>20</sub>H<sub>25</sub>N<sub>3</sub>O MW 323.43

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-094N	50 mg

### BLS® 234

2-(2-Hydroxy-3,5-di-(1,1-dimethylbenzyl))-benzotriazole

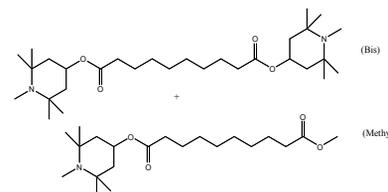


CAS 70321-86-7 MF C<sub>30</sub>H<sub>29</sub>N<sub>3</sub>O MW 447.57

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-088N	50 mg

### BLS® 292

bis(1,2,2,6,6-pentamethyl-4-piperidyl)sebacate and Methyl(1,2,2,6,6-pentamethyl-4-piperidyl)sebacate

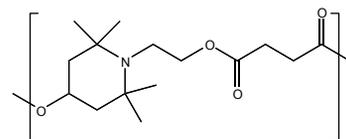


CAS 41556-26-7/8219-37-7 MF C<sub>30</sub>H<sub>56</sub>N<sub>2</sub>O<sub>4</sub>/C<sub>21</sub>H<sub>39</sub>NO<sub>4</sub> MW 508.78/369.54

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-089N	50 mg

### BLS® 1622

Dimethyl sebacate polymer with 4-hydroxy-2,2,6,6-tetramethyl-1-piperidine ethanol



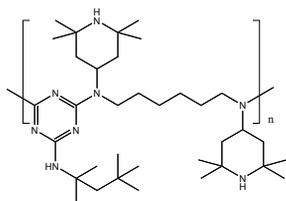
CAS 65447-77-0 MF (C<sub>15</sub>H<sub>25</sub>NO<sub>4</sub>)<sub>n</sub> MW (283.35)<sub>n</sub>

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-096N	50 mg

## Antioxidants (continued)

### BLS® 1944

Poly[[6-[(1,1,3,3-tetramethylbutyl)aminol]-s-triazine-2,4-diy]][(2,2,6,6-tetramethyl-4-piperidyl)imino]hexamethylene[(2,2,6,6-tetramethyl-4-piperidyl)imino]

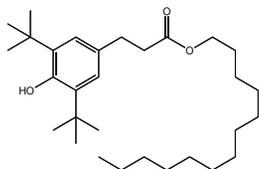


CAS 70624-18-9 MF C<sub>35</sub>H<sub>66</sub>N<sub>8</sub> MW (599.09)<sub>n</sub>

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-090N	50 mg

### BNX 1077

Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-, isotridecyl ester

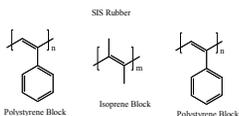
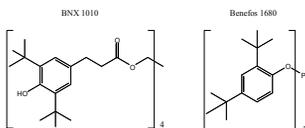


CAS 847488-62-4 MF C<sub>30</sub>H<sub>52</sub>O<sub>3</sub> MW 460.73

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-087N	50 mg

### BNX 1225TPR

Blend of BNX®1010, Benefos®1680 and SIS Block Copolymer

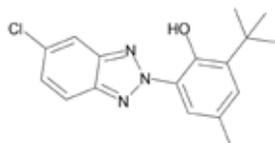


CAS 6683-19-8/31570-04-4/25038-32-8 MF N/A MW N/A

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-091N	50 mg

### 2-tert-Butyl-6-(5-chloro-2H-benzotriazol-2-yl)-4-methylphenol

2-(2-Hydroxy-3-tert-butyl-5-methylphenyl)-5-chloro-benzotriazole

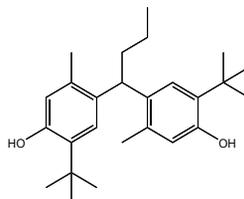


CAS 3896-11-5 MF C<sub>17</sub>H<sub>18</sub>ClN<sub>3</sub>O MW 315.80

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-093N	50 mg

### 4,4'-Butylidenebis(6-tert-butyl-m-cresol)

6,6'-di-tert-Butyl-4,4'-butylidene di-m-cresol

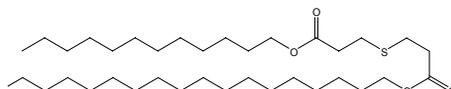


CAS 85-60-9 MF C<sub>26</sub>H<sub>38</sub>O<sub>2</sub> MW 382.58

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-105N	50 mg

### Cyanox® 1212

Lauryl stearyl thiopropionate

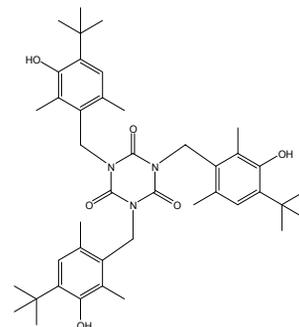


CAS 13103-52-1 MF C<sub>36</sub>H<sub>70</sub>O<sub>4</sub>S MW 599.00

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-047S	1 mL
NEAT	PLAS-AX-047N	50 mg

### Cyanox® 1790

1,3,5-tris(4-tert-Butyl-3-hydroxy-2,6-dimethylbenzyl)-1,3,5-triazine-2,4,6-(1H, 3H,5H)-trione

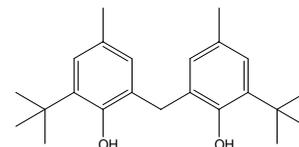


CAS 40601-76-1 MF C<sub>42</sub>H<sub>57</sub>N<sub>3</sub>O<sub>6</sub> MW 699.92

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-005S	1 mL
NEAT	PLAS-AX-005N	50 mg

### Cyanox® 2246

2,2'-Methylene-bis(4-methyl-6-tert-butylphenol)

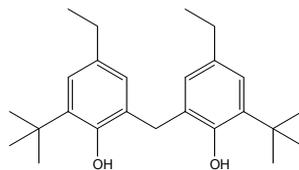


CAS 119-47-1 MF C<sub>23</sub>H<sub>32</sub>O<sub>2</sub> MW 340.55

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-013S	1 mL
NEAT	PLAS-AX-013N	50 mg

### Cyanox® 425

2,2'-Methylene-bis(4-ethyl-6-tert-butylphenol)



CAS 88-24-4 MF C<sub>25</sub>H<sub>36</sub>O<sub>2</sub> MW 368.55

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-012S	1 mL
NEAT	PLAS-AX-012N	50 mg

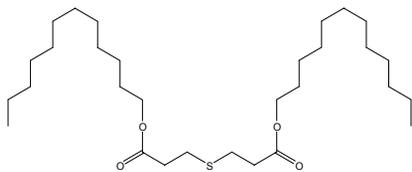
#### Property Key

CAS Chemical Abstract Service Number MF Molecular Formula MW Molecular Weight

## Antioxidants (continued)

### Cyanox® LTDP

Dilauryl thiodipropionate

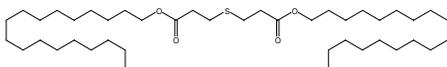


CAS 123-28-4 MF C<sub>30</sub>H<sub>58</sub>O<sub>4</sub>S MW 514.85

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-041S	1 mL
NEAT	PLAS-AX-041N	50 mg

### Cyanox® STDP

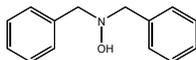
Distearyl thiodipropionate



CAS 693-36-7 MF C<sub>42</sub>H<sub>82</sub>O<sub>4</sub>S MW 683.3

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-044S	1 mL
NEAT	PLAS-AX-044N	50 mg

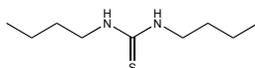
### Dibenzylhydroxylamine



CAS 621-07-8 MF C<sub>14</sub>H<sub>15</sub>NO MW 213.28

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-092N	50 mg

### N,N'-Dibutylthiourea

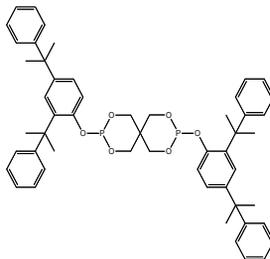


CAS 109-46-6 MF C<sub>9</sub>H<sub>20</sub>N<sub>2</sub>S MW 188.33

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-102N	50 mg

### 3,9-bis(2,4-Dicumylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5,5]undecane

3,9-bis[2,4-bis(2-Phenylpropan-2-yl)phenoxy]-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5,5]undecane

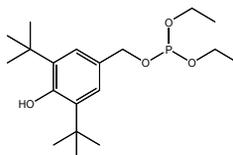


CAS 154862-43-8 MF C<sub>53</sub>H<sub>58</sub>O<sub>6</sub>P<sub>2</sub> MW 852.97

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-111N	50 mg

### Diethyl 3,5-di-tert-butyl-4-hydroxybenzylphosphonate

2,6-di-tert-Butyl-4-(diethoxyphosphorylmethyl)phenol

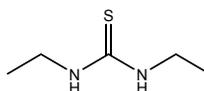


CAS 976-56-7 MF C<sub>19</sub>H<sub>33</sub>O<sub>4</sub>P MW 356.44

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-110N	50 mg

### N,N'-Diethylthiourea

1,3-Diethyl-2-thiourea

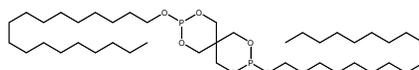


CAS 105-55-5 MF C<sub>5</sub>H<sub>12</sub>N<sub>2</sub>S MW 132.23

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-103N	50 mg

### 3,9-bis(Octadecyloxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5,5]undecane

Distearyl pentaerythritol bisphosphite

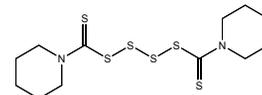


CAS 3806-34-6 MF C<sub>41</sub>H<sub>82</sub>O<sub>6</sub>P<sub>2</sub> MW 733.03

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-108N	50 mg

### Dipentamethylenethiuram tetrasulfide

Piperidine, 1,1'-(tetrathiodicarbonothioyl)-bis-

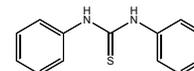


CAS 120-54-7 MF C<sub>12</sub>H<sub>20</sub>N<sub>2</sub>S<sub>6</sub> MW 384.70

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-104N	50 mg

### 1,3-Diphenyl-2-thiourea

1,3-Diphenylthiourea

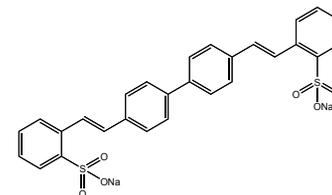


CAS 102-08-9 MF C<sub>13</sub>H<sub>12</sub>N<sub>2</sub>S MW 228.31

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-100N	50 mg

### Distyryl biphenyl

Disodium 4,4'-bis(2-sulfonatostyryl)biphenyl

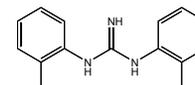


CAS 27344-41-8 MF C<sub>28</sub>H<sub>20</sub>Na<sub>2</sub>O<sub>6</sub>S<sub>2</sub> MW 562.57

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-099N	50 mg

### 1,3-Di-o-tolylguanidine

1,2-bis(2-Methylphenyl)guanidine

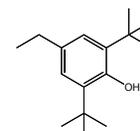


CAS 97-39-2 MF C<sub>15</sub>H<sub>17</sub>N<sub>3</sub> MW 239.32

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-101N	50 mg

### 2,6-Di-tert-butyl-4-ethylphenol

2,6-bis(1,1-Dimethylethyl)-4-ethylphenol



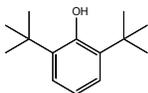
CAS 4130-42-1 MF C<sub>16</sub>H<sub>26</sub>O MW 234.38

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-107N	50 mg

## Antioxidants (continued)

### 2,6-Di-tert-butylphenol

2,6-Di-tert-butylphenol

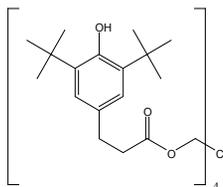


CAS 128-39-2 MF C<sub>14</sub>H<sub>22</sub>O MW 206.32

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-112N	50 mg

### Ethanox<sup>®</sup> 310

Pentaerythritol tetrakis (3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate)

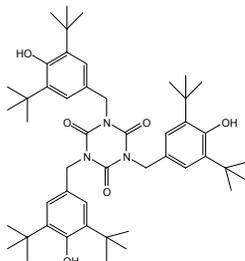


CAS 6683-19-8 MF C<sub>73</sub>H<sub>108</sub>O<sub>12</sub> MW 1177.65

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-086S	1 mL
NEAT	PLAS-AX-086N	50 mg

### Ethanox<sup>®</sup> 314

tris(3,5-Di-tert-butyl-4-hydroxybenzyl)isocyanurate

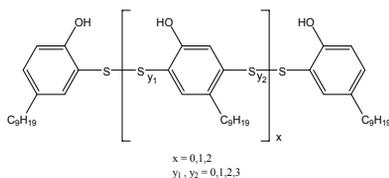


CAS 27676-62-6 MF C<sub>48</sub>H<sub>69</sub>N<sub>3</sub>O<sub>6</sub> MW 784.08

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-084S	1 mL
NEAT	PLAS-AX-084N	50 mg

### Ethanox<sup>®</sup> 323

Nonylphenol disulfide oligomer

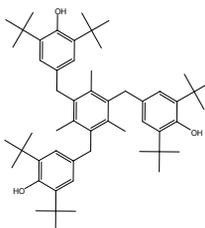


CAS MF MW

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-082S	1 mL
NEAT	PLAS-AX-082N	50 mg

### Ethanox<sup>®</sup> 330

1,3,5-Trimethyl-2,4,6-tris(3,5-di-tert-butyl-4-hydroxybenzyl) benzene

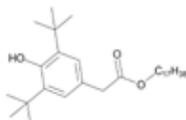


CAS 1709-70-2 MF C<sub>54</sub>H<sub>78</sub>O<sub>3</sub> MW 775.32

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-021S	1 mL
NEAT	PLAS-AX-021N	50 mg

### Ethanox<sup>®</sup> 376

Octadecyl 3,5-di-tert-butyl-4-hydroxyhydrocinnamate

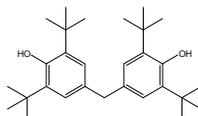


CAS 2082-79-3 MF C<sub>35</sub>H<sub>62</sub>O<sub>3</sub> MW 530.87

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-054S	1 mL
NEAT	PLAS-AX-054N	50 mg

### Ethanox<sup>®</sup> 702

4,4'-Methylene bis(2,6-di-tert-butylphenol)

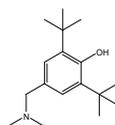


CAS 118-82-1 MF C<sub>29</sub>H<sub>44</sub>O<sub>2</sub> MW 424.66

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-025S	1 mL
NEAT	PLAS-AX-025N	50 mg

### Ethanox<sup>®</sup> 703

2,6-Di-tert-butyl-N,N-dimethylamino-p-cresol

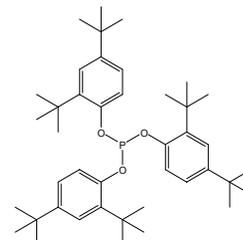


CAS 88-27-7 MF C<sub>17</sub>H<sub>29</sub>NO MW 263.42

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-085S	1 mL
NEAT	PLAS-AX-085N	50 mg

### Ethaphos<sup>®</sup> 368

Tris(2,4-di-tert-butylphenyl) phosphite

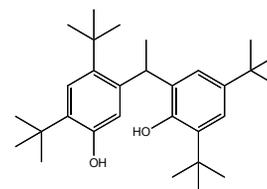


CAS 31570-04-4 MF C<sub>42</sub>H<sub>63</sub>O<sub>3</sub>P MW 646.92

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-074S	1 mL
NEAT	PLAS-AX-074N	50 mg

### 2,2'-Ethylidene-bis(4,6-di-tert-butylphenol)

Phenol, 2,2'-ethylidenebis[4,6-bis(1,1-dimethylethyl)-

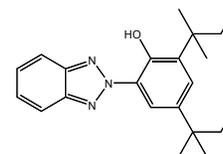


CAS 35958-30-6 MF C<sub>30</sub>H<sub>46</sub>O<sub>2</sub> MW 438.69

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-106N	50 mg

### 2-(2-Hydroxy-3,5-di-tert-amylphenyl) benzotriazole

2-(Benzotriazol-2-yl)-4,6-bis(2-methylbutan-2-yl) phenol



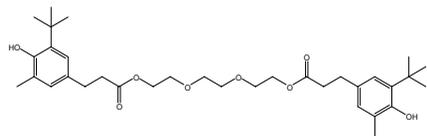
CAS 25973-55-1 MF C<sub>22</sub>H<sub>29</sub>N<sub>3</sub>O MW 351.49

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-095N	50 mg

## Antioxidants (continued)

### Irganox® 245

Triethyleneglycol bis[3-(3-tert-butyl-4-hydroxy-5-methylphenyl)propionate]

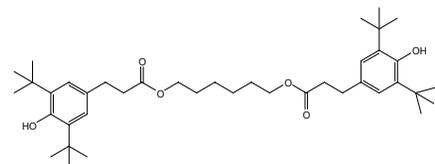


CAS 36443-68-2 MF C<sub>34</sub>H<sub>50</sub>O<sub>8</sub> MW 586.76

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane:Acetone (95:5)	PLAS-AX-070S	1 mL
NEAT	PLAS-AX-070N	50 mg

### Irganox® 259

Hexamethylene bis(3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate)

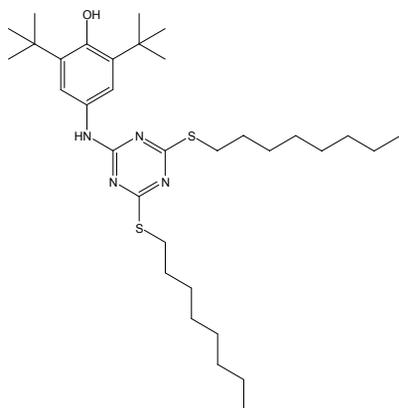


CAS 35074-77-2 MF C<sub>40</sub>H<sub>62</sub>O<sub>6</sub> MW 638.92

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-045S	1 mL
NEAT	PLAS-AX-045N	50 mg

### Irganox® 565

2,4-bis(n-Octylthio)-6-(4-hydroxy-3,5-di-tert-butylanilino)-1,3,5-triazine

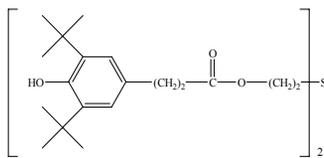


CAS 991-84-4 MF C<sub>33</sub>H<sub>56</sub>N<sub>4</sub>OS<sub>2</sub> MW 588.96

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-014S	1 mL
NEAT	PLAS-AX-014N	50 mg

### Irganox® 1035

Thiodiethylene glycol bis(3,5-di-tert-butyl-4-hydroxyhydrocinnamate)

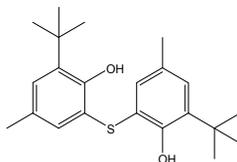


CAS 41484-35-9 MF C<sub>36</sub>H<sub>58</sub>O<sub>6</sub>S MW 642.93

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-069S	1 mL
NEAT	PLAS-AX-069N	50 mg

### Irganox® 1081

6,6'-Di-tert-butyl-2,2'-thiodi-p-cresol

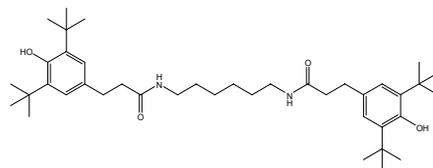


CAS 90-66-4 MF C<sub>22</sub>H<sub>30</sub>O<sub>2</sub>S MW 358.54

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-080S	1 mL
NEAT	PLAS-AX-080N	50 mg

### Irganox® 1098

N,N'-1,6-Hexanediyl bis[3,5-bis(1,1-dimethylethyl)-4-hydroxy-benzenepropanamide]



CAS 23128-74-7 MF C<sub>40</sub>H<sub>64</sub>N<sub>2</sub>O<sub>4</sub> MW 636.95

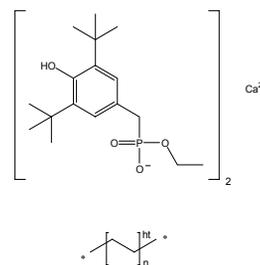
Matrix	Cat. No.	Unit
1000 µg/mL in Hexane:Acetone 80:20	PLAS-AX-050S	1 mL
NEAT	PLAS-AX-050N	50 mg

#### Property Key

CAS Chemical Abstract Service Number MF MW Molecular Formula Molecular Weight

### Irganox® 1425 WL

Ethyl 3,5-di-tert-butyl-4-hydroxybenzylphosphonate, calcium salt and polyethylene-wax mixture

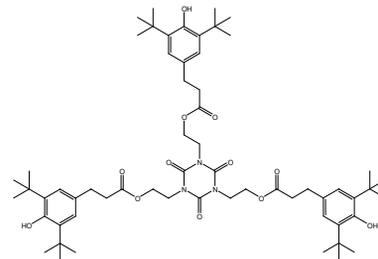


CAS 65140-91-2 / 9002-88-4 MF 2C<sub>17</sub>H<sub>29</sub>O<sub>4</sub>P • Ca(C<sub>2</sub>H<sub>4</sub>)<sub>x</sub> MW 695

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-079N	50 mg

### Irganox® 3125

3,5-Di-tert-butyl-4-hydroxyhydrocinnamic triester with 1,3,5-tris[2-Hydroxyethyl]-s-triazine-2,4,6-[1H,3H,5H]-trione

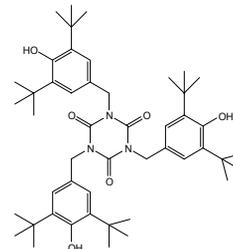


CAS 34137-09-2 MF C<sub>60</sub>H<sub>87</sub>N<sub>3</sub>O<sub>12</sub> MW 1042.35

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane:Acetone (95:5)	PLAS-AX-020S	1 mL
NEAT	PLAS-AX-020N	50 mg

### Irganox® 3114FF

1,3,5-tris(3,5-Di-tert-butyl-4-hydroxybenzyl)-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione



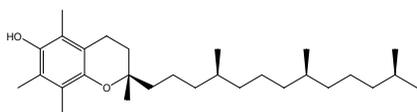
CAS 27676-62-6 MF C<sub>48</sub>H<sub>69</sub>N<sub>3</sub>O<sub>6</sub> MW 784.08

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-078S	1 mL
NEAT	PLAS-AX-078N	50 mg

## Antioxidants (continued)

### Irganox® E 201

alpha-Tocopherol

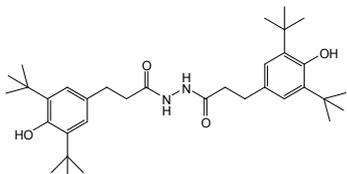


CAS 10191-41-0 MF C<sub>29</sub>H<sub>50</sub>O<sub>2</sub> MW 430.71

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-027S	1 mL
NEAT	PLAS-AX-027N	50 mg

### Irganox® MD 1024

1,2-bis(3,5-Di-tert-butyl-4-hydroxyhydrocinnamoyl)hydrazide

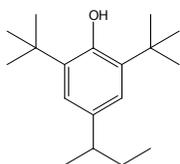


CAS 32687-78-8 MF C<sub>34</sub>H<sub>52</sub>N<sub>2</sub>O<sub>4</sub> MW 552.79

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane:Acetone 80:20	PLAS-AX-001S	1 mL
NEAT	PLAS-AX-001N	50 mg

### Isonox® 132

2,6-Di-tert-butyl-4-sec-butylphenol



CAS 17540-75-9 MF C<sub>18</sub>H<sub>30</sub>O MW 262.43

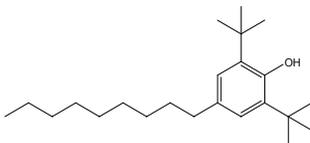
Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-018S	1 mL
NEAT	PLAS-AX-018N	50 mg

#### Property Key

CAS	Chemical Abstract Service Number	MF	Molecular Formula	MW	Molecular Weight
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### Isonox® 232

2,6-Di-tert-butyl-4-nonylphenol

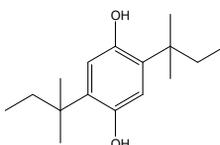


CAS 4306-88-1 MF C<sub>23</sub>H<sub>40</sub>O MW 262.43

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-063S	1 mL
NEAT	PLAS-AX-063N	50 mg

### Lowinox® AH25

2,5-bis(1,1-Dimethylpropyl)-1,4-benzenediol

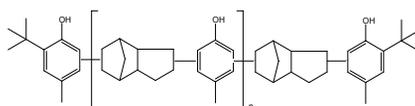


CAS 79-74-3 MF C<sub>16</sub>H<sub>26</sub>O<sub>2</sub> MW 250.38

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-016S	1 mL
NEAT	PLAS-AX-016N	50 mg

### Lowinox® CPL

Polymeric sterically hindered phenol

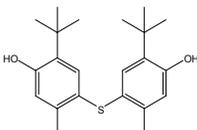


CAS 68610-51-5 MF N/A MW 600-700

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane:Acetone 95:5	PLAS-AX-059S	1 mL
NEAT	PLAS-AX-059N	50 mg

### Lowinox® TBM-6

4,4'-Thiobis(2-tert-butyl-5-methylphenol)



CAS 96-69-5 MF C<sub>22</sub>H<sub>30</sub>O<sub>2</sub>S MW 358.54

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane:Acetone 90:10	PLAS-AX-024S	1 mL
NEAT	PLAS-AX-024N	50 mg

### Markstat® 60

Polyethylene glycol ether - contain < 20% sodium perchlorate

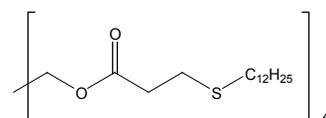
N/A

CAS 7601-89-0 MF N/A MW N/A

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-028S	1 mL
NEAT	PLAS-AX-028N	50 mg

### Naugard® 412S

Pentaerythritol tetrakis (beta-laurylthiopropionate)

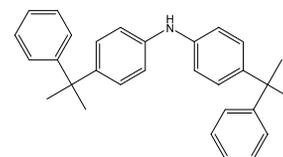


CAS 29598-76-3 MF C<sub>65</sub>H<sub>124</sub>O<sub>8</sub>S<sub>4</sub> MW 1161.94

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-030S	1 mL
NEAT	PLAS-AX-030N	50 mg

### Naugard® 445

4,4'-bis(alpha,alpha-Dimethylbenzyl)diphenylamine

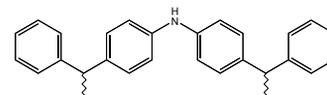


CAS 10081-67-1 MF C<sub>30</sub>H<sub>31</sub>N MW 405.57

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-022S	1 mL
NEAT	PLAS-AX-022N	50 mg

### Naugard® 635

4-(1-Phenylethyl)-N-[4-(1-phenylethyl)phenyl]aniiline



CAS 68442-68-2 MF C<sub>38</sub>H<sub>27</sub>N MW 377.52

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-113N	50 mg

## Antioxidants (continued)

### Naugard® 956

Proprietary blend of primary and secondary antioxidants

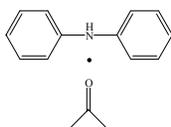
N/A

CAS N/A MF N/A MW N/A

Matrix	Cat. No.	Unit
1000 µg/mL in Toluene	PLAS-AX-060S-T	1 mL
NEAT	PLAS-AX-060N	50 mg

### Naugard® A

Acetone diphenylamine condensation products

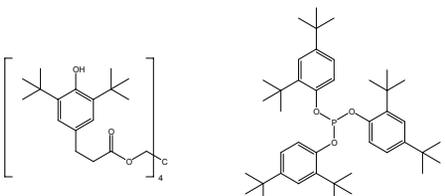


CAS 68412-48-6 MF C<sub>12</sub>H<sub>11</sub>N • C<sub>3</sub>H<sub>6</sub>O MW 227.31

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane:Acetone 80:20	PLAS-AX-026S	1 mL
NEAT	PLAS-AX-026N	50 mg

### Naugard® B-25

1:1 blend of Naugard 10 & Naugard 424

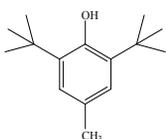


CAS 6683-19-8/31570-04-4 MF C<sub>73</sub>H<sub>108</sub>O<sub>12</sub> • C<sub>42</sub>H<sub>63</sub>O<sub>3</sub>P MW 1177.65 / 646.92

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-061S	1 mL
NEAT	PLAS-AX-061N	50 mg

### Naugard® BHT

2,6-Di-tert-butyl-4-methylphenol

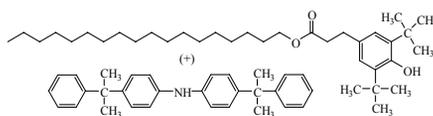


CAS 128-37-0 MF C<sub>15</sub>H<sub>24</sub>O MW 220.35

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-017S	1 mL
NEAT	PLAS-AX-017N	50 mg

### Naugard® HM-22

Blend of phenolic primary and diphenylamine secondary antioxidants (Naugards 76 and 445)

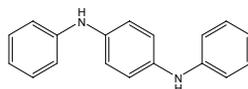


CAS 10081-67-1/2082-79-3 MF C<sub>30</sub>H<sub>31</sub>N / C<sub>35</sub>H<sub>62</sub>O<sub>3</sub> MW 405.57/530.86

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-033S	1 mL
NEAT	PLAS-AX-033N	50 mg

### Naugard® J

N,N'-Diphenyl-p-phenylenediamine

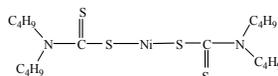


CAS 74-31-7 MF C<sub>18</sub>H<sub>16</sub>N<sub>2</sub> MW 260.36

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane:Acetone 50:50	PLAS-AX-048S	1 mL
NEAT	PLAS-AX-048N	50 mg

### Naugard® NBC

Nickel dibutyl dithiocarbamate

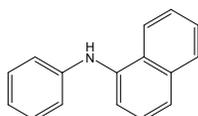


CAS 13927-77-0 MF C<sub>18</sub>H<sub>36</sub>N<sub>2</sub>NiS<sub>4</sub> MW 467.45

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-051S	1 mL
NEAT	PLAS-AX-051N	50 mg

### Naugard® PANA

N-Phenyl-1-naphthylamine

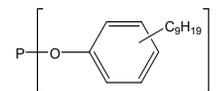


CAS 90-30-2 MF C<sub>16</sub>H<sub>13</sub>N MW 219.28

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-058S	1 mL
NEAT	PLAS-AX-058N	50 mg

### Naugard® PHR

tris(Nonylphenyl) phosphite with up to 1% triisopropylamine

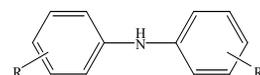


CAS 26523-78-4 MF C<sub>45</sub>H<sub>69</sub>O<sub>3</sub>P MW 689.00

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-076S	1 mL
NEAT	PLAS-AX-076N	50 mg

### Naugard® PS-30

Benzenamine, N-phenyl, reaction products with 2,4,4-trimethylpentene



CAS 68411-46-1 MF C<sub>12</sub>H<sub>11</sub>N • C<sub>8</sub>H<sub>16</sub> MW N/A

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-038S	1 mL
NEAT	PLAS-AX-038N	50 mg

### Naugard® PS-35

Butylated, octylated diphenylamine-2,6 di-tert-butyl-4-sec-butyl phenol

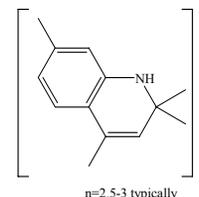
N/A

CAS N/A MF N/A MW N/A

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-046S	1 mL
NEAT	PLAS-AX-046N	50 mg

### Naugard® Q Extra

1,2-Dihydro-2,2,4-trimethylquinoline (polymerized)



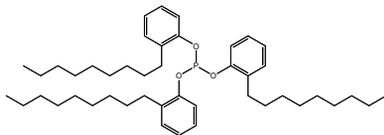
CAS 26780-96-1 MF (C<sub>12</sub>H<sub>15</sub>N)<sub>n</sub> MW (173.25)<sub>n</sub>

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-002S	1 mL
NEAT	PLAS-AX-002N	50 mg

## Antioxidants (continued)

### Naugard® RM-51

tris(Nonylphenyl)phosphite

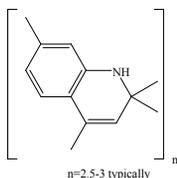


CAS 26523-78-4 MF C<sub>45</sub>H<sub>69</sub>O<sub>3</sub>P MW 689.00

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-034S	1 mL
NEAT	PLAS-AX-034N	50 mg

### Naugard® Super Q

1,2-Dihydro-2,2,4-trimethylquinoline (polymerized)



CAS 26780-96-1 MF (C<sub>12</sub>H<sub>15</sub>N)<sub>n</sub> MW (173.25)<sub>n</sub>

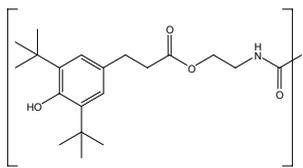
Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-003S	1 mL
NEAT	PLAS-AX-003N	50 mg

#### Property Key

CAS Chemical Abstract Service Number MF Molecular Formula MW Molecular Weight

### Naugard® XL-1

2,2'-Oxamidobis[ethyl-3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate]

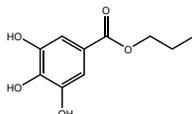


CAS 70331-94-1 MF C<sub>40</sub>H<sub>60</sub>N<sub>2</sub>O<sub>8</sub> MW 697.00

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane:Acetone 80:20	PLAS-AX-008S	1 mL
NEAT	PLAS-AX-008N	50 mg

### Propyl gallate

Propyl 3,4,5-trihydroxybenzoate

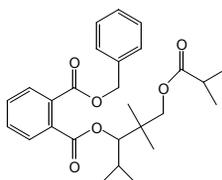


CAS 121-79-9 MF C<sub>10</sub>H<sub>12</sub>O<sub>5</sub> MW 212.20

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-109N	50 mg

### Santicizer® 278

Benzyl 3-isobutyroxy-1-isopropyl-2,2-dimethylpropyl phthalate

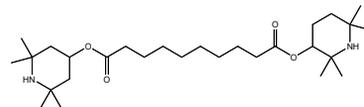


CAS 16883-83-3 MF C<sub>27</sub>H<sub>34</sub>O<sub>6</sub> MW 454.56

Matrix	Cat. No.	Unit
NEAT	PLAS-PL-074N	50 mg

### bis(2,2,6,6-Tetramethyl-4-piperidyl) sebacate **NEW**

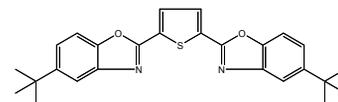
Bis(2,2,6,6-tetramethylpiperidin-4-yl) decanedioate



CAS 52829-07-9 MF C<sub>28</sub>H<sub>52</sub>N<sub>2</sub>O<sub>4</sub> MW 480.72

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-097N	50 mg

### 2,2'-(2,5-Thiophenediyl)bis(5-tert-butylbenzoxazole)

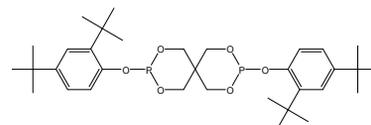


CAS 7128-64-5 MF C<sub>26</sub>H<sub>26</sub>N<sub>2</sub>O<sub>2</sub>S MW 430.56

Matrix	Cat. No.	Unit
NEAT	PLAS-AX-098N	50 mg

### Ultrinox® 626

Bis(2,4-di-tert-butylphenyl)pentaerythritol di-phosphite



CAS 26741-53-7 MF C<sub>33</sub>H<sub>50</sub>O<sub>6</sub>P<sub>2</sub> MW 604.62

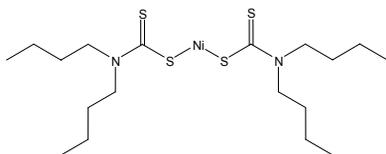
Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AX-031S	1 mL
NEAT	PLAS-AX-031N	50 mg

## Antiozonants

Antiozonants are materials added to plastics to slow the deterioration of the finished product that occurs from exposure to ozone. Antiozonants typically work by migrating to the surface of the product and creating an ozone-impermeable barrier or skin on the surface.

### Akrochem® NIBUD

Nickel dibutyl dithiocarbamate



CAS 13927-77-0 MF C<sub>18</sub>H<sub>36</sub>N<sub>2</sub>NiS<sub>4</sub> MW 467.45

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-AZ-001S	1 mL
NEAT	PLAS-AZ-001N	50 mg

### Akrowax™ 195

A highly refined petroleum wax which is comprised of long chain saturated hydrocarbon molecules

CAS 64742-42-3 MF N/A MW N/A

Matrix	Cat. No.	Unit
NEAT	PLAS-AZ-002N	50 mg



**PolyAdd**  **Check™**

*Polymer Additive Reference Standards*

# Plastic Additives

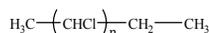
## Blowing Agents

Blowing agents are sometimes also called chemical foaming agents. They are used to release gas into the plastic or resin. Blowing agents can be used to reduce weight, improve softness, provide insulation, add shock absorption properties or add resilience in the final product.

Chemical blowing agents (as opposed to physical blowing agents such as nitrogen gas) are principally organic chemicals that decompose at elevated temperatures to release a gas during decomposition that can add a cellular structure in the plastic.

### CPW-100

Chlorinated paraffin wax

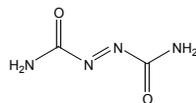


CAS 63449-39-8 MF Unspecified MW

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-BA-001S	1 mL
NEAT	PLAS-BA-001N	50 mg

### Celogen® AZ

Carbamoyliminourea

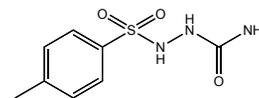


CAS 123-77-3 MF C<sub>2</sub>H<sub>4</sub>N<sub>4</sub>O<sub>2</sub> MW 116.08

Matrix	Cat. No.	Unit
1000 µg/mL in DMSO	PLAS-BA-002-DMSO	1 mL
NEAT	PLAS-BA-002N	50 mg

### Celogen® RA

[[4-Methylphenyl)sulfonylamino]urea



CAS 10396-10-8 MF C<sub>8</sub>H<sub>11</sub>N<sub>3</sub>O<sub>3</sub>S MW 229.26

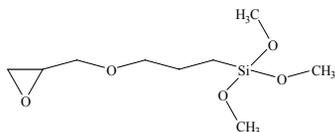
Matrix	Cat. No.	Unit
NEAT	PLAS-BA-003N	50 mg

## Coupling Agents

Coupling agents promote the physical or chemical interaction with the polymer.

### Silquest® A-187

gamma-Glycidoxypropyltrimethoxysilane

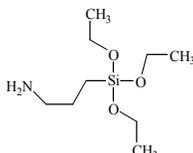


CAS 2530-83-8 MF C<sub>9</sub>H<sub>20</sub>O<sub>5</sub>Si MW 236.38

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-CA-004S	1 mL
NEAT	PLAS-CA-004N	50 mg

### Silquest® A-1102

gamma-Aminopropyltriethoxysilane (Tech grade)

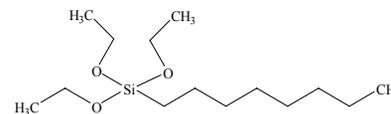


CAS 919-30-2 MF C<sub>9</sub>H<sub>23</sub>NO<sub>3</sub>Si MW 221.37

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-CA-003S	1 mL
NEAT	PLAS-CA-003N	50 mg

### Silquest® A-137

Octyltriethoxysilane

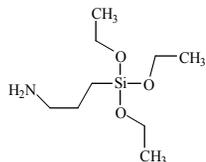


CAS 2943-75-1 MF C<sub>14</sub>H<sub>32</sub>O<sub>3</sub>Si MW 276.55

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-CA-005S	1 mL
NEAT	PLAS-CA-005N	50 mg

### Silquest® A-1100

gamma-Aminopropyltriethoxysilane

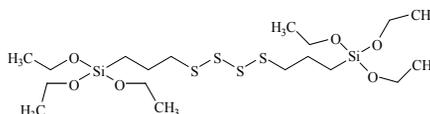


CAS 919-30-2 MF C<sub>9</sub>H<sub>23</sub>NO<sub>3</sub>Si MW 221.37

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-CA-002S	1 mL
NEAT	PLAS-CA-002N	50 mg

### Silquest® A-1289

bis-(Triethoxysilylpropyl)tetrasulfane

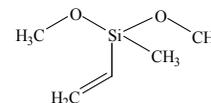


CAS 40372-72-3 MF C<sub>18</sub>H<sub>42</sub>O<sub>6</sub>S<sub>4</sub>Si<sub>2</sub> MW 538.94

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-CA-001S	1 mL
NEAT	PLAS-CA-001N	50 mg

### Silquest® A-2171

Vinylmethyldimethoxysilane



CAS 16753-62-1 MF C<sub>5</sub>H<sub>12</sub>O<sub>2</sub>Si MW 132.24

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-CA-006S	1 mL
NEAT	PLAS-CA-006N	50 mg

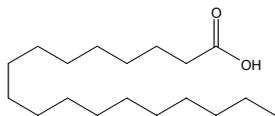
## Cross-Linking Agents

Crosslinking is the polymerization reaction that branches out from the main molecular chain forming a network pattern of chemical bonds. Crosslinking agents enhance this crosslinking and bonding between polymer chains.

Crosslinking adds desirable properties such as: solidity, elasticity, impermeability to gases and better electrical insulation. Crosslinking can also improve a rubber's resistance to chemicals, heat and abrasion.

### F-300, F-1000, F-1500, F-2000, F-3000

Stearic acid

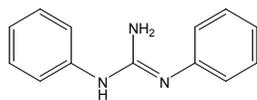


CAS 57-11-4 MF C<sub>18</sub>H<sub>36</sub>O<sub>2</sub> MW 284.48

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-CL-006S	1 mL
NEAT	PLAS-CL-006N	50 mg

### Perkacit® DPG

N,N'-Diphenylguanidine

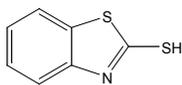


CAS 102-06-7 MF C<sub>13</sub>H<sub>13</sub>N<sub>3</sub> MW 211.27

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane:Acetone 90:10	PLAS-CL-004S	1 mL
NEAT	PLAS-CL-004N	50 mg

### Perkacit® MBT

2-Mercaptobenzothiazole

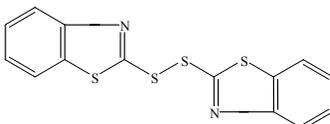


CAS 149-30-4 MF C<sub>7</sub>H<sub>5</sub>S<sub>2</sub>N MW 167.25

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-CL-002S	1 mL
NEAT	PLAS-CL-002N	50 mg

### Perkacit® MBTS

2,2'-Dithiobis(benzothiazole)

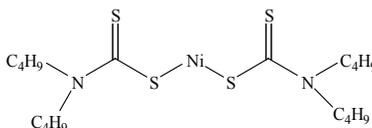


CAS 120-78-5 MF C<sub>14</sub>H<sub>8</sub>N<sub>2</sub>S<sub>4</sub> MW 332.48

Matrix	Cat. No.	Unit
1000 µg/mL in Dichloromethane	PLAS-CL-001S-D	1 mL
NEAT	PLAS-CL-001N	50 mg

### Perkacit® NDBC

Nickel dibutyl dithiocarbamate



CAS 13927-77-0 MF C<sub>18</sub>H<sub>36</sub>N<sub>2</sub>NiS<sub>4</sub> MW 467.45

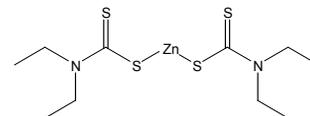
Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-CL-005S	1 mL
NEAT	PLAS-CL-005N	50 mg

#### Property Key

CAS Chemical Abstract Service Number MF Molecular Formula MW Molecular Weight

### Perkacit® ZDEC

Zinc diethyldithiocarbamate

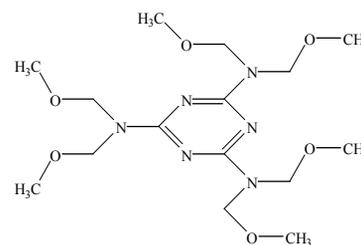


CAS 14324-55-1 MF C<sub>10</sub>H<sub>20</sub>N<sub>2</sub>S<sub>2</sub>Zn MW 361.9

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-CL-007S	1 mL
NEAT	PLAS-CL-007N	50 mg

### Resimene® 3520

Hexamethoxy methyl melamine



CAS 3089-11-0 MF C<sub>15</sub>H<sub>30</sub>N<sub>6</sub>O<sub>6</sub> MW 390.51

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-CL-003S	1 mL
NEAT	PLAS-CL-003N	50 mg

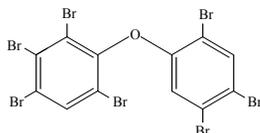
## Flame Retardants

Flame retardants are added to inhibit ignition or the flammability of the end-use product. Flame retardants generally function by inhibiting the mechanisms of burning. Typical chemical elements found in compounds used as flame retardants are: aluminum, bromine, chlorine, fluorine and sulfur.

Brominated flame retardants are commonly used in polystyrene, polyesters, polyolefins, polyamides, epoxies and ABS. Decabromodiphenyl ether is the most frequently used brominated flame retardant. The bromodiphenyl ethers are the most highly regulated of these compounds, and AccuStandard offers the most complete line of individual congeners available anywhere.

Some of these flame retardants are not typically added to polymers in processing, but can be found in a polymer matrix from leaching out of the contents. The largest example of this type is the Aroclors, which can often be found in a plastic matrix from having been in contact with a fluid containing these materials.

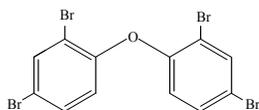
### 2,2',3,4,4',5,6-Heptabromodiphenyl ether



CAS 207122-16-5 MF C<sub>12</sub>H<sub>3</sub>Br<sub>7</sub>O MW 722.48

Matrix	Cat. No.	Unit
50 µg/mL in Isooctane	BDE-183S	1 mL

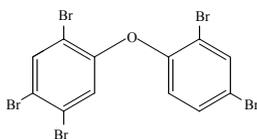
### 2,2',4,4'-Tetrabromodiphenyl ether



CAS 5436-43-1 MF C<sub>12</sub>H<sub>6</sub>Br<sub>4</sub>O MW 485.82

Matrix	Cat. No.	Unit
50 µg/mL in Isooctane	BDE-047S	1 mL

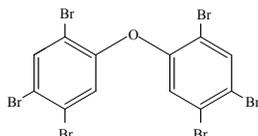
### 2,2',4,4',5-Pentabromodiphenyl ether



CAS 60348-60-9 MF C<sub>12</sub>H<sub>5</sub>Br<sub>5</sub>O MW 564.69

Matrix	Cat. No.	Unit
50 µg/mL in Isooctane	BDE-099S	1 mL

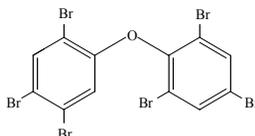
### 2,2',4,4',5,5'-Hexabromodiphenyl ether



CAS 68631-49-2 MF C<sub>12</sub>H<sub>4</sub>Br<sub>6</sub>O MW 643.58

Matrix	Cat. No.	Unit
50 µg/mL in Isooctane	BDE-153S	1 mL

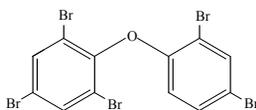
### 2,2',4,4',5,6'-Hexabromodiphenyl ether



CAS 207122-15-4 MF C<sub>12</sub>H<sub>4</sub>Br<sub>6</sub>O MW 643.58

Matrix	Cat. No.	Unit
50 µg/mL in Isooctane	BDE-154S	1 mL

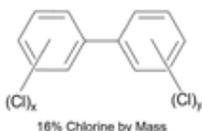
### 2,2',4,4',6-Pentabromodiphenyl ether



CAS 189084-64-8 MF C<sub>12</sub>H<sub>5</sub>Br<sub>5</sub>O MW 564.69

Matrix	Cat. No.	Unit
50 µg/mL in Isooctane	BDE-100S	1 mL

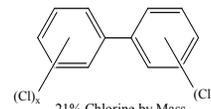
### Aroclor® 1016



CAS 12674-11-2 MF Tech mix MW

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	C-216S-H-10X	1 mL
NEAT	C-216N	100 mg

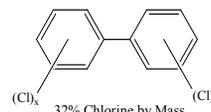
### Aroclor® 1221



CAS 11104-28-2 MF Tech mix MW

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	C-221S-H-10X	1 mL
NEAT	C-221N-50MG	50 mg

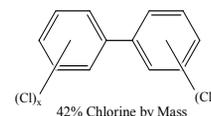
### Aroclor® 1232



CAS 11141-16-5 MF Tech mix MW

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	C-232S-H-10X	1 mL

### Aroclor® 1242



CAS 53469-21-9 MF Tech mix MW

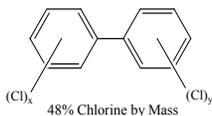
Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	C-242S-H-10X	1 mL
NEAT	C-242N-50MG	50 mg

#### Property Key

CAS Chemical Abstract Service Number MF Molecular Formula MW Molecular Weight

## Flame Retardants (continued)

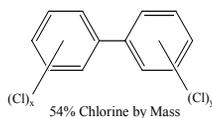
### Aroclor® 1248



CAS 12672-29-6 MF Tech mix MW N/A

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	C-248S-H-10X	1 mL
NEAT	C-248N-50MG	50 mg

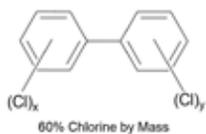
### Aroclor® 1254



CAS 11097-69-1 MF Tech mix MW N/A

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	C-254S-H-10X	1 mL
NEAT	C-254N-50MG	50 mg

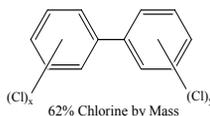
### Aroclor® 1260



CAS 11096-82-5 MF Tech mix MW N/A

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	C-260S-H-10X	1 mL
NEAT	C-260N-50MG	50 mg

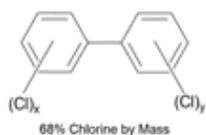
### Aroclor® 1262



CAS 37324-23-5 MF Tech mix MW N/A

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	C-262S-H-10X	1 mL
NEAT	C-262N-50MG	50 mg

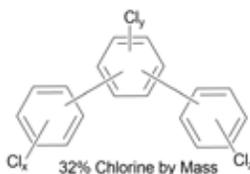
### Aroclor® 1268



CAS 11100-14-4 MF Tech mix MW N/A

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	C-268S-H-10X	1 mL

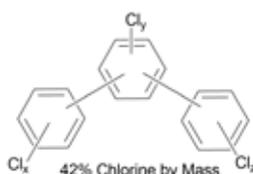
### Aroclor® 5432



CAS 63496-31-1 MF Technical Mix MW N/A

Matrix	Cat. No.	Unit
35 µg/mL in Toluene	T-432S	1 mL

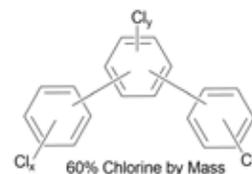
### Aroclor® 5442



CAS 12642-23-8 MF Tech mix MW N/A

Matrix	Cat. No.	Unit
35 µg/mL in Toluene	T-442S	1 mL

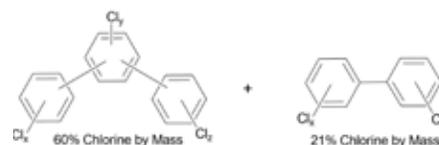
### Aroclor® 5460



CAS 11126-42-4 MF Tech mix MW N/A

Matrix	Cat. No.	Unit
35 µg/mL in Toluene	T-460S	1 mL

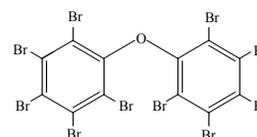
### Aroclor® 6050



CAS MF Tech mix MW N/A

Matrix	Cat. No.	Unit
35 µg/mL in Toluene	T-6050S	1 mL

### Decabromodiphenyl ether

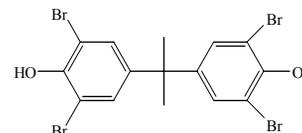


CAS 1163-19-5 MF C<sub>12</sub>Br<sub>10</sub>O MW 959.22

Matrix	Cat. No.	Unit
50 µg/mL in Isooctane	BDE-209S	1 mL

### Firemaster BP4A

4,4'-(1-Methylethylidene) bis(2,6-dibromophenol)



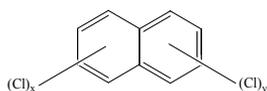
CAS 79-94-7 MF C<sub>15</sub>H<sub>12</sub>Br<sub>4</sub>O<sub>2</sub> MW 543.91

Matrix	Cat. No.	Unit
100 µg/mL in Toluene	FRS-006S	1 mL

## Flame Retardants (continued)

### Halowax 1013

Pentachloronaphthalene

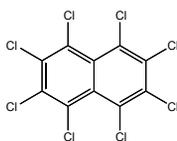


CAS 1321-64-8 MF C<sub>10</sub>H<sub>3</sub>Cl<sub>5</sub> MW 300.38

Matrix	Cat. No.	Unit
100 µg/mL in MeOH	N-1013S	1 mL

### Halowax 1051

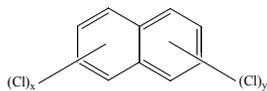
Octachloronaphthalene



CAS 2234-13-1 MF C<sub>10</sub>Cl<sub>8</sub> MW 403.73

Matrix	Cat. No.	Unit
100 µg/mL in MeOH	N-1051S	1 mL

### Halowax 1099

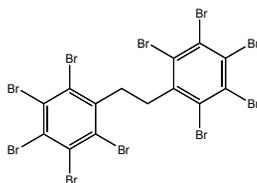


CAS 39450-05-0 MF Tech Mix MW

Matrix	Cat. No.	Unit
100 µg/mL in MeOH	N-1099S	1 mL

### Saytex® 8010

Decabromodiphenyl ethane

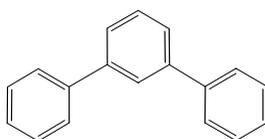


CAS 84852-53-9 MF C<sub>14</sub>H<sub>4</sub>Br<sub>10</sub> MW 971.22

Matrix	Cat. No.	Unit
NEAT	PLAS-FR-001N	50 mg

### m-Terphenyl

1,3-Diphenylbenzene

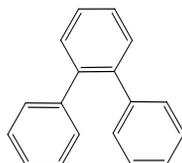


CAS 92-06-8 MF C<sub>18</sub>H<sub>14</sub> MW 230.32

Matrix	Cat. No.	Unit
NEAT	T-002N	100 mg

### o-Terphenyl

1,2-Diphenylbenzene

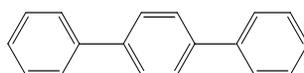


CAS 84-15-1 MF C<sub>18</sub>H<sub>14</sub> MW 230.32

Matrix	Cat. No.	Unit
NEAT	T-001N	100 mg

### p-Terphenyl

1,4-Diphenylbenzene



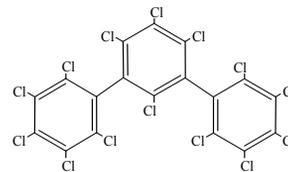
CAS 92-94-4 MF C<sub>18</sub>H<sub>14</sub> MW 230.32

Matrix	Cat. No.	Unit
NEAT	T-003N	100 mg

#### Property Key

CAS	Chemical Abstract Service Number	MF	Molecular Formula
		MW	Molecular Weight

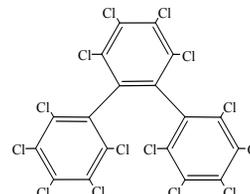
### Tetradecachloro-m-terphenyl



CAS 42429-89-0 MF C<sub>18</sub>Cl<sub>14</sub> MW 712.48

Matrix	Cat. No.	Unit
35 µg/mL in Toluene	T-005S	1 mL

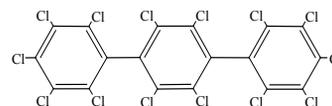
### Tetradecachloro-o-terphenyl



CAS MF C<sub>18</sub>Cl<sub>14</sub> MW 712.48

Matrix	Cat. No.	Unit
35 µg/mL in Toluene	T-004S	1 mL

### Tetradecachloro-p-terphenyl



CAS MF C<sub>18</sub>Cl<sub>14</sub> MW 712.48

Matrix	Cat. No.	Unit
100 µg/mL in MeOH	T-006S	1 mL

## Plasticizers

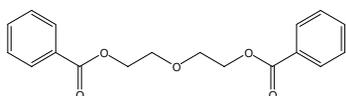
A plasticizer is a compound added to a material, usually a plastic, to make it flexible, resilient and easier to handle. Plasticizers are major components in plastics that determine the physical properties of polymer products.

Plasticizers are generally medium to high molecular weight esters of aliphatic or aromatic carboxylic acids, or sometimes of phosphoric acid. The phosphate esters are often also used for their flame retardant properties. Adipates and phthalates are also very common, but are becoming more highly regulated due to concern that they could act as endocrine disruptors.

The USEPA regulates many Phthalates and Adipates by Methods 606, 506-1 and 8061.

### Benzoflex® 2-45

Diethylene glycol dibenzoate



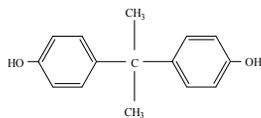
CAS 120-55-8 MF C<sub>18</sub>H<sub>18</sub>O<sub>5</sub> MW 314.33

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-015S	1 mL
NEAT	PLAS-PL-015N	50 mg

See pages 30-31 for all Bisphenol Analog Standards

### Bisphenol A (BPA)

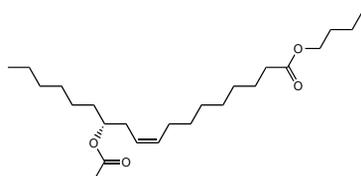
4,4'-Dihydroxy-2,2-diphenylpropane



CAS 80-05-7 MF C<sub>15</sub>H<sub>16</sub>O<sub>2</sub> MW 228.29

Matrix	Cat. No.	Unit
1000 µg/mL in Methanol	M-1626-01S	1 mL

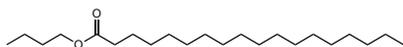
### n-Butyl acetyl ricinoleate NEW



CAS 140-04-5 MF C<sub>24</sub>H<sub>44</sub>O<sub>4</sub> MW 396.60

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-107S	1 mL

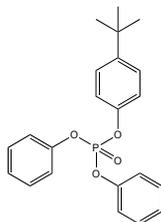
### n-Butyl stearate NEW



CAS 123-95-5 MF C<sub>22</sub>H<sub>44</sub>O<sub>2</sub> MW 340.58

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-114S	1 mL

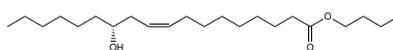
### t-Butylphenyl diphenyl phosphate NEW



CAS 56803-37-3 MF C<sub>22</sub>H<sub>23</sub>O<sub>4</sub>P MW 382.39

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-103S	1 mL

### Butyl ricinoleate NEW

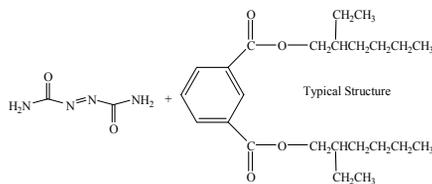


CAS 151-13-3 MF C<sub>22</sub>H<sub>42</sub>O<sub>3</sub> MW 354.57

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-105S	1 mL

### Celogen® SD-125

50% Azodicarbonamide in a phthalate plasticizer



CAS N/A MF N/A MW N/A

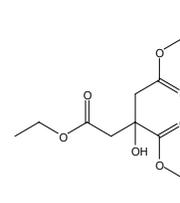
Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-009S	1 mL
NEAT	PLAS-PL-009N	50 mg

#### Property Key

CAS Chemical Abstract Service Number MF Molecular Formula MW Molecular Weight

### Citroflex 2

Triethyl 2-hydroxy-1,2,3-propanetricarboxylate

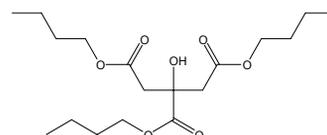


CAS 77-93-0 MF C<sub>12</sub>H<sub>20</sub>O<sub>7</sub> MW 276.32

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-028S	1 mL
NEAT	PLAS-PL-028N	50 mg

### Citroflex 4

Tributyl 2-hydroxy-1,2,3-propanetricarboxylate

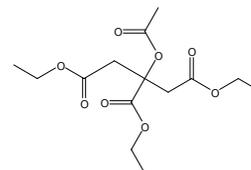


CAS 77-94-1 MF C<sub>18</sub>H<sub>32</sub>O<sub>7</sub> MW 360.45

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-030S	1 mL
NEAT	PLAS-PL-030N	50 mg

### Citroflex A-2

Triethyl 2-acetyloxy-1,2,3-propanetricarboxylate



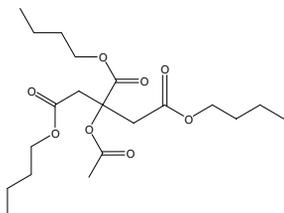
CAS 77-89-4 MF C<sub>14</sub>H<sub>22</sub>O<sub>8</sub> MW 318.32

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-001S	1 mL
NEAT	PLAS-PL-001N	50 mg

## Plasticizers (continued)

### Citroflex A-4

Tributyl 2-acetoxy-1,2,3-propanetricarboxylate

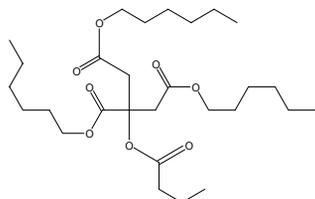


CAS 77-90-7 MF C<sub>20</sub>H<sub>34</sub>O<sub>8</sub> MW 402.54

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-002S	1 mL
NEAT	PLAS-PL-002N	50 mg

### Citroflex B-6

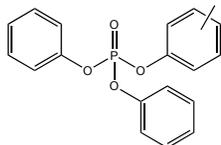
n-Butyryltri-n-hexyl citrate



CAS 82469-79-2 MF C<sub>28</sub>H<sub>50</sub>O<sub>8</sub> MW 514.7

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-025S	1 mL
NEAT	PLAS-PL-025N	50 mg

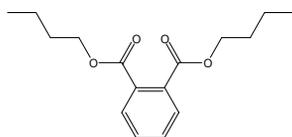
### Cresyl diphenyl phosphate



CAS 26444-49-5 MF C<sub>19</sub>H<sub>17</sub>O<sub>4</sub>P MW 340.31

Matrix	Cat. No.	Unit
NEAT	PLAS-PL-059N	50 mg

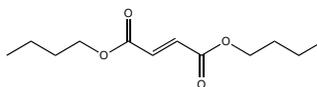
### Dibutyl phthalate



CAS 84-74-2 MF C<sub>16</sub>H<sub>22</sub>O<sub>4</sub> MW 278.34

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-013S	1 mL
NEAT	PLAS-PL-013N	50 mg

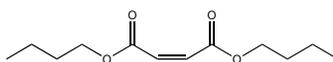
### Dibutyl fumarate NEW



CAS 105-75-9 MF C<sub>12</sub>H<sub>20</sub>O<sub>4</sub> MW 228.28

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-087S	1 mL

### Di-n-butyl maleate NEW

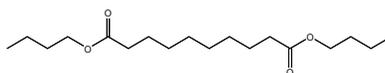


CAS 105-76-0 MF C<sub>12</sub>H<sub>20</sub>O<sub>4</sub> MW 228.28

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-091S	1 mL

### Dibutyl sebacate

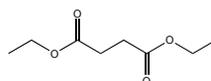
Dibutyl decanedioate



CAS 109-43-3 MF C<sub>18</sub>H<sub>34</sub>O<sub>4</sub> MW 314.46

Matrix	Cat. No.	Unit
NEAT	PLAS-PL-062N	50 mg

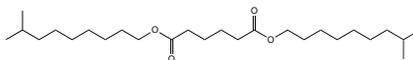
### Diethyl succinate NEW



CAS 123-25-1 MF C<sub>8</sub>H<sub>14</sub>O<sub>4</sub> MW 174.19

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-109S	1 mL

### Diisodecyl adipate NEW



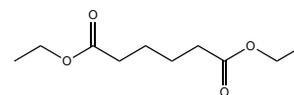
CAS 27178-16-1 MF C<sub>26</sub>H<sub>50</sub>O<sub>4</sub> MW 426.67

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-083S	1 mL

#### Property Key

CAS Chemical Abstract Service Number MF Molecular Formula MW Molecular Weight

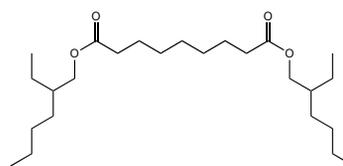
### Diethyl adipate



CAS 141-28-6 MF C<sub>10</sub>H<sub>18</sub>O<sub>4</sub> MW 202.25

Matrix	Cat. No.	Unit
NEAT	PLAS-PL-043N	50 mg

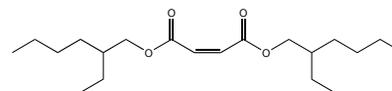
### Di(2-ethylhexyl) azelate NEW



CAS 103-24-2 MF C<sub>25</sub>H<sub>48</sub>O<sub>4</sub> MW 412.66

Matrix	Cat. No.	Unit
1000 µg/mL in Acetone	PLAS-PL-081S-A	1 mL

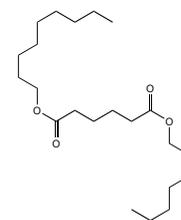
### Di(2-ethylhexyl) maleate NEW



CAS 142-16-5 MF C<sub>20</sub>H<sub>36</sub>O<sub>4</sub> MW 340.50

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-090S	1 mL

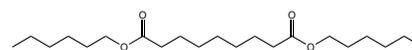
### Di(n-heptyl, n-nonyl) adipate NEW



CAS 68515-75-3 MF C<sub>22</sub>H<sub>42</sub>O<sub>4</sub> MW 370.57

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-080S	1 mL

### Di-n-hexyl azelate NEW

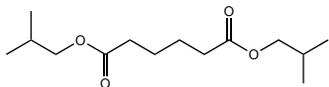


CAS 109-31-9 MF C<sub>21</sub>H<sub>40</sub>O<sub>4</sub> MW 356.54

Matrix	Cat. No.	Unit
1000 µg/mL in Acetone	PLAS-PL-078S-A	1 mL

## Plasticizers (continued)

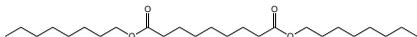
### Diisobutyl adipate **NEW**



CAS 141-04-8 MF C<sub>14</sub>H<sub>26</sub>O<sub>4</sub> MW 258.35

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-082S	1 mL

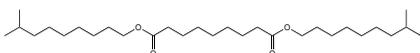
### Diisooctyl azelate **NEW**



CAS 26544-17-2 MF C<sub>25</sub>H<sub>48</sub>O<sub>4</sub> MW 412.65

Matrix	Cat. No.	Unit
1000 µg/mL in Acetone	PLAS-PL-076S-A	1 mL

### Diisodecyl azelate **NEW**

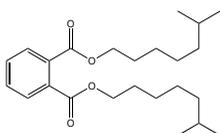


CAS 28472-97-1 MF C<sub>29</sub>H<sub>56</sub>O<sub>4</sub> MW 468.75

Matrix	Cat. No.	Unit
1000 µg/mL in Acetone	PLAS-PL-075S-A	1 mL

### Diisooctyl phthalate

bis(6-Methylheptyl)-1,2-benzenedicarboxylate

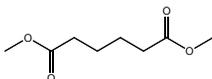


CAS 27554-26-3 MF C<sub>24</sub>H<sub>38</sub>O<sub>4</sub> MW 390.56

Matrix	Cat. No.	Unit
NEAT	PLAS-PL-071N	50 mg

### Dimethyl adipate

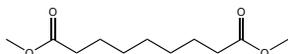
Dimethyl hexanedioate



CAS 627-93-0 MF C<sub>8</sub>H<sub>14</sub>O<sub>4</sub> MW 174.19

Matrix	Cat. No.	Unit
NEAT	PLAS-PL-070N	50 mg

### Dimethyl azelate **NEW**

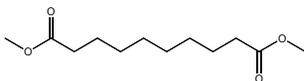


CAS 1732-10-1 MF C<sub>11</sub>H<sub>20</sub>O<sub>4</sub> MW 216.27

Matrix	Cat. No.	Unit
1000 µg/mL in Acetone	PLAS-PL-077S-A	1 mL

### Dimethyl sebacate

Dimethyl decanedioate

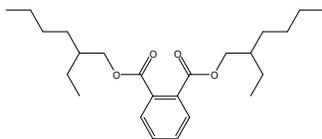


CAS 106-79-6 MF C<sub>12</sub>H<sub>22</sub>O<sub>4</sub> MW 230.30

Matrix	Cat. No.	Unit
NEAT	PLAS-PL-061N	50 mg

### Diocetyl phthalate (DOP)

bis(2-Ethylhexyl)-1,2-benzenedicarboxylate

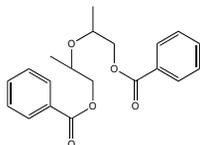


Houghton Chemical

CAS 117-81-7 MF C<sub>24</sub>H<sub>38</sub>O<sub>4</sub> MW 390.56

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-019S	1 mL
NEAT	PLAS-PL-019N	50 mg

### Di(propylene glycol) dibenzoate **NEW**

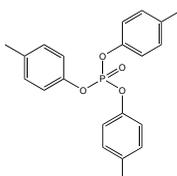


CAS 27138-31-4 MF C<sub>20</sub>H<sub>22</sub>O<sub>5</sub> MW 342.39

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-101S	1 mL

### Disflamoli® TKP

Tricresyl phosphate

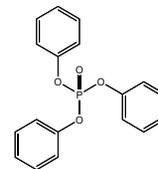


CAS 1330-78-5 MF C<sub>21</sub>H<sub>21</sub>O<sub>4</sub>P MW 368.36

Matrix	Cat. No.	Unit
NEAT	PLAS-PL-073N	50 mg

### Disflamoli TP

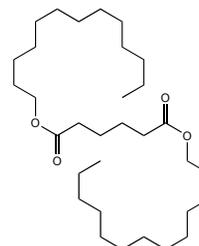
Triphenyl phosphate



CAS 115-86-6 MF C<sub>18</sub>H<sub>15</sub>O<sub>4</sub>P MW 326.28

Matrix	Cat. No.	Unit
NEAT	PLAS-PL-069N	50 mg

### Di(tridecyl) adipate **NEW**



CAS 16958-92-2 MF C<sub>32</sub>H<sub>62</sub>O<sub>4</sub> MW 510.83

Matrix	Cat. No.	Unit
1000 µg/mL in Acetone	PLAS-PL-079S-A	1 mL

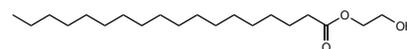
### Epoxidized linseed oil **NEW**

N/A

CAS 8016-11-3 MF N/A MW N/A

Matrix	Cat. No.	Unit
1000 µg/mL in Toluene	PLAS-PL-085S-T	1 mL

### Ethylene glycol monostearate **NEW**

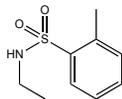


CAS 111-60-4 MF C<sub>20</sub>H<sub>40</sub>O<sub>3</sub> MW 328.53

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-112S	1 mL

## Plasticizers (continued)

### N-Ethyl-o,p-toluenesulfonamide **NEW**



CAS 8047-99-2 MF C<sub>9</sub>H<sub>13</sub>NO<sub>2</sub>S MW 199.27

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-111S	1 mL

### 2-Ethylhexyl epoxy tallate **NEW**

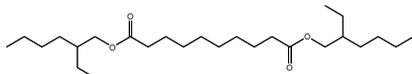
N/A

CAS 61789-01-3 MF N/A MW N/A

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-086S	1 mL

### 2-Ethylhexyl sebacate

bis(2-Ethylhexyl) decanedioate

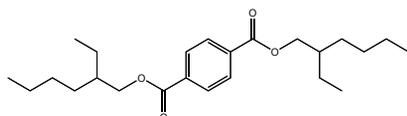


CAS 122-62-3 MF C<sub>26</sub>H<sub>50</sub>O<sub>4</sub> MW 426.67

Matrix	Cat. No.	Unit
NEAT	PLAS-PL-064N	50 mg

### bis(2-Ethylhexyl) terephthalate **NEW**

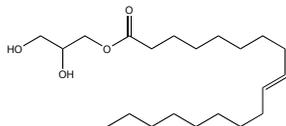
bis(2-Ethylhexyl)-1,4-benzenedicarboxylate



CAS 6422-86-2 MF C<sub>24</sub>H<sub>38</sub>O<sub>4</sub> MW 390.56

Matrix	Cat. No.	Unit
NEAT	PLAS-PL-065N	50 mg

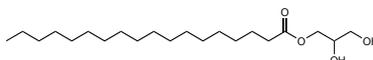
### Glycerol monooleate **NEW**



CAS 25496-72-4 MF C<sub>21</sub>H<sub>40</sub>O<sub>4</sub> MW 356.54

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-096S	1 mL

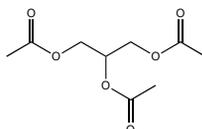
### Glycerol monostearate **NEW**



CAS 31566-31-1 MF C<sub>21</sub>H<sub>42</sub>O<sub>4</sub> MW 358.56

Matrix	Cat. No.	Unit
1000 µg/mL in Toluene	PLAS-PL-115S-T	1 mL

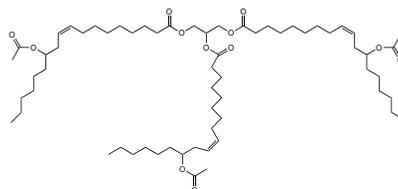
### Glycerol triacetate **NEW**



CAS 102-76-1 MF C<sub>9</sub>H<sub>14</sub>O<sub>6</sub> MW 218.20

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-088S	1 mL

### Glyceryl (triacetyl) ricinoleate **NEW**

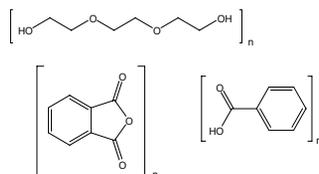


CAS 101-34-8 MF C<sub>63</sub>H<sub>110</sub>O<sub>12</sub> MW 1059.54

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-106S	1 mL

### Hercoflex® 900

1,3-Isobenzofurandione, polymer with 2,2'-(1,2-ethanediylbis(oxy))bis(ethanol), benzoate



CAS 68186-30-1 MF (C<sub>8</sub>H<sub>4</sub>O<sub>3</sub>)<sub>n</sub> (C<sub>6</sub>H<sub>14</sub>O<sub>4</sub>)<sub>n</sub> (C<sub>7</sub>H<sub>6</sub>O<sub>2</sub>)<sub>n</sub> MW N/A

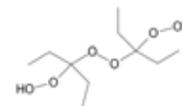
Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-038S	1 mL
NEAT	PLAS-PL-038N	50 mg

#### Property Key

CAS Chemical Abstract Service Number MF Molecular Formula MW Molecular Weight

### Hi-Point PD-1

Methyl ethyl ketone peroxide



CAS 1338-23-4 MF C<sub>8</sub>H<sub>18</sub>O MW 210.23

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-024S	1 mL
NEAT	PLAS-PL-024N	50 mg

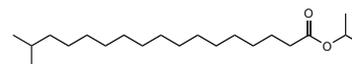
### bis(2-Hydroxyethyl) dimerate **NEW**

N/A

CAS 68855-78-7 MF (C<sub>2</sub>H<sub>4</sub>O<sub>2</sub>)<sub>x</sub> unspecified)x MW N/A

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-084S	1 mL

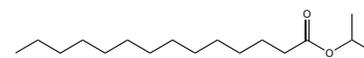
### Isopropyl isostearate **NEW**



CAS 68171-33-5 MF C<sub>21</sub>H<sub>42</sub>O<sub>2</sub> MW 326.56

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-113S	1 mL

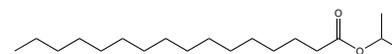
### Isopropyl myristate **NEW**



CAS 110-27-0 MF C<sub>17</sub>H<sub>34</sub>O<sub>2</sub> MW 270.45

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-095S	1 mL

### Isopropyl palmitate **NEW**



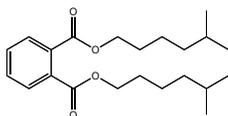
CAS 142-91-6 MF C<sub>19</sub>H<sub>38</sub>O<sub>2</sub> MW 298.50

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-100S	1 mL

## Plasticizers (continued)

### Jayflex® 77

Diisooheptyl phthalate

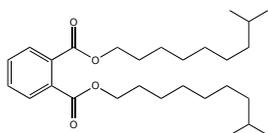


CAS 71888-89-6 MF C<sub>22</sub>H<sub>34</sub>O<sub>4</sub> MW 362.50

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-017S	1 mL
NEAT	PLAS-PL-017N	50 mg

### Jayflex® DIDP

Diisodecyl phthalate

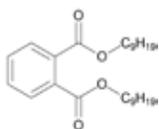


CAS 68515-49-1 MF C<sub>28</sub>H<sub>46</sub>O<sub>4</sub> MW 446.66

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-016S	1 mL
NEAT	PLAS-PL-016N	50 mg

### Jayflex® DINP

Diisononyl phthalate

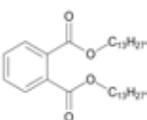


CAS 68515-48-0 MF C<sub>26</sub>H<sub>42</sub>O<sub>4</sub> MW 418.61

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-018S	1 mL
NEAT	PLAS-PL-018N	50 mg

### Jayflex® DTDP

Ditridecyl phthalate

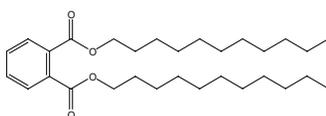


CAS 68515-47-9 MF C<sub>34</sub>H<sub>58</sub>O<sub>4</sub> MW 530.82

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-020S	1 mL
NEAT	PLAS-PL-020N	50 mg

### Jayflex® L11P-E

Diundecyl phthalate

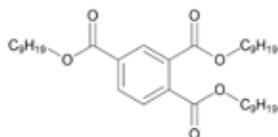


CAS 3648-20-2 MF C<sub>30</sub>H<sub>50</sub>O<sub>4</sub> MW 474.72

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-021S	1 mL
NEAT	PLAS-PL-021N	50 mg

### Jayflex® TINTM

Triisononyl trimellitate

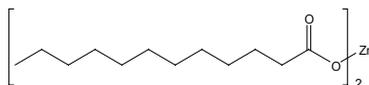


CAS 53894-23-8 MF C<sub>36</sub>H<sub>60</sub>O<sub>6</sub> MW 588.96

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-029S	1 mL
NEAT	PLAS-PL-029N	50 mg

### Laurex®

Zinc salt of lauric and related fatty acids

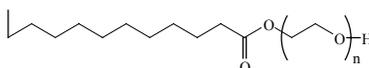


CAS MF C<sub>24</sub>H<sub>46</sub>O<sub>4</sub>Zn MW 464.01

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane:Toluene 80:20	PLAS-PL-032S	1 mL
NEAT	PLAS-PL-032N	50 mg

### Markstat® 51

Poly(ethylene glycol) monolaurate

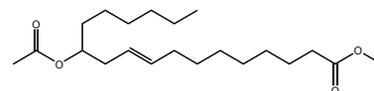


CAS 9004-81-3 MF (C<sub>2</sub>H<sub>4</sub>O)<sub>n</sub>C<sub>12</sub>H<sub>24</sub>O<sub>2</sub> MW N/A

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane:Toluene 90:10	PLAS-PL-003S	1 mL
NEAT	PLAS-PL-003N	50 mg

### Methyl O-acetylricinoleate

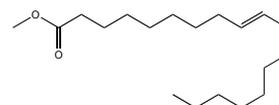
Methyl (Z)-12-acetyloxyoctadec-9-enoate



CAS 140-03-4 MF C<sub>21</sub>H<sub>38</sub>O<sub>4</sub> MW 354.52

Matrix	Cat. No.	Unit
NEAT	PLAS-PL-063N	50 mg

### Methyl oleate NEW

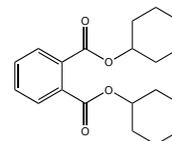


CAS 112-62-9 MF C<sub>19</sub>H<sub>36</sub>O<sub>2</sub> MW 296.49

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-097S	1 mL

### Morfex® 150

Dicyclohexyl phthalate

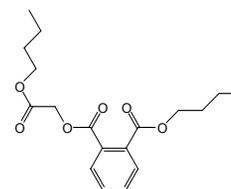


CAS 84-61-7 MF C<sub>20</sub>H<sub>26</sub>O<sub>4</sub> MW 330.46

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-014S	1 mL
NEAT	PLAS-PL-014N	50 mg

### Morfex® 190

Butylphthalyl butyl glycolate



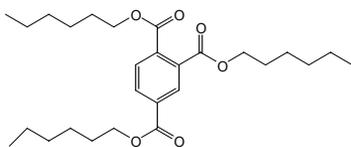
CAS 85-70-1 MF C<sub>18</sub>H<sub>24</sub>O<sub>6</sub> MW 336.38

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-008S	1 mL
NEAT	PLAS-PL-008N	50 mg

## Plasticizers (continued)

### Morflex® 560

Tri-n-hexyl trimellitate

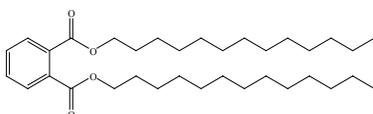


CAS 1528-49-0 MF C<sub>27</sub>H<sub>42</sub>O<sub>6</sub> MW 462.62

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-031S	1 mL
NEAT	PLAS-PL-031N	50 mg

### Morflex® x-1125

Ditridecyl phthalate



CAS 119-06-2 MF C<sub>34</sub>H<sub>58</sub>O<sub>4</sub> MW 530.83

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-033S	1 mL
NEAT	PLAS-PL-033N	50 mg

### Paraplex® G-30

proprietary dibasic acid polyester mixture

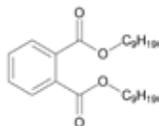
N/A

CAS MF MW

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane:Toluene 88:12	PLAS-PL-027S	1 mL
NEAT	PLAS-PL-027N	50 mg

### Plasthall® DINP plasticizer

Diisononyl phthalate



CAS 28553-12-0 MF C<sub>26</sub>H<sub>42</sub>O<sub>4</sub> MW 418.61

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-072S	1 mL
NEAT	PLAS-PL-072N	50 mg

### Plasthall® ESO

Epoxidized soybean oil

N/A

CAS 8013-07-8 MF N/A MW N/A

Matrix	Cat. No.	Unit
NEAT	PLAS-PL-035N	50 mg

### Polycizer® butyl oleate

Butyl oleate

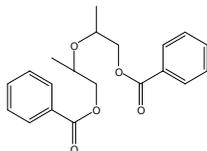


CAS 142-77-8 MF C<sub>22</sub>H<sub>42</sub>O<sub>2</sub> MW 338.57

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-007S	1 mL
NEAT	PLAS-PL-007N	50 mg

### Polycizer® DP 500

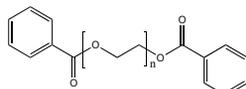
Dipropylene glycol dibenzoate



CAS 27138-31-4 MF C<sub>20</sub>H<sub>22</sub>O<sub>5</sub> MW 342.39

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-011S	1 mL
NEAT	PLAS-PL-011N	50 mg

### Polyethylene glycol 200 dibenzoate NEW



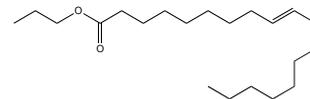
CAS 9004-86-8 MF N/A MW N/A

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-102S	1 mL

#### Property Key

CAS Chemical Abstract Service Number MF Molecular Formula MW Molecular Weight

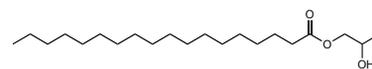
### n-Propyl oleate NEW



CAS 111-59-1 MF C<sub>21</sub>H<sub>40</sub>O<sub>2</sub> MW 324.54

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-098S	1 mL

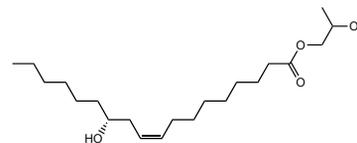
### Propylene glycol monostearate NEW



CAS 1323-39-3 MF C<sub>21</sub>H<sub>42</sub>O<sub>3</sub> MW 342.56

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-116S	1 mL

### Propylene glycol ricinoleate NEW

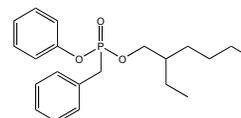


CAS 26402-31-3 MF C<sub>21</sub>H<sub>40</sub>O<sub>4</sub> MW 356.54

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-108S	1 mL

### Santicizer® 141

2-Ethylhexyl diphenyl phosphate

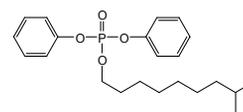


CAS 1241-94-7 MF C<sub>20</sub>H<sub>27</sub>O<sub>4</sub>P MW 362.4

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-026S	1 mL
NEAT	PLAS-PL-026N	50 mg

### Santicizer® 148

Mixture: isodecylidiphenyl phosphate (80-90%) / triphenyl phosphate



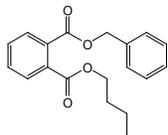
CAS 29761-21-5 MF C<sub>22</sub>H<sub>31</sub>O<sub>4</sub>P MW 390.46

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-022S	1 mL
NEAT	PLAS-PL-022N	50 mg

## Plasticizers (continued)

### Santicizer® 160

Benzyl butyl phthalate

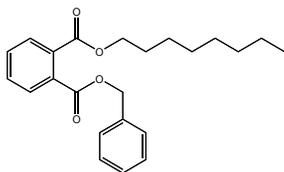


CAS 85-68-7 MF C<sub>19</sub>H<sub>20</sub>O<sub>4</sub> MW 312.37

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-004S	1 mL
NEAT	PLAS-PL-004N	50 mg

### Santicizer® 261

Benzyl octyl phthalate

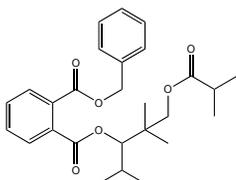


CAS 68515-40-2 MF C<sub>23</sub>H<sub>28</sub>O<sub>4</sub> MW 368.47

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-005S	1 mL
NEAT	PLAS-PL-005N	50 mg

### Santicizer® 278

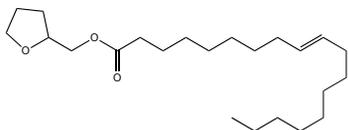
Benzyl 3-isobutyryloxy-1-isopropyl-2,2-dimethylpropyl phthalate



CAS 16883-83-3 MF C<sub>27</sub>H<sub>34</sub>O<sub>6</sub> MW 454.56

Matrix	Cat. No.	Unit
NEAT	PLAS-PL-074N	50 mg

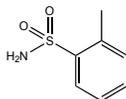
### Tetrahydrofurfuryl oleate NEW



CAS 5420-17-7 MF C<sub>23</sub>H<sub>42</sub>O<sub>3</sub> MW 366.31

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-099S	1 mL

### o,p-Toluenesulfonamide NEW

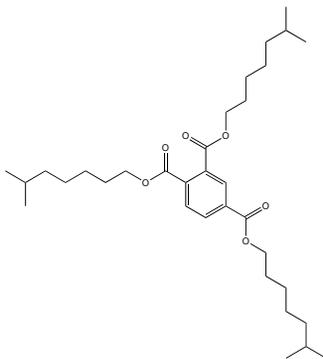


CAS 8013-74-9 MF C<sub>7</sub>H<sub>9</sub>NO<sub>2</sub>S MW 171.22

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-110S	1 mL

### Tricapryl trimellitate NEW

tris(6-Methylheptyl)-1,2,4-benzenetricarboxylate

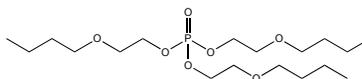


CAS 27251-75-8 MF C<sub>33</sub>H<sub>54</sub>O<sub>6</sub> MW 546.78

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-092S	1 mL

### Tri-butoxyethyl phosphate NEW

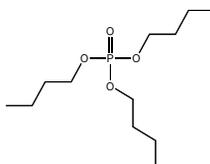
tris(2-Butoxyethyl) phosphate



CAS 78-51-3 MF C<sub>18</sub>H<sub>39</sub>O<sub>7</sub>P MW 398.47

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-104S	1 mL

### Tributyl phosphate

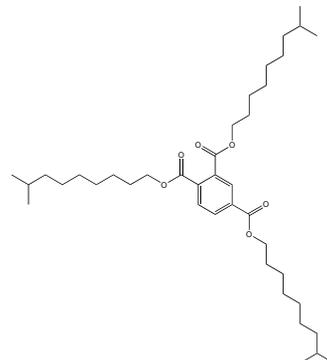


CAS 126-73-8 MF C<sub>12</sub>H<sub>27</sub>O<sub>4</sub>P MW 266.31

Matrix	Cat. No.	Unit
NEAT	PLAS-PL-068N	50 mg

### Triisodecyl trimellitate NEW

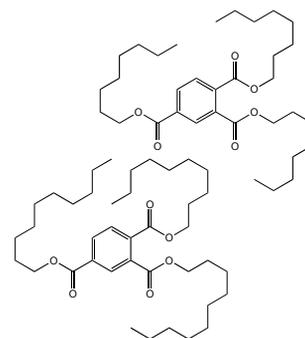
tris(8-Methylnonyl)-1,2,4-benzenetricarboxylate



CAS 36631-30-8 MF C<sub>39</sub>H<sub>66</sub>O<sub>6</sub> MW 630.94

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-093S	1 mL

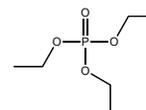
### Tri(n-octyl, n-decyl) trimellitate NEW



CAS 67989-23-5 MF C<sub>72</sub>H<sub>120</sub>O<sub>12</sub> MW 1177.72

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-094S	1 mL

### Triethyl phosphate

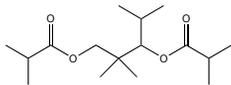


CAS 78-40-0 MF C<sub>6</sub>H<sub>15</sub>O<sub>4</sub>P MW 182.15

Matrix	Cat. No.	Unit
NEAT	PLAS-PL-067N	50 mg

## Plasticizers (continued)

### 2,2,4-Trimethyl-1,3-pentanediol-diisobutyrate **NEW**

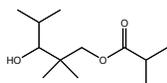


CAS 6846-50-0 MF C<sub>16</sub>H<sub>30</sub>O<sub>4</sub> MW 286.41

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PL-089S	1 mL

### 2,2,4-Trimethyl-1,3-pentanediol-isobutyrate

3-Hydroxy-2,2,4-trimethylpentyl 2-methylpropanoate

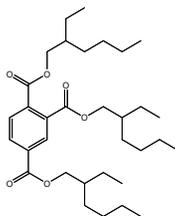


CAS 25265-77-4 MF C<sub>12</sub>H<sub>24</sub>O<sub>3</sub> MW 216.32

Matrix	Cat. No.	Unit
NEAT	PLAS-PL-066N	50 mg

### Trimellitate

tris(2-Ethylhexyl)-1,2,4-benzenetricarboxylic acid



CAS 3319-31-1 MF C<sub>33</sub>H<sub>54</sub>O<sub>6</sub> MW 546.78

Matrix	Cat. No.	Unit
NEAT	PLAS-PL-060N	50 mg

### Vinsol® powder

N/A

CAS 8050-09-7

Matrix	Cat. No.	Unit
1000 µg/mL in CH <sub>2</sub> Cl <sub>2</sub>	PLAS-PL-037S-D	1 mL
NEAT	PLAS-PL-037N	50 mg

### Vinsol® resin

gum rosin

N/A

CAS 8050-09-7

Matrix	Cat. No.	Unit
1000 µg/mL in CH <sub>2</sub> Cl <sub>2</sub>	PLAS-PL-036S-D	1 mL
NEAT	PLAS-PL-036N	50 mg



## Processing Aids

Processing aids are compounding materials that improve the processing of polymers by: creating better dispersion of dry materials, increasing extrusion rates, reducing powder consumption during mixing, promoting compound fusion, adding lubrication, improving knitting and creating a smoother surface on calendered and extruded products.

### Akrochem® Ceresin Wax

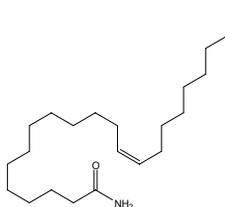
A complex combination of hydrocarbons produced by the purification of Ozocerite with Sulfuric acid and filtration through bone black to form waxy cakes

CAS 8001-75-0 MF N/A MW N/A

Matrix	Cat. No.	Unit
NEAT	PLAS-PA-002N	50 mg

### Kemamide® E ultra

Erucamide



CAS 112-84-5 MF C<sub>22</sub>H<sub>43</sub>NO MW 337.58

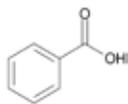
Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-PA-001S	1 mL
NEAT	PLAS-PA-001N	50 mg

## Retarders

Retarders are used to delay the onset of crosslinking and can be used to allow for longer processing times. They are also used to reduce scorching.

### Akrochem® Retarder BAX

Active ingredient benzoic acid (oil treated)

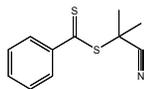


CAS 65-85-0 MF MW

Matrix	Cat. No.	Unit
NEAT	PLAS-RT-011N	50 mg

### 2-Cyano-2-propyl benzodithioate

Benzenecarbodithioic acid, 1-cyano-1-methylethyl ester

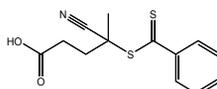


CAS 201611-85-0 MF C<sub>11</sub>H<sub>11</sub>NS<sub>2</sub> MW 221.34

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane:Acetone(50:50)	PLAS-RT-002S	1 mL
NEAT	PLAS-RT-002N	50 mg

### 4-Cyano-4-(phenylcarbonothioylthio)pentanoic acid

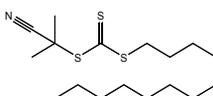
Pentanoic acid, 4-cyano-4-[(phenylthioxomethyl)thio]-



CAS 201611-92-9 MF C<sub>13</sub>H<sub>13</sub>NO<sub>2</sub>S<sub>2</sub> MW 279.38

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-RT-003S	1 mL
NEAT	PLAS-RT-003N	50 mg

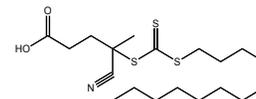
### 2-Cyano-2-propyl dodecyl trithiocarbonate



CAS 870196-83-1 MF C<sub>17</sub>H<sub>31</sub>NS<sub>3</sub> MW 345.63

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-RT-004S	1 mL
NEAT	PLAS-RT-004N	50 mg

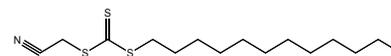
### 4-Cyano-4-[(dodecylsulfanylthiocarbonyl)sulfanyl]pentanoic acid



CAS 870196-80-8 MF C<sub>19</sub>H<sub>33</sub>NO<sub>2</sub>S<sub>3</sub> MW 403.67

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-RT-005S	1 mL
NEAT	PLAS-RT-005N	50 mg

### Cyanomethyl dodecyl trithiocarbonate

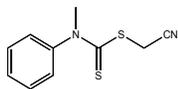


CAS 796045-97-1 MF C<sub>15</sub>H<sub>27</sub>NS<sub>3</sub> MW 317.58

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-RT-006S	1 mL
NEAT	PLAS-RT-006N	50 mg

## Retarders (continued)

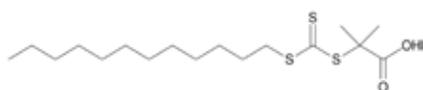
### Cyanomethyl methyl(phenyl)carbamo-dithioate



CAS 76926-16-4 MF C<sub>10</sub>H<sub>10</sub>N<sub>2</sub>S<sub>2</sub> MW 222.33

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-RT-009S	1 mL
NEAT	PLAS-RT-009N	50 mg

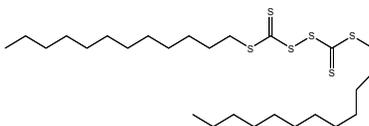
### 2-(Dodecylthiocarbonothioylthio)-2-methylpropionic acid



CAS 461642-78-4 MF C<sub>17</sub>H<sub>32</sub>O<sub>2</sub>S<sub>3</sub> MW 364.63

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-RT-010S	1 mL

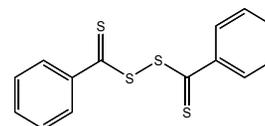
### bis(Dodecylsulfanylthiocarbonyl) disulfide



CAS 870532-86-8 MF C<sub>26</sub>H<sub>50</sub>S<sub>6</sub> MW 555.07

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-RT-008S	1 mL
NEAT	PLAS-PL-008N	50 mg

### bis(Thiobenzoyl) disulfide

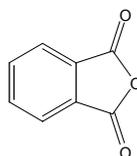


CAS 5873-93-8 MF C<sub>14</sub>H<sub>10</sub>S<sub>4</sub> MW 306.49

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-RT-007S	1 mL
NEAT	PLAS-RT-007N	50 mg

### Retarder AK

Phthalic anhydride



CAS 85-44-9 MF C<sub>8</sub>H<sub>4</sub>O<sub>3</sub> MW 148.12

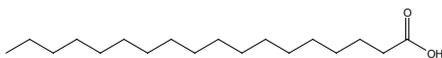
Matrix	Cat. No.	Unit
1000 µg/mL in Hexane:Acetone(60:40)	PLAS-RT-001S	1 mL
NEAT	PLAS-RT-001N	50 mg

## Stearates

Stearic acid and the metallic salts of this acid are used for many different applications depending on the polymer system. Stearates can act as lubricants, acid scavengers, anti-tack compounds, vulcanization promoters/accelerators or mold release agents.

### Stearic Acid RG (rubber grade)

Stearic acid

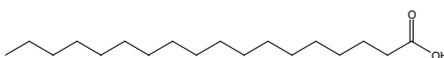


CAS 57-11-4 MF C<sub>18</sub>H<sub>36</sub>O<sub>2</sub> MW 284.48

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-ST-001S	1 mL
NEAT	PLAS-ST-001N	50 mg

### Stearic Acid TP

Stearic acid



CAS 57-11-4 MF C<sub>18</sub>H<sub>36</sub>O<sub>2</sub> MW 284.48

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-ST-002S	1 mL
NEAT	PLAS-ST-002N	50 mg

### Property Key

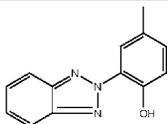
CAS Chemical Abstract Service Number MF Molecular Formula MW Molecular Weight

## UV Stabilizers

UV stabilizers act to protect the plastic against UV or sunlight damage such as discoloration, cracking, brittleness or other loss of desirable physical properties.

Typical UV Stabilizers are benzophenones, hindered amines and benzotriazole. Also used, but not as effective, are salicylate esters, cyanoacrylates and bezilidenes.

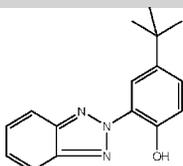
### 2-(2-Hydroxy-5-methylphenyl)benzotriazole



CAS 2440-22-4 MF C<sub>13</sub>H<sub>11</sub>N<sub>3</sub>O MW 225.25

Matrix	Cat. No.	Unit
1000 µg/mL in AcCN	PLAS-UV-006S-CN	1 mL
NEAT	PLAS-UV-006N	50 mg

### 2-(5-tert-Butyl-2-hydroxyphenyl)benzotriazole

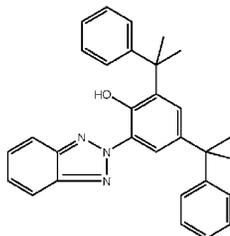


CAS 3147-76-0 MF C<sub>16</sub>H<sub>17</sub>N<sub>3</sub>O MW 267.33

Matrix	Cat. No.	Unit
1000 µg/mL in AcCN	PLAS-UV-007S-CN	1 mL
NEAT	PLAS-UV-007N	50 mg

### 2-(2-Hydroxy-3,5-di(1,1-dimethylbenzyl)phenyl)benzotriazole

2-(2-Hydroxy-3,5-di-tert-amylphenyl)benzotriazole

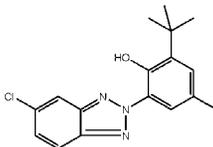


CAS 70321-86-7 MF C<sub>30</sub>H<sub>29</sub>N<sub>3</sub>O MW 447.57

Matrix	Cat. No.	Unit
1000 µg/mL in AcCN	PLAS-UV-008S-CN	1 mL
NEAT	PLAS-UV-008N	50 mg

### 2-tert-Butyl-6(5-chloro-2H-benzotriazol-2-yl)-4-methylphenol

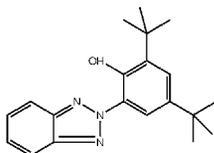
2-(2-Hydroxy-3-tert-butyl-5-methylphenyl)-5-benzotriazole



CAS 3896-11-5 MF C<sub>17</sub>H<sub>18</sub>ClN<sub>3</sub>O MW 315.80

Matrix	Cat. No.	Unit
1000 µg/mL in AcCN	PLAS-UV-009S-CN	1 mL
NEAT	PLAS-UV-009N	50 mg

### 2-(3,5-Di-tert-butyl-2-hydroxyphenyl)benzotriazole

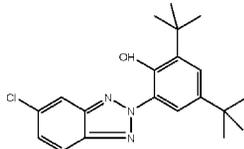


CAS 3846-71-7 MF C<sub>20</sub>H<sub>25</sub>N<sub>3</sub>O MW 323.43

Matrix	Cat. No.	Unit
1000 µg/mL in AcCN	PLAS-UV-010S-CN	1 mL
NEAT	PLAS-UV-010N	50 mg

### 2,4-Di-tert-butyl-6-(5-chloro-2H-benzotriazol-2-yl)phenol

2-(2-Hydroxy-3,5-di-tert-butylphenyl)-5-chlorobenzotriazole

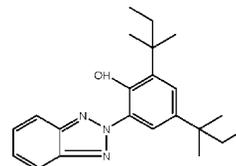


CAS 3864-99-1 MF C<sub>20</sub>H<sub>24</sub>ClN<sub>3</sub>O MW 357.88

Matrix	Cat. No.	Unit
1000 µg/mL in AcCN	PLAS-UV-011S-CN	1 mL
NEAT	PLAS-UV-011N	50 mg

### 2-(2H-Benzotriazol-2-yl)-4,6-di-tert-pentylphenol

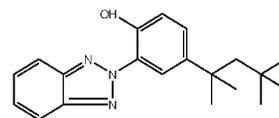
2-(2-Hydroxy-3,5-di-tert-amylphenyl)benzotriazole



CAS 25973-55-1 MF C<sub>22</sub>H<sub>29</sub>N<sub>3</sub>O MW 351.49

Matrix	Cat. No.	Unit
1000 µg/mL in AcCN	PLAS-UV-012S-CN	1 mL
NEAT	PLAS-UV-012N	50 mg

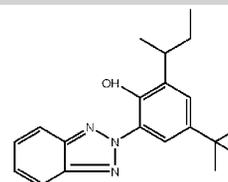
### 2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole



CAS 3147-75-9 MF C<sub>20</sub>H<sub>25</sub>N<sub>3</sub>O MW 323.43

Matrix	Cat. No.	Unit
1000 µg/mL in AcCN	PLAS-UV-013S-CN	1 mL
NEAT	PLAS-UV-013N	50 mg

### 2-(3-sec-Butyl-5-tert-butyl-2-hydroxyphenyl)benzotriazole

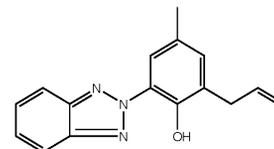


CAS 36437-37-3 MF C<sub>20</sub>H<sub>25</sub>N<sub>3</sub>O MW 323.43

Matrix	Cat. No.	Unit
1000 µg/mL in AcCN	PLAS-UV-014S-CN	1 mL

### 2-(2H-Benzotriazol-2-yl)-4-methyl-6-(2-propenyl)phenol

2-(2-Hydroxy-3-allyl-5-methylphenyl)benzotriazole



CAS 2170-39-0 MF C<sub>16</sub>H<sub>15</sub>N<sub>3</sub>O MW 265.31

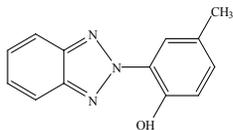
Matrix	Cat. No.	Unit
1000 µg/mL in AcCN	PLAS-UV-015S-CN	1 mL
NEAT	PLAS-UV-015N	50 mg

UV Stabilizer Set (Solutions)		10 x 1 mL
PLAS-UV-STAB-SET	PLAS-UV-006S-CN to 015S-CN	

## UV Stabilizers (continued)

### Tinuvin® PED

2-(2-Hydroxy-5-methylphenyl)benzotriazole

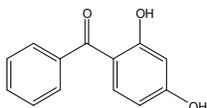


CAS 2440-22-4 MF C<sub>13</sub>H<sub>11</sub>N<sub>3</sub>O MW 225.27

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-UV-005S	1 mL
NEAT	PLAS-UV-005N	50 mg

### Uvinul® 3000

2,4-Dihydroxybenzophenone

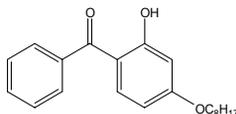


CAS 131-56-6 MF C<sub>13</sub>H<sub>10</sub>O<sub>3</sub> MW 214.22

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane:Acetone (80:20)	PLAS-UV-001S	1 mL
NEAT	PLAS-UV-001N	50 mg

### Uvinul® 3008

2-Hydroxy-4-octyloxybenzophenone

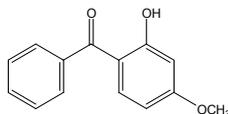


CAS 1843-05-6 MF C<sub>21</sub>H<sub>26</sub>O<sub>3</sub> MW 326.43

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-UV-002S	1 mL
NEAT	PLAS-UV-002N	50 mg

### Uvinul® 3040

2-Hydroxy-4-methoxybenzophenone

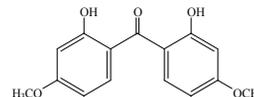


CAS 131-57-7 MF C<sub>14</sub>H<sub>12</sub>O<sub>3</sub> MW 228.26

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane	PLAS-UV-003S	1 mL
NEAT	PLAS-UV-003N	50 mg

### Uvinul® 3049

2,2'-Dihydroxy-4,4'-dimethoxybenzophenone



CAS 131-54-4 MF C<sub>15</sub>H<sub>14</sub>O<sub>5</sub> MW 274

Matrix	Cat. No.	Unit
1000 µg/mL in Hexane:Acetone (80:20)	PLAS-UV-004S	1 mL
NEAT	PLAS-UV-004N	50 mg

## Vegetable Oils

Vegetable oils, typically the epoxide or the ester of the parent oil, are used as plasticizers. They offer the advantage of not only providing flexibility in the final plastic, but also add heat and light stabilizing advantages without the requirements for additional additives. Vegetable oil plasticizers are generally less toxic than their petrochemical counterparts, which makes them very attractive for certain applications like food or toys.

Some of their disadvantages are that they may not mix properly at higher concentrations, may cause brittleness in some applications and often are only suitable as secondary plasticizers.

### Akrofax™ A

Vulcanized vegetable oil

N/A

CAS 68952-47-6 MF N/A MW N/A

Matrix	Cat. No.	Unit
NEAT	PLAS-VA-001N	50 mg

### Akrofax™ B

Vulcanized vegetable oil

N/A

CAS N/A MF N/A MW N/A

Matrix	Cat. No.	Unit
NEAT	PLAS-VA-002N	50 mg

# Plastic Packaging Testing

## ASTM Method D6042-92 Plastic Packaging Testing Standards

This method is used by both pharmaceutical companies and plastics manufacturers to ensure the quality of the plastic product during the manufacturing process. Compounds are often added to the method's analyte list by pharmaceutical companies.

### Calibration Mix

**PLAS-CAL-001** 1 x 1 mL  
**PLAS-CAL-001-PAK** SAVE 20% 5 x 1 mL  
50 µg/mL each in Isopropanol 7 comps.

BHT	Irganox 3114
Erucamide Slip	Irganox 1010
Vitamin E	Irganox 1076
Irgafos 168	

### Internal Standard Mix

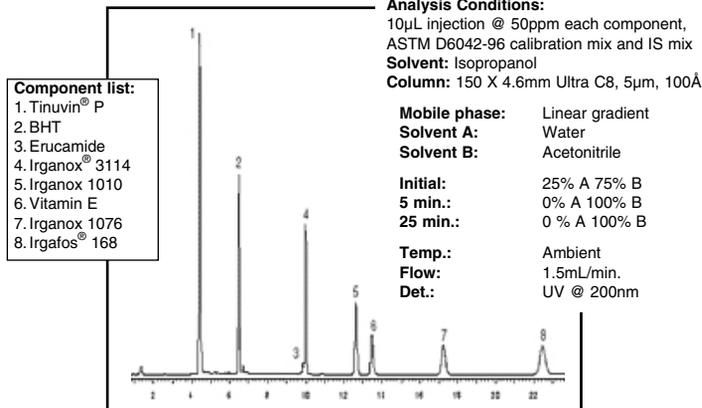
**PLAS-IS-001** 1 x 1 mL  
**PLAS-IS-001-PAK** SAVE 20% 5 x 1 mL  
51.8 µg/mL in Isopropanol

Tinuvin P

### Expanded List of Additives

Each at 50 µg/mL in Isopropanol

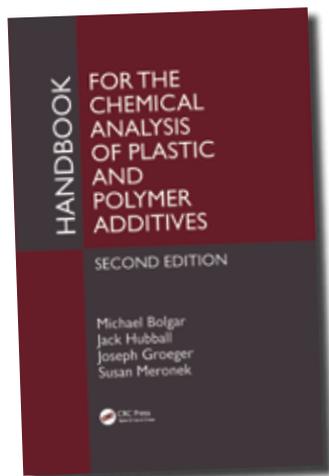
Ultrinox 626	PLAS-CAL-002-1	1 mL
Santanox R	PLAS-CAL-002-2	1 mL
Ethinox 330	PLAS-CAL-002-3	1 mL
Ethinox 323	PLAS-CAL-002-4	1 mL
Ethinox 702	PLAS-CAL-002-5	1 mL
Ethinox 703	PLAS-CAL-002-6	1 mL
Irganox 1035	PLAS-CAL-002-7	1 mL



The figure shows the separation of the compounds on the method's analyte list, as analyzed by our HPLC specialists. The primary calibration standard mixture contains the common antioxidants and slips listed in ASTM D6042-96.

## The perfect companion for your analysis!

This reference book contains the compounds in this catalog, with important reference data to aid in testing and compliance.



Each Compound has:

#### Chemical Information

- Structure
- CAS Number (where applicable)
- RTECS Number (where available)
- Formula
- Molecular Weight
- IUPAC Name, other common names and some popular brand names

#### Physical Properties

- Appearance
- Melting and Boiling Points
- Stability
- Solubilities in several common solvents

#### Other Important Information

- Application
- Regulatory
- Environmental Impact
- Point of Release
- Toxicological Data

#### Analytical Data

- Mass Spectrum with key ions tabulated
- Chromatogram with conditions

### Handbook for the Chemical Analysis of Plastic and Polymer Additives, 2nd Ed.

The Second Edition of this handbook provides the necessary tools for chemists to obtain a more complete listing of additives present in a particular polymeric matrix. This edition features:

- Updated material to include the most recent additives available
- Contains actual analytical data for each chemical along with the description and methods used for obtaining the results
- Highlights the toxicological and environmental impact of each product
- Summarizes regulatory and health information in a convenient "one-step" format

With 50 additional compounds, this 2nd edition nearly doubles the number of additives in several categories including processing aids, anti-static compounds, mold release products and blowing agents. It includes a listing that can be cross-referenced by trade name, chemical name, CAS number and even key mass unit ions from the GC/MS run. Also included are case studies related to "real-world" issues, tips for analysis in challenging matrices and more.

# Bisphenol Analogs

## Bisphenol Analog Standards

Bisphenol A (2,2'-bis(4-Hydroxyphenyl)propane, BPA) has been used in commercial and industrial applications since the 1970's. It has been the subject of numerous toxicological studies due to human exposure from leachate originating from polycarbonate plastics and epoxy-lined food and drink containers.

The evidence of the toxic effects of BPA has led to restrictions and regulations, resulting in its replacement in commercial products with related compounds. Several chemicals with structural similarity to BPA (ie. two hydroxyl phenyl moieties) have been used as alternatives in the manufacture of polycarbonate plastics and epoxy resins. 4,4-Sulfonyldiphenol (BPS) and 4,4-Dihydroxydiphenylmethane (BPF) are the two main substitutes. However, their similarity to BPA has led to their monitoring and testing for human exposure and toxicity as well.

In addition to the BPA analogs, there has been increased scrutiny of bisphenol A diglycidyl ether (BADGE) which is a widely used building block of epoxy resin. Studies have shown that it also might be linked to adverse human health effects.

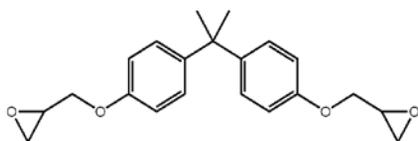
AccuStandard has recognized the need for a comprehensive product line of these BPA related compounds and is offering reference standards for eight BPA analogs as well as the BADGE starting material.

### References:

1. Environ. Sci. Technol. 2012, 46, 9138-9145
2. Environ. Sci. Technol. 2012, 46, 12968-12976
3. Environ. Sci. Technol. 2012, 46, 11558-11565

### Bisphenol A diglycidyl ether (BADGE)

2,2-bis(4-Glycidyloxyphenyl)propane

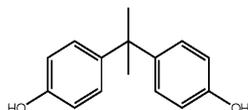


**CAS** 1675-54-3 **MF** C<sub>21</sub>H<sub>24</sub>O<sub>4</sub> **MW** 340.41  
**log Kow** 3.8 **PS** L **SOL** MeOH **SG** 1.16 g/cm<sup>3</sup>  
**MP** N/A **BP** >200 °C **FP** N/A

Matrix	Cat. No.	Unit
NEAT	BADGE-001N	50 mg
10 mg/mL in MeOH	BADGE-001S	1 mL

### Bisphenol A (BPA)

2,2-bis(4-Hydroxyphenyl)propane

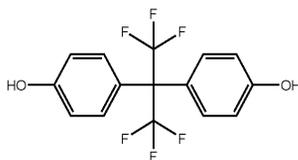


**CAS** 80-05-7 **MF** C<sub>15</sub>H<sub>16</sub>O<sub>2</sub> **MW** 228.29  
**log Kow** 3.43 **PS** S **SOL** Acetone, Benzene, Ether  
**SG** 1.14 g/cm<sup>3</sup> **MP** 156 °C **BP** 220 °C **FP** 192 °C

Matrix	Cat. No.	Unit
NEAT	BPA-A-N	50 mg
10 mg/mL in MeOH	BPA-A-S	1 mL

### Bisphenol AF

2,2-bis(4-Hydroxyphenyl)-1,1,1,3,3,3-hexafluoropropane

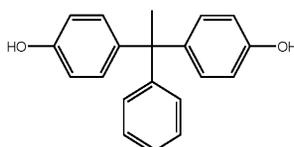


**CAS** 1478-61-1 **MF** C<sub>15</sub>H<sub>10</sub>F<sub>6</sub>O<sub>2</sub> **MW** 336.23  
**log Kow** 4.47 **PS** S **SG** 1.45 g/cm<sup>3</sup> **MP** 159-162 °C  
**BP** 400 °C **FP** 162 °C

Matrix	Cat. No.	Unit
NEAT	BPA-AF-N	50 mg
10 mg/mL in MeOH	BPA-AF-S	1 mL

### Bisphenol AP

1,1-bis(4-Hydroxyphenyl)-1-phenylethane

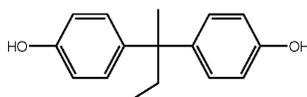


**CAS** 1571-75-1 **MF** C<sub>20</sub>H<sub>18</sub>O<sub>2</sub> **MW** 290.36  
**log Kow** 4.86 **PS** S **SG** 1.18 g/cm<sup>3</sup> **MP** 182-183 °C  
**BP** 473-475 °C **FP** 222 °C

Matrix	Cat. No.	Unit
NEAT	BPA-AP-N	50 mg
10 mg/mL in MeOH	BPA-AP-S	1 mL

### Bisphenol B

2,2-bis(4-Hydroxyphenyl)butane

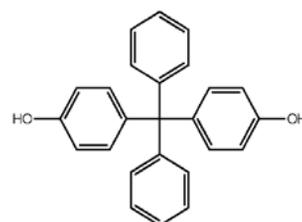


**CAS** 77-40-7 **MF** C<sub>16</sub>H<sub>18</sub>O<sub>2</sub> **MW** 242.31  
**log Kow** 4.13 **PS** S **SG** 1.12 g/cm<sup>3</sup> **MP** 126 °C  
**BP** 412-414 °C **FP** 196 °C

Matrix	Cat. No.	Unit
NEAT	BPA-B-N-10MG	10 mg
10 mg/mL in MeOH	BPA-B-S	1 mL

### Bisphenol BP NEW

bis(4-Hydroxyphenyl)diphenylmethane

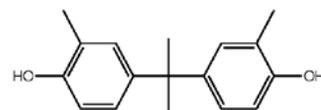


**CAS** 1844-01-5 **MF** C<sub>25</sub>H<sub>20</sub>O<sub>2</sub> **MW** 352.43  
**log Kow** 6.08 **PS** S **SG** 1.20 g/cm<sup>3</sup> **MP** 216-217 °C  
**BP** 508-510 °C **FP** 241 °C

Matrix	Cat. No.	Unit
NEAT	BPA-BP-N	50 mg
10 mg/mL in MeOH	BPA-BP-S	1 mL

### Bisphenol C NEW

2,2-bis(4-Hydroxy-3-methylphenyl)propane



**CAS** 79-97-0 **MF** C<sub>17</sub>H<sub>20</sub>O<sub>2</sub> **MW** 256.34  
**log Kow** 4.74 **PS** S **SG** 1.15 g/cm<sup>3</sup> **MP** 139 °C  
**BP** 390 °C **FP** >190 °C

Matrix	Cat. No.	Unit
NEAT	BPA-C-N	50 mg
10 mg/mL in MeOH	BPA-C-S	1 mL

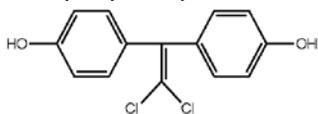
### Property Key

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

# Bisphenol Analogs

## Bisphenol C-dichloride **NEW**

Dihydroxymethoxychlor olefin

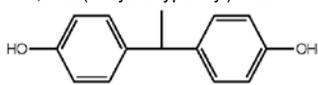


**CAS** 14868-03-2 **MF** C<sub>14</sub>H<sub>10</sub>Cl<sub>2</sub>O<sub>2</sub> **MW** 281.13  
**log Kow** 3.75 **PS** S **SG** 1.45 g/cm<sup>3</sup> **MP** 216 °C  
**BP** 395-398 °C **FP** >200 °C

Matrix	Cat. No.	Unit
NEAT	BPA-C2-N	20 mg
10 mg/mL in MeOH	BPA-C2-S	1 mL

## Bisphenol E **NEW**

1,1-bis(4-Hydroxyphenyl)ethane

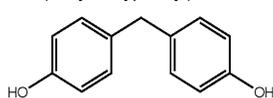


**CAS** 2081-08-5 **MF** C<sub>14</sub>H<sub>14</sub>O<sub>2</sub> **MW** 214.26  
**log Kow** 3.19 **PS** S **SG** 1.25 g/cm<sup>3</sup> **MP** 125 °C  
**BP** 350-370 °C **FP** >180 °C

Matrix	Cat. No.	Unit
NEAT	BPA-E-N	50 mg
10 mg/mL in MeOH	BPA-E-S	1 mL

## Bisphenol F

bis(4-Hydroxyphenyl)methane

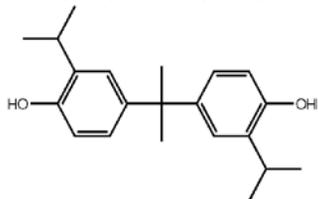


**CAS** 620-92-8 **MF** C<sub>13</sub>H<sub>12</sub>O<sub>2</sub> **MW** 200.23  
**log Kow** 2.91 **PS** S **SG** 1.21 g/cm<sup>3</sup> **MP** 163 °C  
**BP** 389-390 °C **FP** 193 °C

Matrix	Cat. No.	Unit
NEAT	BPA-F-N-10MG	10 mg
10 mg/mL in MeOH	BPA-F-S	1 mL

## Bisphenol G **NEW**

2,2-bis(4-Hydroxy-3-isopropylphenyl)propane

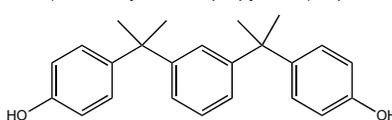


**CAS** 127-54-8 **MF** C<sub>21</sub>H<sub>28</sub>O<sub>2</sub> **MW** 312.45  
**log Kow** 6.55 **PS** S **SG** 1.05 g/cm<sup>3</sup> **MP** 98 °C  
**BP** 419-420 °C **FP** 185 °C

Matrix	Cat. No.	Unit
NEAT	BPA-G-N	20 mg
10 mg/mL in MeOH	BPA-G-S	1 mL

## Bisphenol M **NEW**

4,4-(1,3-Phenylenediisopropylidene)bisphenol

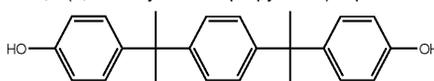


**CAS** 13595-25-0 **MF** C<sub>24</sub>H<sub>26</sub>O<sub>2</sub> **MW** 346.46  
**log Kow** 6.25 **PS** S **SG** 1.15 g/cm<sup>3</sup> **MP** 138 °C  
**BP** >495 °C **FP** >200 °C

Matrix	Cat. No.	Unit
NEAT	BPA-M-N	20 mg
10 mg/mL in MeOH	BPA-M-S	1 mL

## Bisphenol P

4,4-(1,4-Phenylenediisopropylidene)bisphenol

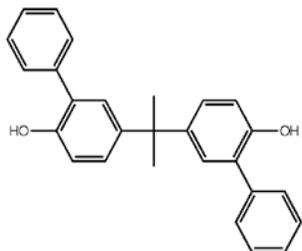


**CAS** 2167-51-3 **MF** C<sub>24</sub>H<sub>26</sub>O<sub>2</sub> **MW** 346.46  
**log Kow** 6.25 **PS** S **SG** 1.11 g/cm<sup>3</sup> **MP** 199-200 °C  
**BP** 514-515 °C **FP** 230 °C

Matrix	Cat. No.	Unit
NEAT	BPA-P-N	50 mg
10 mg/mL in MeOH	BPA-P-S	1 mL

## Bisphenol PH **NEW**

2,2-bis(2-Hydroxy-5-biphenyl)propane

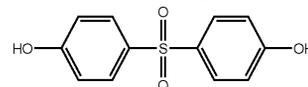


**CAS** 24038-68-4 **MF** C<sub>24</sub>H<sub>24</sub>O<sub>2</sub> **MW** 380.48  
**log Kow** 7.17 **PS** S **SG** 1.20 g/cm<sup>3</sup> **MP** 118 °C  
**BP** 567-568 °C **FP** 250 °C

Matrix	Cat. No.	Unit
NEAT	BPA-PH-N	20 mg
10 mg/mL in MeOH	BPA-PH-S	1 mL

## Bisphenol S

bis(4-Hydroxyphenyl) sulfone

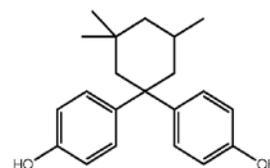


**CAS** 80-09-1 **MF** C<sub>12</sub>H<sub>10</sub>O<sub>4</sub>S **MW** 250.27  
**log Kow** 1.65 **PS** S **SG** 1.43 g/cm<sup>3</sup> **MP** 245-250 °C  
**BP** 505-506 °C **FP** 259 °C

Matrix	Cat. No.	Unit
NEAT	BPA-S-N	50 mg
10 mg/mL in MeOH	BPA-S-S	1 mL

## Bisphenol TMC **NEW**

1,1-bis(4-Hydroxyphenyl)-3,3,5-trimethylcyclohexane

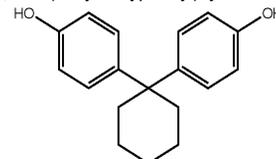


**CAS** 129188-99-4 **MF** C<sub>21</sub>H<sub>26</sub>O<sub>2</sub> **MW** 310.43  
**log Kow** 6.29 **PS** S **SG** 1.10 g/cm<sup>3</sup> **MP** 204-207 °C  
**BP** 450 °C **FP** 203 °C

Matrix	Cat. No.	Unit
NEAT	BPA-TMC-N-10MG	10 mg
10 mg/mL in MeOH	BPA-TMC-S	1 mL

## Bisphenol Z

1,1-bis(4-Hydroxyphenyl)cyclohexane



**CAS** 843-55-0 **MF** C<sub>18</sub>H<sub>20</sub>O<sub>2</sub> **MW** 268.35  
**log Kow** 5.00 **PS** S **SG** 1.17 g/cm<sup>3</sup> **MP** 189-192 °C  
**BP** 440-441 °C **FP** 207 °C

Matrix	Cat. No.	Unit
NEAT	BPA-Z-N	50 mg
10 mg/mL in MeOH	BPA-Z-S	1 mL



## Phthalate Background

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, pharmaceutical coatings, all types of packaging, inks, 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 dibutyl, 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 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 (2).

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 bis(2-ethylhexyl)phthalate (3). Bis(2-ethylhexyl)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.

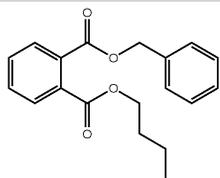
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1. S. Jobling et al., *Environ. Health Perspect.*, **103** (6), 582-587 (1995)
2. Chemical & Engineering News, vol. 89, no 22, page 28 (May 30 2011)
3. H. Fromme et al., *Water Research*, **36** (6), 1429-1438 (2002)



# Phthalates

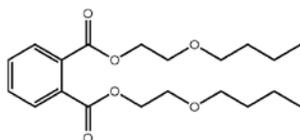
## Benzyl butyl phthalate



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 N/A 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

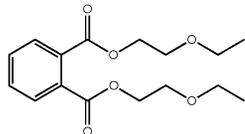
## bis(2-n-Butoxyethyl)phthalate



CAS 117-83-9 MF C<sub>20</sub>H<sub>30</sub>O<sub>6</sub> MW 366.45 PS L  
SG 1.06 g/cm<sup>3</sup> MP N/A BP 270 °C FP 205 °C

Matrix	Cat. No.	Unit
NEAT	J-112	100 mg

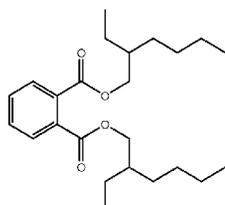
## bis(2-Ethoxyethyl)phthalate



CAS 605-54-9 MF C<sub>16</sub>H<sub>22</sub>O<sub>6</sub> MW 310.34 PS S  
SG 1.12 g/cm<sup>3</sup> MP 34 °C BP 345 °C FP N/A

Matrix	Cat. No.	Unit
NEAT	J-111	100 mg

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



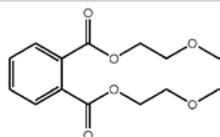
CAS 117-81-7 MF C<sub>24</sub>H<sub>38</sub>O<sub>4</sub> MW 390.56 PS L  
SG 0.98 g/cm<sup>3</sup> MP N/A BP 385 °C FP 218 °C

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

### 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)

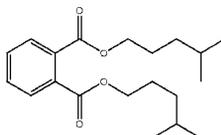
## bis(2-Methoxyethyl)phthalate



CAS 117-82-8 MF C<sub>14</sub>H<sub>18</sub>O<sub>6</sub> MW 282.29 PS L  
SG 1.17 g/cm<sup>3</sup> MP N/A BP 340 °C FP 185 °C

Matrix	Cat. No.	Unit
NEAT	J-106	100 mg

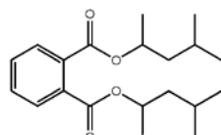
## bis(4-Methylpentyl)phthalate



CAS 71850-09-4 MF C<sub>20</sub>H<sub>30</sub>O<sub>4</sub> MW 334.45 PS S  
SG N/A BP N/A FP N/A

Matrix	Cat. No.	Unit
NEAT	PHTH-022N	100 mg
100 µg/mL in MeOH	PHTH-022S	1 mL

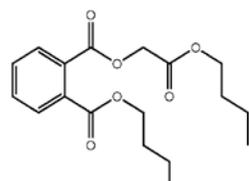
## bis(4-Methyl-2-pentyl)phthalate



CAS 84-63-9 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

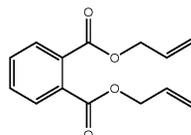
## 2-Butoxy-2-oxoethyl butyl phthalate



CAS 85-70-1 MF C<sub>18</sub>H<sub>24</sub>O<sub>6</sub> MW 336.38 PS L  
SG 1.10 g/cm<sup>3</sup> MP N/A BP 345 °C FP 199 °C

Matrix	Cat. No.	Unit
NEAT	J-115	100 mg

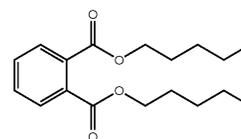
## Diallyl phthalate



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 N/A BP 165 °C FP 165 °C

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

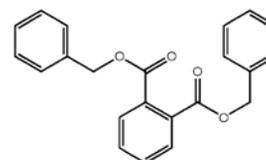
## Diamyl phthalate



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 342 °C FP 118 °C

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

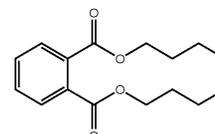
## Dibenzyl phthalate



CAS 523-31-9 MF C<sub>22</sub>H<sub>18</sub>O<sub>4</sub> MW 346.38 PS S  
SG 1.25 g/cm<sup>3</sup> MP 40-42 °C BP >400 °C  
FP >150 °C

Matrix	Cat. No.	Unit
NEAT	J-104	100 mg

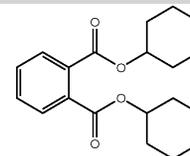
## Dibutyl phthalate



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 N/A BP 337-340 °C  
FP 157 °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

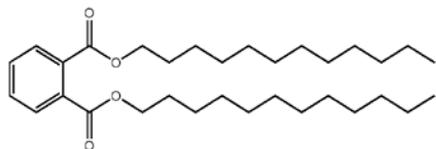


CAS 84-61-7 MF C<sub>20</sub>H<sub>26</sub>O<sub>4</sub> MW 330.42 PS S  
SG 1.14 g/cm<sup>3</sup> MP 61-66 °C BP 235 °C  
FP 207 °C

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

# Phthalates

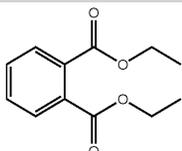
## Didodecyl phthalate



CAS 2432-90-8 MF C<sub>32</sub>H<sub>54</sub>O<sub>4</sub> MW 502.77  
PS L or S SG 1.05 g/cm<sup>3</sup> MP 21-23 °C BP 256 °C  
FP >200 °C

Matrix	Cat. No.	Unit
NEAT	PHTH-018N	100 mg
100 µg/mL in MeOH	PHTH-018S	1 mL

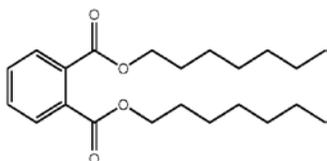
## Diethyl phthalate



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 N/A BP 298-299 °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

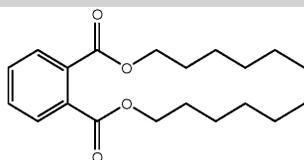
## Di-n-heptyl phthalate



CAS 3648-21-3 MF C<sub>22</sub>H<sub>34</sub>O<sub>4</sub> MW 362.50 PS L  
SG 0.99 g/cm<sup>3</sup> MP N/A BP 360 °C FP 113 °C

Matrix	Cat. No.	Unit
NEAT	PHTH-020N	100 mg
100 µg/mL in MeOH	PHTH-020S	1 mL

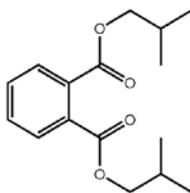
## Dihexyl phthalate



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 333 °C FP 177 °C

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

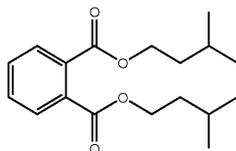
## Diisobutyl phthalate



CAS 84-69-5 MF C<sub>16</sub>H<sub>22</sub>O<sub>4</sub> MW 278.34 PS L  
SG 1.04 g/cm<sup>3</sup> MP N/A BP 327 °C FP 180 °C

Matrix	Cat. No.	Unit
NEAT	J-113	100 mg

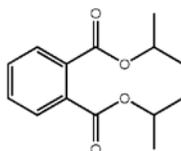
## Diisopentyl phthalate



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

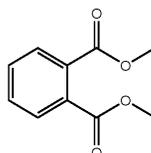
## Diisopropyl phthalate



CAS 605-45-8 MF C<sub>14</sub>H<sub>18</sub>O<sub>4</sub> MW 250.29 PS L  
MP N/A

Matrix	Cat. No.	Unit
NEAT	PHTH-019N	100 mg
100 µg/mL in MeOH	PHTH-019S	1 mL

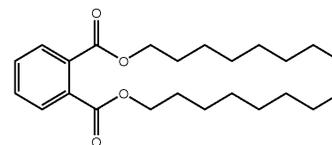
## Dimethyl phthalate



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 N/A BP 282-284 °C  
FP 156 °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

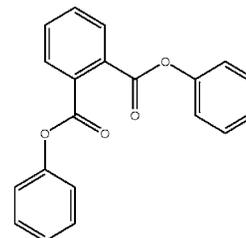
## Di-n-octyl phthalate



CAS 117-84-0 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 N/A FP 109 °C

Matrix	Cat. No.	Unit
NEAT	J-011	100 mg
100 µg/mL in MeOH	ALR-105S	1 mL
5 mg/mL in MeOH	AS-E0067	1 mL

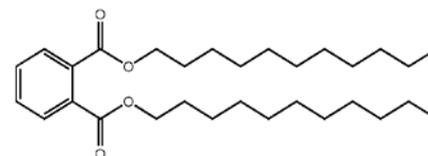
## Diphenyl phthalate



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

## Diundecyl phthalate



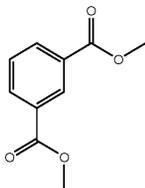
CAS 3648-20-2 MF C<sub>30</sub>H<sub>50</sub>O<sub>4</sub> MW 474.72 PS L  
SG 0.95 g/cm<sup>3</sup> MP N/A BP 472 °C FP 239 °C

Matrix	Cat. No.	Unit
NEAT	PHTH-021N	100 mg
100 µg/mL in MeOH	PHTH-021S	1 mL

# Iso, Tere, and Mono Phthalates

## Isophthalates

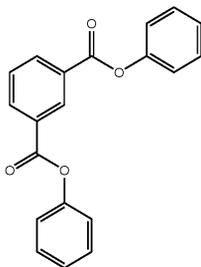
### Dimethyl isophthalate



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 138 °C

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

### Diphenyl isophthalate

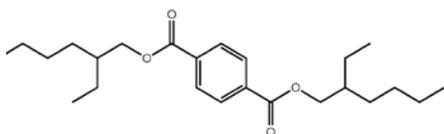


CAS 744-45-6 MF C<sub>20</sub>H<sub>14</sub>O<sub>4</sub> MW 318.32 PS S  
SG 1.24 g/cm<sup>3</sup> MP 136-138 °C FP 256 °C

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

## Terephthalates

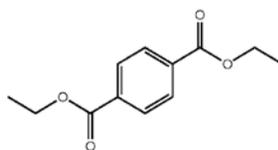
### bis(2-Ethylhexyl) terephthalate



CAS 6422-86-2 MF C<sub>24</sub>H<sub>38</sub>O<sub>4</sub> MW 390.56 PS L  
SG 0.99 g/cm<sup>3</sup> MP N/A BP 400 °C FP 238 °C

Matrix	Cat. No.	Unit
NEAT	J-121	100 mg

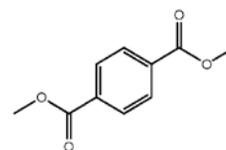
### Diethyl terephthalate



CAS 636-09-9 MF C<sub>12</sub>H<sub>14</sub>O<sub>4</sub> MW 222.24 PS S  
SG 1.15 g/cm<sup>3</sup> MP 43-47 °C BP 142 °C  
FP >150 °C

Matrix	Cat. No.	Unit
NEAT	J-123	100 mg

### Dimethyl terephthalate



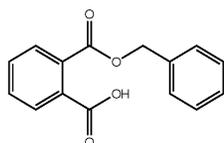
CAS 120-61-6 MF C<sub>10</sub>H<sub>10</sub>O<sub>4</sub> MW 194.18 PS S  
SG 1.36 g/cm<sup>3</sup> MP 139-141 °C BP 288 °C  
FP 151 °C

Matrix	Cat. No.	Unit
NEAT	J-101	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.

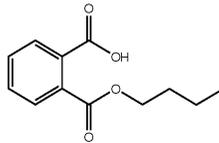
### Monobenzyl phthalate (mBzP)



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 93-94 °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

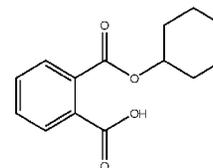
### Monobutyl phthalate (mBP)



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 65-66 °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 L  
SG 1.24 g/cm<sup>3</sup> MP N/A 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

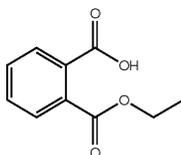
### Technical Note

AccuStandard offers 13 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.

Monophthalates continued on next page

## Monophthalates (Continued)

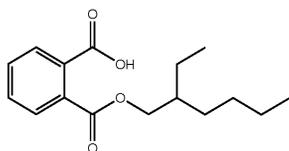
### Monoethyl phthalate (mEP)



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 46-48 °C BP 339 °C FP 135 °C

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

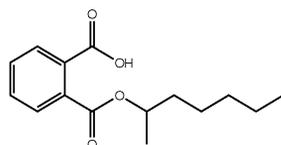
### Mono-2-ethylhexyl phthalate (mEHP)



CAS 4376-20-9 MF C<sub>16</sub>H<sub>22</sub>O<sub>4</sub> MW 278.34 PS L  
SG 1.09 g/cm<sup>3</sup> MP N/A BP 408 °C  
FP 144 °C

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

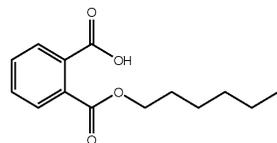
### Mono-2-heptyl phthalate



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

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

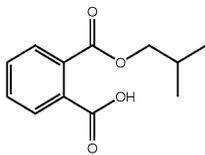
### Monoheptyl phthalate **NEW**



CAS 24539-57-9 MF C<sub>14</sub>H<sub>18</sub>O<sub>4</sub> MW 250.29 PS L  
SG 1.12 g/cm<sup>3</sup> MP N/A 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

### Monoisobutyl phthalate

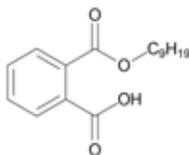


CAS 30833-53-5 MF C<sub>12</sub>H<sub>14</sub>O<sub>4</sub> MW 222.24 PS L  
SG 1.17 g/cm<sup>3</sup> MP N/A BP 356-357 °C  
FP 135 °C

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

### Monoisononyl phthalate

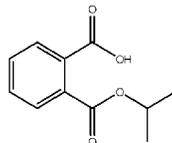
Mixture of C9 Isomers



CAS N/A MF C<sub>17</sub>H<sub>24</sub>O<sub>4</sub> MW 292.37 PS S  
MP 37-38 °C

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

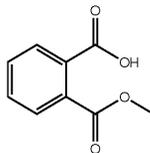
### Monoisopropyl phthalate



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

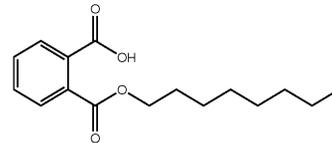
### Monomethyl phthalate



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 328 °C  
FP 135 °C

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

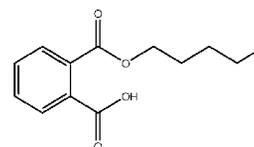
### Monooctyl phthalate



CAS 5393-19-1 MF C<sub>16</sub>H<sub>22</sub>O<sub>4</sub> MW 278.34 PS L  
SG 1.09 g/cm<sup>3</sup> MP N/A 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

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



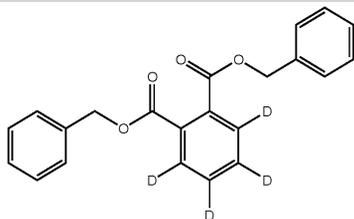
CAS 24539-56-8 MF C<sub>13</sub>H<sub>16</sub>O<sub>4</sub> MW 236.26 PS L  
SG 1.48 g/cm<sup>3</sup> MP N/A BP 376-377 °C  
FP 140 °C

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

# 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

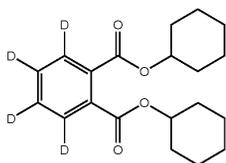
## Dibenzylphthalate-3,4,5,6-d<sub>4</sub>



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 <b>only as Set</b>	PHTH-D4-001N	5 mg
100 µg/mL in MeOH	PHTH-D4-001S	1 mL

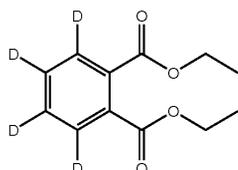
## Dicyclohexyl phthalate-3,4,5,6-d<sub>4</sub>



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> MP 65-67 °C FP 207 °C  
BP 426 °C

Matrix	Cat. No.	Unit
NEAT <b>only as Set</b>	PHTH-D4-004N	5 mg
100 µg/mL in MeOH	PHTH-D4-004S	1 mL

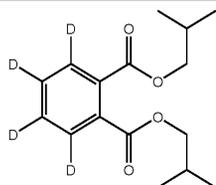
## Diethyl phthalate-3,4,5,6-d<sub>4</sub>



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 N/A FP 160 °C BP 298-299 °C

Matrix	Cat. No.	Unit
NEAT <b>only as Set</b>	PHTH-D4-005N	5 mg
100 µg/mL in MeOH	PHTH-D4-005S	1 mL

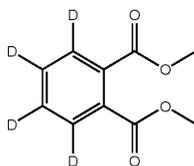
## Diisobutyl phthalate-3,4,5,6-d<sub>4</sub>



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 MP N/A BP 327 °C FP 109 °C

Matrix	Cat. No.	Unit
NEAT <b>only as Set</b>	PHTH-D4-003N	5 mg
100 µg/mL in MeOH	PHTH-D4-003S	1 mL

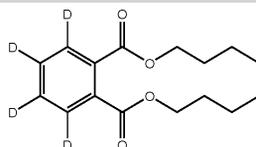
## Dimethyl phthalate-3,4,5,6-d<sub>4</sub>



CAS 93951-89-4 MF C<sub>10</sub>H<sub>6</sub>D<sub>4</sub>O<sub>4</sub> MW 198.21 PS L  
SG 1.20 g/cm<sup>3</sup> MP N/A BP 282 °C FP 295 °C

Matrix	Cat. No.	Unit
NEAT <b>only as Set</b>	PHTH-D4-007N	5 mg
100 µg/mL in MeOH	PHTH-D4-007S	1 mL

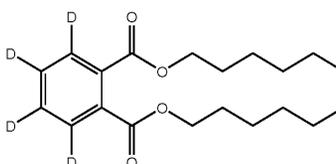
## Di-n-butyl phthalate-3,4,5,6-d<sub>4</sub>



CAS 93952-11-5 MF D<sub>16</sub>H<sub>18</sub>D<sub>4</sub>O<sub>4</sub> MW 282.37 PS L  
SG 1.07 g/cm<sup>3</sup> MP N/A BP 336 °C FP 340 °C

Matrix	Cat. No.	Unit
NEAT <b>only as Set</b>	PHTH-D4-002N	5 mg
100 µg/mL in MeOH	PHTH-D4-002S	1 mL

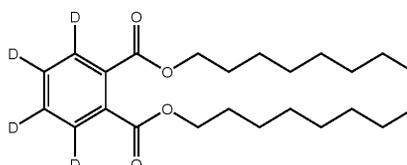
## Di-n-hexyl phthalate-3,4,5,6-d<sub>4</sub>



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> MP N/A BP 185-187 °C

Matrix	Cat. No.	Unit
NEAT <b>only as Set</b>	PHTH-D4-006N	5 mg
100 µg/mL in MeOH	PHTH-D4-006S	1 mL

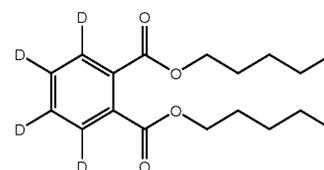
## Di-n-octyl phthalate-3,4,5,6-d<sub>4</sub>



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 N/A BP 384 °C FP 405 °C

Matrix	Cat. No.	Unit
NEAT <b>only as Set</b>	PHTH-D4-008N	5 mg
100 µg/mL in MeOH	PHTH-D4-008S	1 mL

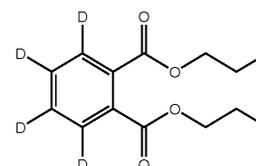
## Di-n-pentyl phthalate-3,4,5,6-d<sub>4</sub>



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 MP N/A BP 342 °C FP 118 °C

Matrix	Cat. No.	Unit
NEAT <b>only as Set</b>	PHTH-D4-009N	5 mg
100 µg/mL in MeOH	PHTH-D4-009S	1 mL

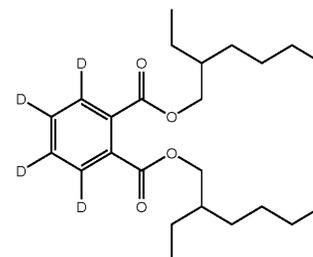
## Di-n-propyl phthalate-3,4,5,6-d<sub>4</sub>



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> MP N/A BP 317-318 °C  
FP >110 °C

Matrix	Cat. No.	Unit
NEAT <b>only as Set</b>	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 N/A BP 384 °C FP 207 °C

Matrix	Cat. No.	Unit
NEAT <b>only as Set</b>	PHTH-D4-011N	5 mg
100 µg/mL in MeOH	PHTH-D4-011S	1 mL

## Set includes 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.

# Phthalates - Industrial

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)

## Solutions in 1 mL

Compound	CAS No.	Conc.	Matrix	Cat. No.
<b>Benzyl 2-ethylhexyl phthalate</b>	27215-22-1	100 mg	NEAT	ALR-165N
		100 µg/mL	MeOH	ALR-165S
<b>n-Butyl benzyl phthalate</b>	85-68-7	10 mg	NEAT	PHTH-014N
		100 µg/mL	MeOH	PHTH-014S
<b>Butyl cyclohexyl phthalate</b> (Tech mix)	84-64-0	100 mg	NEAT	J-122
<b>n-Butyl isobutyl phthalate</b> (Tech mix)		10 mg	NEAT	PHTH-013N
		100 µg/mL	MeOH	PHTH-013S
<b>Butyl octyl phthalate</b> (Tech mix)	84-78-6	100 mg	NEAT	J-001
<b>Decyl octyl phthalate</b> (Tech mix)		10 mg	NEAT	PHTH-012N
		100 µg/mL	MeOH	PHTH-012S
<b>Didecyl phthalate</b>	84-77-5	100 mg	NEAT	J-120
<b>Diisodecyl phthalate</b> (Tech mix)	26761-40-0	100 mg	NEAT	ALR-101N
		100 µg/mL	MeOH	ALR-101S
<b>Diisooheptyl phthalate</b>	71888-89-6	100 mg	NEAT	PHTH-017N
		100 µg/mL	MeOH	PHTH-017S
<b>Diisohexyl phthalate</b> (Tech mix)	68515-50-4	100 mg	NEAT	J-007
<b>Diisononyl phthalate</b> (Tech mix) [C8 to C10 Isomers]	68515-48-0	100 mg	NEAT	ALR-102N
		100 µg/mL	MeOH	ALR-102S
<b>Diisooctyl phthalate</b> (Tech mix) [C8 Isomers]	27554-26-3	100 mg	NEAT	ALR-103N
		100 µg/mL	MeOH	ALR-103S
<b>Dinonyl phthalate</b>	84-76-4	100 mg	NEAT	J-105
<b>Hexyl 2-ethylhexyl phthalate</b> (Tech mix)	75673-16-4	100 mg	NEAT	J-016
<b>Isobutyl benzyl phthalate</b> (Tech mix)		10 mg	NEAT	PHTH-015N
		100 µg/mL	MeOH	PHTH-015S
<b>Isobutyl cyclohexyl phthalate</b> (Tech mix)	5334-09-8	100 mg	NEAT	J-014
<b>n-Octyl n-decyl phthalate</b> (Tech mix)	119-07-3	100 mg	NEAT	J-015
<b>Pentyl isopentyl phthalate</b> (Tech mix)	84777-06-0	10 mg	NEAT	PHTH-016N
		100 µg/mL	MeOH	PHTH-016S



# Phthalate Replacements

World-wide concern over environmental and health-related factors associated with phthalates has led to restrictions of use in a wide array of products. This has resulted in the plastics industry generating a variety of alternatives.

In response, AccuStandard has developed a phthalate replacement product line comprised of 42 compounds representing 18 chemical classes.



Compound	CAS No.	Concentration	Cat. No.	Unit
<b>Azelaic Acid Derivatives</b>				
Diisodecyl azelate	28472-97-1	1000 µg/mL in Acetone	PLAS-PL-075S-A	1 mL
Diisooctyl azelate	26544-17-2	1000 µg/mL in Acetone	PLAS-PL-076S-A	1 mL
Dimethyl azelate	1732-10-1	1000 µg/mL in Acetone	PLAS-PL-077S-A	1 mL
Di-n-hexyl azelate	109-31-9	1000 µg/mL in Acetone	PLAS-PL-078S-A	1 mL
Di(2-ethyl hexyl) azelate	103-24-2	1000 µg/mL in Acetone	PLAS-PL-081S-A	1 mL
<b>Adipic Acid Derivatives</b>				
Di(tridecyl) adipate	16958-92-2	1000 µg/mL in Acetone	PLAS-PL-079S-A	1 mL
Di(n-heptyl, n-nonyl) adipate	68515-75-3	1000 µg/mL in Hexane	PLAS-PL-080S	1 mL
Diisobutyl adipate	141-04-8	1000 µg/mL in Hexane	PLAS-PL-082S	1 mL
Diisodecyl adipate	27178-16-1	1000 µg/mL in Hexane	PLAS-PL-083S	1 mL
<b>Dimer Acid Derivatives</b>				
bis(2-Hydroxyethyl) dimerate	68855-78-7	1000 µg/mL in Hexane	PLAS-PL-084S	1 mL
<b>Epoxy Derivatives</b>				
Epoxidized linseed oil	8016-11-3	1000 µg/mL in Toluene	PLAS-PL-085S-T	1 mL
2-Ethylhexyl epoxy tallate	61789-01-3	1000 µg/mL in Hexane	PLAS-PL-086S	1 mL
<b>Fumaric Acid Derivative</b>				
Dibutyl fumarate	105-75-9	1000 µg/mL in Hexane	PLAS-PL-087S	1 mL
<b>Glycerol Derivative</b>				
Glycerol triacetate	102-76-1	1000 µg/mL in Hexane	PLAS-PL-088S	1 mL
<b>Isobutyrate Derivative</b>				
2,2,4-Trimethyl-1,3-pentanediol-diisobutyrate	6846-50-0	1000 µg/mL in Hexane	PLAS-PL-089S	1 mL
<b>Maleic Acid Derivatives</b>				
Di(2-ethylhexyl)maleate (Diocetyl maleate)	142-16-5	1000 µg/mL in Hexane	PLAS-PL-090S	1 mL
Di-n-butyl maleate	105-76-0	1000 µg/mL in Hexane	PLAS-PL-091S	1 mL
<b>Mellitates</b>				
Tricapryl trimellitate	27251-75-8	1000 µg/mL in Hexane	PLAS-PL-092S	1 mL
Triisodecyl trimellitate	36631-30-8	1000 µg/mL in Hexane	PLAS-PL-093S	1 mL
Tri(n-octyl, n-decyl) trimellitate	67989-23-5	1000 µg/mL in Hexane	PLAS-PL-094S	1 mL
<b>Myristate</b>				
Isopropyl myristate	110-27-0	1000 µg/mL in Hexane	PLAS-PL-095S	1 mL
<b>Oleic Acid Derivatives</b>				
Glycerol monooleate	25496-72-4	1000 µg/mL in Hexane	PLAS-PL-096S	1 mL
Methyl oleate	112-62-9	1000 µg/mL in Hexane	PLAS-PL-097S	1 mL
n-Propyl oleate	111-59-1	1000 µg/mL in Hexane	PLAS-PL-098S	1 mL
Tetrahydrofurfuryl oleate	5420-17-7	1000 µg/mL in Hexane	PLAS-PL-099S	1 mL
<b>Palmitic Acid derivative</b>				
Isopropyl palmitate	142-91-6	1000 µg/mL in Hexane	PLAS-PL-100S	1 mL
<b>Benzoic Acid Derivatives</b>				
Di(propylene glycol) dibenzoate	27138-31-4	1000 µg/mL in Hexane	PLAS-PL-101S	1 mL
Polyethylene glycol 200 dibenzoate	9004-86-8	1000 µg/mL in Hexane	PLAS-PL-102S	1 mL
<b>Phosphoric Acid Derivatives</b>				
t-Butylphenyl diphenyl phosphate	56803-37-3	1000 µg/mL in Hexane	PLAS-PL-103S	1 mL
tris(2-Butoxyethyl) phosphate	78-51-3	1000 µg/mL in Hexane	PLAS-PL-104S	1 mL
<b>Ricinoleic Acid Derivatives</b>				
Butyl ricinoleate	151-13-3	1000 µg/mL in Hexane	PLAS-PL-105S	1 mL
Glyceryl (triacyetyl) ricinoleate	101-34-8	1000 µg/mL in Hexane	PLAS-PL-106S	1 mL
n-Butyl acetyl ricinoleate	140-04-5	1000 µg/mL in Hexane	PLAS-PL-107S	1 mL
Propylene glycol ricinoleate	26402-31-3	1000 µg/mL in Hexane	PLAS-PL-108S	1 mL
<b>Succinic acid Derivatives</b>				
Diethyl succinate	123-25-1	1000 µg/mL in Hexane	PLAS-PL-109S	1 mL
<b>Sulfonic acid Derivatives</b>				
o,p-Toluenesulfonamide	8013-74-9	1000 µg/mL in Hexane	PLAS-PL-110S	1 mL
N-Ethyl o,p-toluenesulfonamide	8047-99-2	1000 µg/mL in Hexane	PLAS-PL-111S	1 mL
<b>Stearic acid Derivatives</b>				
Ethylene glycol monostearate	111-60-4	1000 µg/mL in Hexane	PLAS-PL-112S	1 mL
Isopropyl isostearate	68171-33-5	1000 µg/mL in Hexane	PLAS-PL-113S	1 mL
n-Butyl stearate	123-95-5	1000 µg/mL in Hexane	PLAS-PL-114S	1 mL
Glycerol monostearate	31566-31-1	1000 µg/mL in Toluene	PLAS-PL-115S-T	1 mL
Propylene glycol monostearate	1323-39-3	1000 µg/mL in Hexane	PLAS-PL-116S	1 mL



See Plasticizer section, pages 17-24, for structures, molecular formulas and molecular weights.

# Phthalates EPA Methods

## EPA Methods - Phthalate Standards

### Method 506 Phthalate Esters by PID

#### Phthalate Esters

**M-506** 1 x 1 mL  
**M-506-PAK** 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-n-octyl phthalate
Di-n-butyl phthalate	

**M-506-QC** 1 x 1 mL  
**M-506-QC-PAK** 5 x 1 mL  
 At stated conc. (mg/mL) in MeOH 7 comps.

Benzyl butyl phthalate	0.25	bis(2-Ethylhexyl)adipate	1.2
Dimethyl phthalate	0.1	bis(2-Ethylhexyl)phthalate	0.25
Diethyl phthalate	0.1	Di-n-octyl phthalate	0.65
Di-n-butyl phthalate	0.1		

### Method 606 Phthalate Esters by GC/ECD

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

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



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### Method 8060 Phthalate Esters by GC/ECD

#### Phthalate Esters

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

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

**M-8060-QC** 1 x 1 mL  
**M-8060-QC-PAK** 5 x 1 mL  
 At stated conc. (mg/mL) in MeOH 6 comps.

Benzyl butyl phthalate	0.1	Di-n-butyl phthalate	0.25
Diethyl phthalate	0.25	Di-n-octyl phthalate	0.5
Dimethyl phthalate	0.25	bis(2-Ethylhexyl)phthalate	0.5

### Method 8061A Phthalate Esters by GC/ECD

#### Phthalate Esters

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

bis(2-n-Butoxyethyl)phthalate	Dimethyl phthalate
Butyl benzyl phthalate	Dinonyl phthalate
Diamyl phthalate	Di-n-octyl phthalate
Di-n-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** 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-n-butyl phthalate	Di-n-octyl phthalate

#### Matrix Spike Solution

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

Butyl benzyl phthalate	bis(2-Ethylhexyl)phthalate
------------------------	----------------------------

#### Internal Standard

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

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

Dibenzyl phthalate	Diphenyl phthalate
Diphenyl isophthalate	

# Dyes and Breakdown Products

Dyes and colorant products are one of the largest categories of plastic additives and are also used in textiles, leather goods, food and personal care products. They are used for both aesthetic purposes and to alter physical properties of the product, such as to repel light. Many dyes and their breakdown products have been determined to have both adverse health properties and adverse environmental properties, and as such, are being increasingly regulated. EU Directives 67/548/EEC and 2002/61/EC and 76/768/EEC are the most far-reaching regulations for this class of compounds.

## EU Directive 67/548/EEC Dyes

### Criterion #22 Regulated Dyes - Carcinogenic Each in 100 µg/mL in MeOH

Unit	Cat. No.	Unit
Disperse Blue 1	DYE-001S	1 mL
Disperse Orange 11	DYE-002S	1 mL
Disperse Yellow 3	DYE-003S	1 mL
Basic Violet 14	DYE-012S	1 mL
Direct Black 38	DYE-013S	1 mL
Direct Blue 6	DYE-014S	1 mL

### Criterion #23 Regulated Dye - Disperse dyes, Sensitizing Each in 100 µg/mL in MeOH

Unit	Cat. No.	Unit
Disperse Blue 3	DYE-004S	1 mL
Disperse Orange 1	DYE-005S	1 mL
Disperse Orange 3	DYE-006S	1 mL
Disperse Red 1	DYE-007S	1 mL
Disperse Yellow 9	DYE-008S	1 mL
Disperse Blue 35	DYE-009S	1 mL
Disperse Blue 124	DYE-010S	1 mL
Disperse Orange 37	DYE-011S	1 mL
Disperse Blue 7	DYE-015S	1 mL
Disperse Blue 26	DYE-016S	1 mL
Disperse Blue 102	DYE-017S	1 mL
Disperse Red 11	DYE-018S	1 mL
Disperse Red 17	DYE-019S	1 mL

## EU Directive 2002/61/EC Determination of Aryl Amine Breakdown Products in Azo Dyes

### Individual Aryl Amine Standards

Compound	100 µg/mL in AcCN 1 mL	1000 µg/mL in AcCN 1 mL	10 µg/mL in Ethyl acetate for 10 mL 10 mL
<i>o</i> -Aminoazotoluene	RAC-01	RAC-01-10X	RAC-01-EA-0.1X-10ML
4-Aminobiphenyl	RAC-02	RAC-02-10X	RAC-02-EA-0.1X-10ML
2-Amino-4-nitrotoluene	RAC-03	RAC-03-10X	RAC-03-EA-0.1X-10ML
Benzidine †	RAC-04	RAC-04-10X	RAC-04-EA-0.1X-10ML
4-Chloroaniline	RAC-05	RAC-05-10X	RAC-05-EA-0.1X-10ML
4-Chloro- <i>o</i> -toluidine	RAC-06	RAC-06-10X	RAC-06-EA-0.1X-10ML
<i>p</i> -Cresidine	RAC-07	RAC-07-10X	RAC-07-EA-0.1X-10ML
2,4-Diaminoanisole *	RAC-08	RAC-08-10X	RAC-08-EA-0.1X-10ML
4,4'-Diaminodiphenylmethane	RAC-09	RAC-09-10X	RAC-09-EA-0.1X-10ML
2,4-Diaminotoluene	RAC-10	RAC-10-10X	RAC-10-EA-0.1X-10ML
3,3'-Dichlorobenzidine †	RAC-11	RAC-11-10X	RAC-11-EA-0.1X-10ML
3,3'-Dimethoxybenzidine †	RAC-12	RAC-12-10X	RAC-12-EA-0.1X-10ML
3,3'-Dimethylbenzidine †	RAC-13	RAC-13-10X	RAC-13-EA-0.1X-10ML
3,3'-Dimethyl-4,4'-diaminodiphenylmethane	RAC-14	RAC-14-10X	RAC-14-EA-0.1X-10ML
4,4'-Methylenebis(2-chloroaniline)	RAC-15	RAC-15-10X	RAC-15-EA-0.1X-10ML
2-Naphthylamine	RAC-16	RAC-16-10X	RAC-16-EA-0.1X-10ML
4,4'-Oxydianiline	RAC-17	RAC-17-10X	RAC-17-EA-0.1X-10ML
4,4'-Thiodianiline	RAC-18	RAC-18-10X	RAC-18-EA-0.1X-10ML
<i>o</i> -Toluidine	RAC-19	RAC-19-10X	RAC-19-EA-0.1X-10ML
2,4,5-Trimethylaniline	RAC-20	RAC-20-10X	RAC-20-EA-0.1X-10ML
<i>p</i> -Aminoazobenzene	RAC-21	RAC-21-10X	RAC-21-EA-0.1X-10ML
2-Aminobiphenyl	RAC-22	RAC-22-10X	RAC-22-EA-0.1X-10ML
<i>o</i> -Anisidine	RAC-23	RAC-23-10X	RAC-23-EA-0.1X-10ML
3-Chloro- <i>o</i> -toluidine	RAC-24	RAC-24-10X	RAC-24-EA-0.1X-10ML

#### RAC-R1-SET 24 x 1 mL

100 µg/mL \* In the form of the Sulfate hydrate 171 µg/mL in Pyridine (100 µg/mL as the base)

#### RAC-R1-10X-SET 24 x 1 mL

1000 µg/mL \* In the form of the Sulfate hydrate 1,710 µg/mL in Pyridine (1000 µg/mL as the base)

† Subject to oxidation

### Carcinogenic Aryl Amine Mix

**AE-00049-R1** 1 x 1 mL  
10 µg/mL in Ethyl acetate 23 comps.

**AE-00049-R1-10ML** 1 x 10 mL  
10 µg/mL in Ethyl acetate 23 comps.

*o*-Aminoazotoluene  
4-Aminobiphenyl  
2-Amino-4-nitrotoluene  
Benzidine †  
4-Chloroaniline  
4-Chloro-*o*-toluidine  
*p*-Cresidine  
4,4'-Diaminodiphenylmethane  
2,4-Diaminotoluene  
3,3'-Dichlorobenzidine †  
3,3'-Dimethoxybenzidine †  
3,3'-Dimethylbenzidine †  
3,3'-Dimethyl-4,4'-diaminodiphenylmethane  
4,4'-Methylenebis(2-chloroaniline)  
2-Naphthylamine  
4,4'-Oxydianiline  
4,4'-Thiodianiline  
*o*-Toluidine  
2,4,5-Trimethylaniline  
*p*-Aminoazobenzene  
2-Aminobiphenyl  
*o*-Anisidine  
3-Chloro-*o*-toluidine

### Internal Standards

**RAC-IS** 1 x 1 mL  
1000 µg/mL in AcCN

**RAC-IS-EA** 1 x 1 mL  
1000 µg/mL in Ethyl acetate

3,3',5,5'-Tetramethylbenzidine †

**AE-00049-SET** 2 x 1 mL  
AE-00049-R1, RAC-08

## A

Accelerator BBTS 1  
 Accelerator CBTS 1  
 Accelerator EZ & EZ-SP 1  
 Accelerator MBT, MBT/MG 1  
 Activator OT Urea 1  
 Akrochem Antiox 12 2  
 Akrochem® Ceresin Wax 25  
 Akrochem® NIBUD 11  
 Akrochem® Retarder BAX 25  
 Akrofax™ A 28  
 Akrofax™ B 28  
 Akroform ETU-22 PM 1  
 Akrowax™ 195 11  
 Alkanox® P27 3  
 Alkanox® TNPP 3  
 p-Aminoazobenzene 41  
 2-Aminobiphenyl 41  
 4-Aminobiphenyl 41  
 2-Amino-4-nitrotoluene 41  
 o-Aminoazotoluene 41  
 o-Anisidine 41  
 Anox® PP18 3  
 Antioxidant 60 3  
 Antioxidant S 3  
 Aroclor® 1016 14  
 Aroclor® 1221 14  
 Aroclor® 1232 14  
 Aroclor® 1242 14  
 Aroclor® 1248 15  
 Aroclor® 1254 15  
 Aroclor® 1260 15  
 Aroclor® 1262 15  
 Aroclor® 1268 15  
 Aroclor® 5432 15  
 Aroclor® 5442 15  
 Aroclor® 5460 15  
 Aroclor® 6050 15

## B

Basic Violet 14 41  
 Benzidine 41  
 Benzoflex® 2-45 17  
 2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol 3  
 Benzyl 2-ethylhexyl phthalate 38  
 Benzyl benzoate 40  
 Benzyl butyl phthalate 33  
 bis(2-n-Butoxyethyl)phthalate 33  
 Bisphenol A (BPA) 17, 30  
 Bisphenol A diglycidyl ether (BADGE) 30  
 Bisphenol AF 30  
 Bisphenol AP 30  
 Bisphenol B 30  
 Bisphenol BP 30  
 Bisphenol C 30  
 Bisphenol C-dichloride 31  
 Bisphenol E 31  
 Bisphenol F 31  
 Bisphenol G 31  
 Bisphenol M 31  
 Bisphenol P 31  
 Bisphenol PH 31  
 Bisphenol S 31  
 Bisphenol TMC 31  
 Bisphenol Z 31  
 BLS® 234 3  
 BLS® 292 3  
 BLS® 1622 3  
 BLS® 1944 4  
 BNX 1077 4  
 BNX 1225 4  
 tris(2-Butoxyethyl) phosphate 39  
 2-tert-Butyl-6-(5-chloro-2H-benzotriazol-2-yl)-4-methylphenol 4  
 Butyl cyclohexyl phthalate 38  
 4,4'-Butylidenebis(6-tert-butyl-m-cresol) 4

n-Butyl acetyl ricinoleate 17, 39  
 n-Butyl benzyl phthalate 38  
 n-Butyl isobutyl phthalate 38  
 Butyl octyl phthalate 38  
 t-Butylphenyl diphenyl phosphate 39  
 Butyl ricinoleate 17, 39  
 n-Butyl stearate 17, 39

## C

Celogen® AZ 12  
 Celogen® RA 12  
 Celogen® SD-125 17  
 4-Chloroaniline 41  
 3-Chloro-o-toluidine 41  
 4-Chloro-o-toluidine 41  
 Citroflex 2 17  
 Citroflex 4 17  
 Citroflex A-2 17  
 Citroflex A-4 18  
 Citroflex B-6 18  
 CPW-100 12  
 p-Cresidine 41  
 Cresyl diphenyl phosphate 18  
 Cure-Rite® IBT 1  
 Cyanomethyl dodecyl trithiocarbonate 25  
 Cyanomethyl methyl(phenyl)carbamo-dithioate 26  
 2-Cyano-2-propyl benzodithioate 25  
 4-Cyano-4-[(dodecylsulfanylthiocarbonyl)sulfanyl]pentanoic acid 25  
 4-Cyano-4-(phenylcarbonothioylthio)pentanoic acid 25  
 2-Cyano-2-propyl dodecyl trithiocarbonate 25  
 Cyanox® 425 4  
 Cyanox® 1212 4  
 Cyanox® 1790 4  
 Cyanox® 2246 4  
 Cyanox® LTDP 5  
 Cyanox® STDP 5

## D

Decabromodiphenyl ether 15  
 Decyl octyl phthalate 38  
 Di(2-ethylhexyl) azelate 18, 39  
 Di(2-ethylhexyl) maleate 18, 39  
 Diallyl phthalate 33  
 Diamyl phthalate 33  
 2,4-Diaminoanisole 41  
 4,4'-Diaminodiphenylmethane 41  
 2,4-Diaminotoluene 41  
 N,N'-Dibutylthiourea 5  
 Dibenzylhydroxylamine 5  
 Dibenzyl phthalate 33  
 Dibutyl fumarate 18, 39  
 Dibutyl phthalate 18, 33  
 Dibutyl sebacate 18  
 3,3'-Dichlorobenzidine 41  
 Dicyclohexyl phthalate 33  
 Dicyclohexyl phthalate-3,4,5,6-d4 37  
 Didecyl phthalate (Tech Mix) 38  
 Didodecyl phthalate 34  
 Diethyl 3,5-di-tert-butyl-4-hydroxybenzylphosphonate 5  
 Diethyl adipate 18  
 Diethyl phthalate 34  
 Diethyl phthalate-3,4,5,6-d4 37  
 Diethyl succinate 18, 39  
 Diethyl terephthalate 35  
 N,N'-Diethylthiourea 5  
 Dihexyl phthalate 34  
 Diisobutyl adipate 19, 39  
 Diisobutyl phthalate 34  
 Di-isobutyl phthalate-3,4,5,6-d4 37  
 Diisooctyl azelate 19, 39  
 Diisodecyl adipate 18, 39  
 Diisodecyl azelate 19, 39  
 Diisodecyl phthalate 38  
 Diisoheptyl phthalate 38  
 Diisohexyl phthalate 38  
 Diisononyl phthalate (C8 to C10 Isomers) 38

Diisooctyl phthalate (C8 Isomers) 19, 38  
 Diisopentyl phthalate 34  
 Diisopropyl phthalate 34  
 3,3'-Dimethoxybenzidine 41  
 3,3'-Dimethylbenzidine 41  
 3,3'-Dimethyl-4,4'-diaminodiphenylmethane 41  
 Dimethyl adipate 19  
 Dimethyl azelate 19, 39  
 Dimethyl isophthalate 35  
 Dimethyl phthalate 34  
 Dimethyl phthalate-3,4,5,6-d4 37  
 Dimethyl sebacate 19  
 Dimethyl terephthalate 35  
 Di-n-butyl maleate 18, 39  
 Di-n-butyl phthalate-3,4,5,6-d4 37  
 Di(n-heptyl, n-nonyl) adipate 18, 39  
 Di-n-heptyl phthalate 34  
 Di-n-hexyl azelate 18, 39  
 Di-n-hexyl phthalate-3,4,5,6-d4 37  
 Di-n-octyl phthalate 34  
 Di-n-octyl phthalate-3,4,5,6-d4 37  
 Dinonyl phthalate 38  
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