



At-a-Glance  
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from Restek

# CLP OLM 04.1 (04.2) Pesticides Reference Materials

The US Environmental Protection Agency (EPA) recently has awarded contracts for organic low medium (OLM) concentration samples within the Superfund program under the 04.2 Statement of Work. Restek has prepared calibration and surrogate solutions to meet these requirements.

During development of these products, one basic premise was understood—we would produce the fewest number of solutions possible while maintaining stability and maximum shelf life by avoiding chemical interactions. We carefully reviewed the 04.2 Statement of Work and determined that the identical products specified in 04.1 also will be required for the 04.2 revision. The products listed here are a result of this work. Call 800-356-1688 or 814-353-1300, ext. 3, to order your CLP OLM 04.1 (04.2) pesticides reference materials today.

**5-packs, 10-packs, and data packs available on ALL products.**

*Complies with stringent audits and saves money—built-in discounts.*

## Pesticide Target Compounds

Feature	Benefit
Pesticide Calibration Mixtures—Restek calibration mixtures are offered in two different concentrations:	<i>Maximum value and ease of dilution.</i>
Pesticide Mix A (cat.# 32003) Pesticide Mix B (cat.# 32004) 8–16µg/mL	<i>Used to prepare working solutions at 16 x CRQL, 4 x CRQL, and CRQL by serial dilution.</i>
Pesticide Mix A (cat.# 32297) Pesticide Mix B (cat.# 32298) 5–10µg/mL	<i>Used to prepare working solutions at 20 x CRQL, 4 x CRQL, and CRQL by direct dilution.</i>
Pesticide Mix AB #2 (cat.# 32292) 8 and 16µg/mL	<i>Used to prepare single working solution containing all pesticides at 16 x CRQL, 4 x CRQL, and CRQL by serial dilution from a single ampul.</i>

## CLP Pesticide Surrogate Mixes

Feature	Benefit
Combined surrogate and individual surrogate mixtures available.	<i>Provides greatest versatility in preparing working solutions.</i>
Pesticide Surrogate Mix DCB and TCMX at 200ppm (cat.# 32000)	<i>Highest concentration possible in acetone. Requires sonication before use.</i>
Individual surrogates at 200µg/mL 1mL and 5mL ampuls	<i>DCB and TCMX available as individual solutions to customize working solutions.</i>

## CLP Aroclor®, Chlordane, and Toxaphene Mixes

Feature	Benefit
Two concentrations available: 1000ppm in hexane or 200ppm in isooctane	<i>High concentrations for maximum value and versatility.</i>
Aroclor® 1016/1260 1000ppm ea. (cat.# 32039)	<i>One mixture containing both materials—fewer ampules required.</i>
All other Aroclor® mixes	<i>Individual mixtures for correct identification and quantitation.</i>
Toxaphene: 1000ppm and 5000ppm	<i>Easily prepare high-concentration working solutions.</i>
Chlordane (technical): 1000ppm and 5000ppm	<i>Easily prepare high-concentration working solutions.</i>

## Pesticide and PCB Kits

Feature	Benefit
CLP Pesticides and PCB kits	<i>Built-in discounts and convenient mixture groups that are frequently required—in one handy kit.</i>



800-356-1688

814-353-1300

[www.restekcorp.com](http://www.restekcorp.com)



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## CLP Pesticide Mixtures—Individual Surrogates

### 04.1, 3/90, 4/89, and 2/88 SOW

#### 2,4,5,6-Tetrachloro-m-xylene Mix

200µg/mL in acetone

1mL/ampul	Each	5-pk.	10-pk.
	32027	32027-510	
w/data pack	32027-500	32027-520	32127
5mL/ampul	Each	5-pk.	10-pk.
	32028	32028-510	
w/data pack	32028-500	32028-520	32128

#### Decachlorobiphenyl Mix

200µg/mL in acetone

1mL/ampul	Each	5-pk.	10-pk.
	32029	32029-510	
w/data pack	32029-500	32029-520	32129
5mL/ampul	Each	5-pk.	10-pk.
	32030	32030-510	
w/data pack	32030-500	32030-520	32130

### Technical tips for working with solutions containing decachlorobiphenyl:

Decachlorobiphenyl has poor solubility in most organic solvents. The maximum concentration that can be prepared in acetone, hexane, or isooctane is 200µg/mL. Temperature will affect the solubility as well. Storing solutions at reduced temperatures will cause the decachlorobiphenyl to precipitate.

It's crucial that these products be sonicated for a minimum of 15 minutes prior to opening the ampul. Because each ultrasonic bath operates at different energy levels, the 15 minutes must be used as a guideline only. Longer sonication time will not affect the product quality.

It is important to remember this applies to working solutions prepared in your laboratory as well. The amount of compound that precipitates is dependent upon concentration AND temperature. If you store your standards at a temperature lower than 4°C (even dilute solutions), allow extra sonication time.

*For best results, sonicate the ampul before each use.*

## CLP GPC Calibration Mix

Qualitative mixture useful for determining GPC dump/collect times. Data packs are not available. The compounds are dissolved in methylene chloride at the concentrations listed.

#### CLP GPC Calibration Mix

bis(2-ethylhexyl)phthalate	10mg/mL
corn oil	250
methoxychlor	2.0
perylene	0.2
sulfur	0.8

In methylene chloride

1mL/ampul	Each	5-pk.	10-pk.
	32019	32019-510	32119
5mL/ampul	Each	5-pk.	10-pk.
	32023	32023-510	32123

#### Revised GPC Calibration Mix

bis(2-ethylhexyl)phthalate	5mg/mL
corn oil	250
methoxychlor	1.0
perylene	0.2
sulfur	0.8

In methylene chloride

1mL/ampul	Each	5-pk.	10-pk.
	32041	32041-510	32141
5mL/ampul	Each	5-pk.	10-pk.
	32042	32042-510	32142

# CLP OLM 04.1 (04.2) Pesticides Reference Materials

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## CLP Pesticide Mixtures

### 04.1 and 3/90 SOW

#### Pesticide Surrogate Mix

decachlorobiphenyl 2,4,5,6-tetrachloro-*m*-xylene

200µg/mL ea. in acetone, 1mL/ampul

	Each	5-pk.	10-pk.
	32000	32000-510	
w/data pack	32000-500	32000-520	32100

#### Florisil® Cartridge Check Mix

2,4,5-trichlorophenol

1,000µg/mL in acetone, 1mL/ampul

	Each	5-pk.	10-pk.
	32017	32017-510	
w/data pack	32017-500	32017-520	32117

#### Pesticide Resolution Check Mix

γ-chlordane	1µg/mL	endosulfan sulfate	2µg/mL
4,4'-DDE	2	endrin ketone	2
dieldrin	2	methoxychlor	10
endosulfan I	1		

In hexane, 1mL/ampul

	Each	5-pk.	10-pk.
	32001	32001-510	
w/data pack	32001-500	32001-520	32101

#### Pesticide Resolution Check Mix w/Surrogates

γ-chlordane	1µg/mL	endosulfan sulfate	2µg/mL
4,4'-DDE	2	endrin ketone	2
decachlorobiphenyl	2	methoxychlor	10
dieldrin	2	2,4,5,6-tetrachloro- <i>m</i> -xylene	2
endosulfan I	1		

In hexane, 1mL/ampul

	Each	5-pk.	10-pk.
	32073	32073-510	
w/data pack	32073-500	32073-520	32173

#### Pesticide Performance Evaluation Mix

α-BHC	1µg/mL	4,4'-DDT	10µg/mL
β-BHC	1	endrin	5
γ-BHC (lindane)	1	methoxychlor	25

In hexane, 1mL/ampul

	Each	5-pk.	10-pk.
	32002	32002-510	
w/data pack	32002-500	32002-520	32102

#### Pesticide Performance Evaluation Mix w/Surrogates

α-BHC	1µg/mL	decachlorobiphenyl	2µg/mL
β-BHC	1	endrin	5
γ-BHC (lindane)	1	methoxychlor	25
4,4'-DDT	10	2,4,5,6-tetrachloro- <i>m</i> -xylene	2

In hexane, 1mL/ampul

	Each	5-pk.	10-pk.
	32074	32074-510	
w/data pack	32074-500	32074-520	32174

#### Pesticide Matrix Spike Mix

aldrin	25µg/mL	dieldrin	50µg/mL
γ-BHC (lindane)	25	endrin	50
4,4'-DDT	50	heptachlor	25

In acetone, 1mL/ampul

	Each	5-pk.	10-pk.
	32018	32018-510	
w/data pack	32018-500	32018-520	32118

## Pesticide Calibration Mixtures

These products can be used to prepare calibration mixes at the Contract Required Quantitation Level (CRQL), 4 x CRQL, 16 x CRQL by serial dilution (includes surrogates).

#### Pesticide Standard Mix A

α-BHC	8µg/mL	endosulfan I	8µg/mL
γ-BHC (lindane)	8	endrin	16
4,4'-DDD	16	heptachlor	8
4,4'-DDT	16	methoxychlor	80
decachlorobiphenyl	16	2,4,5,6-tetrachloro- <i>m</i> -xylene	8
dieldrin	16		

In hexane, 1mL/ampul

	Each	5-pk.	10-pk.
	32003	32003-510	
w/data pack	32003-500	32003-520	32103

#### Pesticide Standard Mix B

aldrin	8µg/mL	endosulfan II	16µg/mL
β-BHC	8	endosulfan sulfate	16
δ-BHC	8	endrin aldehyde	16
α-chlordane	8	endrin ketone	16
γ-chlordane	8	heptachlor epoxide (B)	8
4,4'-DDE	16	2,4,5,6-tetrachloro- <i>m</i> -xylene	8
decachlorobiphenyl	16		

In hexane, 1mL/ampul

	Each	5-pk.	10-pk.
	32004	32004-510	
w/data pack	32004-500	32004-520	32104



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# CLP OLM 04.1 (04.2) Pesticides Reference Materials

## CLP Pesticide Mixtures (04.1 and 3/90 SOW)

These products can be used to prepare calibration mixes at the Contract Required Quantitation Level (CRQL), 4 x CRQL, 20 x CRQL by direct dilution (surrogates NOT included).

### Pesticide Standard Mix A

$\alpha$ -BHC	5 $\mu$ g/mL	endosulfan I	5 $\mu$ g/mL
$\gamma$ -BHC (lindane)	5	endrin	10
4,4'-DDD	10	heptachlor	5
4,4'-DDT	10	methoxychlor	50
dieldrin	10		

In hexane, 1mL/ampul

	Each	5-pk.	10-pk.
	32297	32297-510	
w/data pack	32297-500	32297-520	32397

### Pesticide Standard Mix B

aldrin	5 $\mu$ g/mL	endosulfan II	10 $\mu$ g/mL
$\beta$ -BHC	5	endosulfan sulfate	10
$\delta$ -BHC	5	endrin aldehyde	10
$\alpha$ -chlordane	5	endrin ketone	10
$\gamma$ -chlordane	5	heptachlor epoxide (B)	5
4,4'-DDE	10		

In hexane, 1mL/ampul

	Each	5-pk.	10-pk.
	32298	32298-510	
w/data pack	32298-500	32298-520	32398

Restek's Rtx®-CLPesticides fused silica capillary column enables the analysis of all twenty organochlorine pesticides and their surrogates simultaneously. No longer are laboratories required to analyze these pesticides in two separate solutions. Call 800-356-1688 or 814-353-1300, ext. 4, for more information on column specifications and run conditions.

### Organochlorine Pesticide Mix AB #1

aldrin	dieldrin
$\alpha$ -BHC	endosulfan I
$\beta$ -BHC	endosulfan II
$\delta$ -BHC	endosulfan sulfate
$\gamma$ -BHC (lindane)	endrin
$\alpha$ -chlordane	endrin aldehyde
$\gamma$ -chlordane	endrin ketone
4,4'-DDD	heptachlor
4,4'-DDE	heptachlor epoxide (B)
4,4'-DDT	methoxychlor

200 $\mu$ g/mL ea. in hexane/toluene (1:1), 1mL/ampul

	Each	5-pk.	10-pk.
	32291	32291-510	
w/data pack	32291-500	32291-520	32391

### Organochlorine Pesticide Mix AB #2

aldrin	8 $\mu$ g/mL	dieldrin	16 $\mu$ g/mL
$\alpha$ -BHC	8	endosulfan I	8
$\beta$ -BHC	8	endosulfan II	16
$\delta$ -BHC	8	endosulfan sulfate	16
$\gamma$ -BHC (lindane)	8	endrin	16
$\alpha$ -chlordane	8	endrin aldehyde	16
$\gamma$ -chlordane	8	endrin ketone	16
4,4'-DDD	16	heptachlor	8
4,4'-DDE	16	heptachlor epoxide (B)	8
4,4'-DDT	16	methoxychlor	80

In hexane/toluene (1:1), 1mL/ampul

	Each	5-pk.	10-pk.
	32292	32292-510	
w/data pack	32292-500	32292-520	32392

## Technical Chlordane, Toxaphene Solutions

Compound (1mL/ampul)	Solvent	$\mu$ g/mL	Individual	Individual w/data pack	5-pk.	5-pk. w/data pack	10-pk. w/data pack
chlordane (technical)	Hexane	1,000	32021	32021-500	32021-510	32021-520	32121
chlordane (technical)	Isooctane	5,000	32072	32072-500	32072-510	32072-520	32172
toxaphene	Hexane	1,000	32005	32005-500	32005-510	32005-520	32105
toxaphene	Isooctane	5,000	32071	32071-500	32071-510	32071-520	32171

# CLP OLM 04.1 (04.2) Pesticides Reference Materials

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## CLP Pesticides—Kits

### KIT

#### Pesticide Kit #1

Complete for CLP 04.1 using Standard Mix A & B at 16 x CRQL with surrogates, Resolution Check Mix, & Performance Evaluation Mix with surrogates.

32000: Pesticide Surrogate Mix  
32073: Resolution Check Mix w/surrogates  
32074: Performance Evaluation Mix w/surrogates  
32003: Pesticide Standard Mix A w/surrogates (16 x CRQL)  
32004: Pesticide Standard Mix B w/surrogates (16 x CRQL)  
32005: Toxaphene  
32007: Aroclor® 1221  
32008: Aroclor® 1232  
32009: Aroclor® 1242  
32010: Aroclor® 1248  
32011: Aroclor® 1254  
32039: Aroclor® 1016/1260  
32017: Florisil® Cartridge Check Mix  
32018: Pesticide Matrix Spike Mix

NEW

Kit	Kit w/Data Pack
32402	32402-500

### KIT

#### Pesticide Kit #3

Calibration mixes only for CLP 04.1 using Standard Mix A & B at 16 x CRQL with surrogates.

32003: Pesticide Standard Mix A w/surrogates (16 x CRQL)  
32004: Pesticide Standard Mix B w/surrogates (16 x CRQL)  
32005: Toxaphene  
32007: Aroclor® 1221  
32008: Aroclor® 1232  
32009: Aroclor® 1242  
32010: Aroclor® 1248  
32011: Aroclor® 1254  
32039: Aroclor® 1016/1260

Kit	Kit w/Data Pack
32404	32404-500

### KIT

#### Pesticide Kit #2

Complete for CLP 04.1 using Standard Mix A & B at 20 x CRQL without surrogates, Resolution Check Mix, & Performance Evaluation Mix without surrogates.

32000: Pesticide Surrogate Mix  
32001: Resolution Check Mix  
32002: Performance Evaluation Mix  
32297: Pesticide Standard Mix A (20 x CRQL)  
32298: Pesticide Standard Mix B (20 x CRQL)  
32005: Toxaphene  
32007: Aroclor® 1221  
32008: Aroclor® 1232  
32009: Aroclor® 1242  
32010: Aroclor® 1248  
32011: Aroclor® 1254  
32039: Aroclor® 1016/1260  
32017: Florisil® Cartridge Check Mix  
32018: Pesticide Matrix Spike Mix

NEW

Kit	Kit w/Data Pack
32403	32403-500

### KIT

#### Pesticide Kit #4

Calibration mixes only for CLP 04.1 using Standard Mix A & B at 20 x CRQL without surrogates.

32297: Pesticide Standard Mix A (20 x CRQL)  
32298: Pesticide Standard Mix B (20 x CRQL)  
32005: Toxaphene  
32007: Aroclor® 1221  
32008: Aroclor® 1232  
32009: Aroclor® 1242  
32010: Aroclor® 1248  
32011: Aroclor® 1254  
32039: Aroclor® 1016/1260

NEW

Kit	Kit w/Data Pack
32405	32405-500



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# CLP OLM 04.1 (04.2) Pesticides Reference Materials

## Aroclor® Solutions

Compound (1mL/ampul)	Solvent	µg/mL	Individual	Individual w/data pack	5-pk.	5-pk. w/data pack	10-pk. w/data pack
Aroclor® 1016	Hexane	1,000	32006	32006-500	32006-510	32006-520	32106
Aroclor® 1221	Hexane	1,000	32007	32007-500	32007-510	32007-520	32107
Aroclor® 1232	Hexane	1,000	32008	32008-500	32008-510	32008-520	32108
Aroclor® 1242	Hexane	1,000	32009	32009-500	32009-510	32009-520	32109
Aroclor® 1248	Hexane	1,000	32010	32010-500	32010-510	32010-520	32110
Aroclor® 1254	Hexane	1,000	32011	32011-500	32011-510	32011-520	32111
Aroclor® 1260	Hexane	1,000	32012	32012-500	32012-510	32012-520	32112
Aroclor® 1016/1260	Hexane	1,000	32039	32039-500	32039-510	32039-520	32139
Aroclor® 1016	Isooctane	200	32064	32064-500	32064-510	32064-520	32164
Aroclor® 1221	Isooctane	200	32065	32065-500	32065-510	32065-520	32165
Aroclor® 1232	Isooctane	200	32066	32066-500	32066-510	32066-520	32166
Aroclor® 1242	Isooctane	200	32067	32067-500	32067-510	32067-520	32167
Aroclor® 1248	Isooctane	200	32068	32068-500	32068-510	32068-520	32168
Aroclor® 1254	Isooctane	200	32069	32069-500	32069-510	32069-520	32169
Aroclor® 1260	Isooctane	200	32070	32070-500	32070-510	32070-520	32170
Aroclor® 1016/1260	Isooctane	200	32299	32299-500	32299-510	32299-520	32399

### KIT

#### PCBs Kit #1

1,000µg/mL in hexane, 1mL/ampul. Includes one each of:

32006: Aroclor® 1016  
32007: Aroclor® 1221  
32008: Aroclor® 1232  
32009: Aroclor® 1242  
32010: Aroclor® 1248  
32011: Aroclor® 1254  
32012: Aroclor® 1260

Kit	Kit w/Data Pack
32089	32089-500

### KIT

#### PCBs Kit #3

1,000µg/mL in hexane, 1mL/ampul. Includes one each of:

32007: Aroclor® 1221  
32008: Aroclor® 1232  
32009: Aroclor® 1242  
32010: Aroclor® 1248  
32011: Aroclor® 1254  
32039: Aroclor® 1016/1260

Kit	Kit w/Data Pack
32400	32400-500

### KIT

#### PCBs Kit #2

200µg/mL in isooctane, 1mL/ampul. Includes one each of:

32064: Aroclor® 1016  
32065: Aroclor® 1221  
32066: Aroclor® 1232  
32067: Aroclor® 1242  
32068: Aroclor® 1248  
32069: Aroclor® 1254  
32070: Aroclor® 1260

Kit	Kit w/Data Pack
32090	32090-500

### KIT

#### PCBs Kit #4

200µg/mL in isooctane, 1mL/ampul. Includes one each of:

32065: Aroclor® 1221  
32066: Aroclor® 1232  
32067: Aroclor® 1242  
32068: Aroclor® 1248  
32069: Aroclor® 1254  
32299: Aroclor® 1016/1260

Kit	Kit w/Data Pack
32401	32401-500

**Can't locate the exact mixture you need?**  
**With over 3000 compounds in our inventory,**  
**we can make any mixture to your specifications.**

## Custom Reference Material Request Form

***Copy, Complete, and Fax Back to:***  
the Analytical Reference Materials Department at 814-353-1309.

Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Company: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone #: \_\_\_\_\_ Fax #: \_\_\_\_\_ E-mail: \_\_\_\_\_  
Solvent: \_\_\_\_\_ Volume per ampul: \_\_\_\_\_ # of ampuls: \_\_\_\_\_

Compound(s):	Concentration:	Documentation Required:
_____	_____	<input type="checkbox"/> Gravimetric records
_____	_____	<input type="checkbox"/> Full data pack
_____	_____	<input type="checkbox"/> Other: _____
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Comments: \_\_\_\_\_



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Phone: 814-353-1300 or 800-356-1688 • Fax: 814-353-1309

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Florisil (U.S. Silica Co.)

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Lit. Cat. #59306

## Restek's Analytical Reference Materials Team



(standing left to right) Joe Moodler, Rick Parmely, Mary Ellen Wood, John Lidgett, Chris Cox, Diane Shaffer, Eric Steindl, Andrea Gill, Jason Martin, Scott Strohm, (seated at table) Denise Witherite, and Joe Tallon.

## Restek's Customer Support—at your service!

### Sales & Service

Our highly trained customer service team looks forward to working with you. We are here when you need to place an order, track a package, check the status of an open order, or request a price quote. We will suggest time- and money-saving options and are dedicated to getting your products to you *fast*. Because we know how busy you are, we will do whatever it takes to simplify your work. That's what having the best customer service in the business is all about!

### Shipping

Same-day shipments are the standard at Restek! Our shipping team is completely dedicated to getting your products from our warehouse to your lab as quickly as you need them. We'll do whatever it takes to make sure you are satisfied. Trips to the airport to get products to a customer are not unheard of at Restek. We truly mean...*whatever it takes*.

