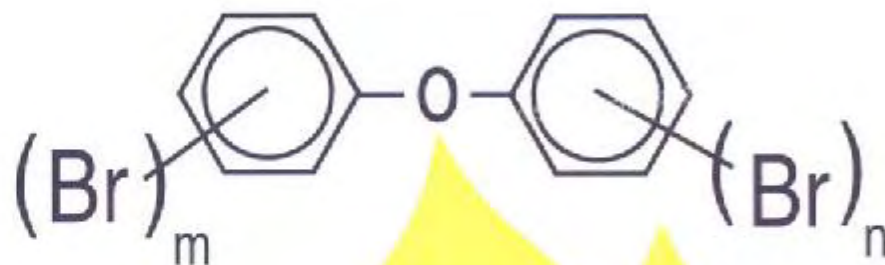


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Flame Retardants

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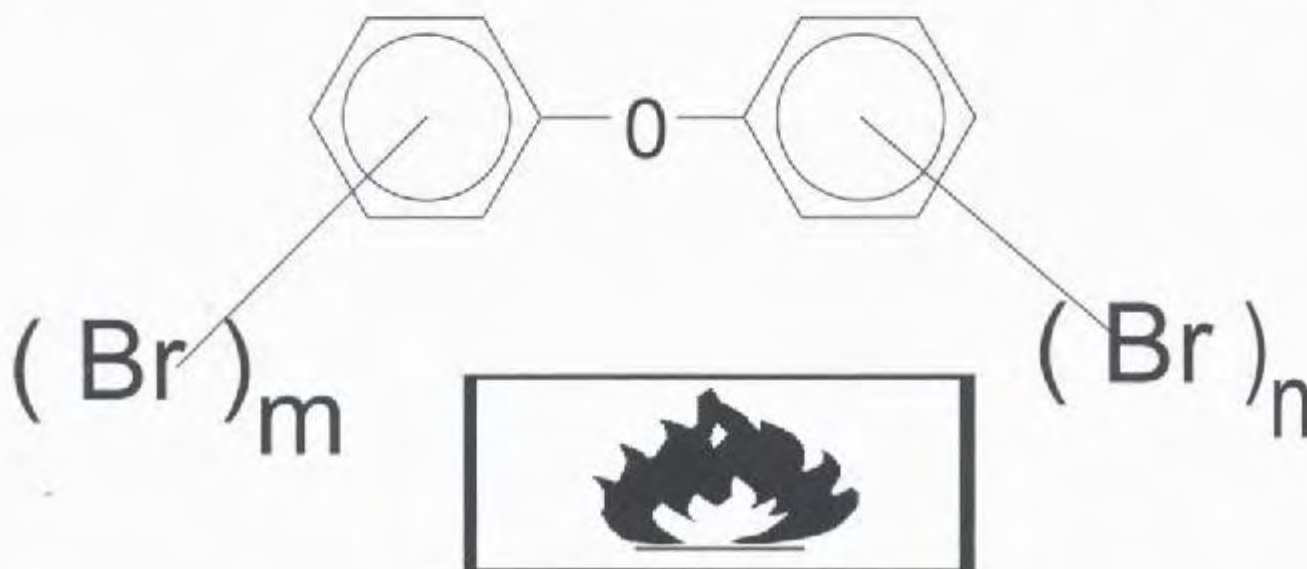
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AccuStandard did some research and some development and then came up with an expanded product line!

POLYBROMINATED DIPHENYL ETHERS (PBDEs)



Flame Retardants

have been used extensively over the past 2 decades as flame retardants in plastics, textiles, coatings and electrical components found in many common products including televisions, computers and electrical appliances. The annual world production is more than 55'000 metric tons/year. As a consequence of their widespread use, they have become persistent organic pollutants worldwide. Although PBDE levels in biota are still less than those of the PCBs, studies show a sharp and alarming increase in PBDE concentrations during the past decade.

PBDEs are lipophilic compounds and bioaccumulate rapidly through the food chain. For example, preliminary studies suggest that the levels of PBDEs in breast milk of North American women appear to be doubling every two to five years (Ryan, J.J.; Patry, B; *Organohalogen Compounds* 2000, 47, 57).

Although the toxicology of PBDEs is currently under investigation, research shows that PBDEs affect thyroid hormone levels and can cause liver and neurodevelopmental health risks. Ongoing toxicological studies and environmental monitoring will provide more understanding of the significance of PBDEs in the environment and on human health. A comprehensive collection of original communications regarding brominated flame retardants is found in a special issue of *Chemosphere*, 2002, 46, (5).

AccuStandard has synthesized and catalogued more than 75 pure PBDE congeners for use as standards for toxicology research and in the identification of unknown substances in environmental samples. AccuStandard also offers custom synthesis of congeners not listed.

Please receive the corresponding list of Flame Retardants.

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Terms of Delivery in general see Placement of Orders in Catalog

VAT excl.,
 Shipping/Handling excl.:
 FedEx uncleared, duty unpaid
 A Priority uncleared, duty unpaid
 or according to your instructions
 Prices may change without notice

FLAME RETARDANTS

Cat. No.	Bromobiphenyls 35 µg/mL in Isooctane	Unit
B-001S	2-Bromobiphenyl	1 mL
B-002S	3-Bromobiphenyl	1 mL
B-003S	4-Bromobiphenyl	1 mL
B-004S	2,2'-Dibromobiphenyl	1 mL
B-007S	2,4-Dibromobiphenyl	1 mL
B-009S	2,5-Dibromobiphenyl	1 mL
B-010S	2,6-Dibromobiphenyl	1 mL
B-015S	4,4'-Dibromobiphenyl	1 mL
B-018S	2,2',5-Tribromobiphenyl	1 mL
B-026S	2,3',5-Tribromobiphenyl	1 mL
B-030S	2,4,6-Tribromobiphenyl	1 mL
B-031S	2,4',5-Tribromobiphenyl	1 mL
B-049S	2,2',4,5'-Tetrabromobiphenyl	1 mL
B-052S	2,2',5,5'-Tetrabromobiphenyl	1 mL
B-053S	2,2',5,6'-Tetrabromobiphenyl	1 mL
B-077S	3,3',4,4'-Tetrabromobiphenyl	1 mL
B-080S	3,3',5,5'-Tetrabromobiphenyl	1 mL
B-103S	2,2',4,5',6-Pentabromobiphenyl	1 mL
B-153S	2,2',4,4',5,5'-Hexabromobiphenyl	1 mL
B-155S	2,2',4,4',6,6'-Hexabromobiphenyl (98+%)	1 mL
B-169S	3,3',4,4',5,5'-Hexabromobiphenyl	1 mL
B-209S	Decabromobiphenyl (98+%)	1 mL
B-250S-0.35X	Dow FR-250 (Octabromobiphenyl)	1 mL
B-600S-0.35X	Firemaster BP-6 (Hexabromobiphenyl)	1 mL

Cat. No.	Bromobiphenyls neat	Unit
B-001N	2-Bromobiphenyl	50 mg
B-002N	3-Bromobiphenyl	50 mg
B-003N	4-Bromobiphenyl	50 mg
B-004N	2,2'-Dibromobiphenyl	10 mg
B-007N-10MG	2,4-Dibromobiphenyl	10 mg
B-009N	2,5-Dibromobiphenyl	25 mg
B-010N-5MG	2,6-Dibromobiphenyl	5 mg
B-015N	4,4'-Dibromobiphenyl	10 mg
B-018N	2,2',5-Tribromobiphenyl	10 mg
B-026N	2,3',5-Tribromobiphenyl	10 mg
B-030N	2,4,6-Tribromobiphenyl	25 mg
B-031N	2,4',5-Tribromobiphenyl	10 mg
B-049N-5MG	2,2',4,5'-Tetrabromobiphenyl	5 mg
B-052N	2,2',5,5'-Tetrabromobiphenyl	10 mg
B-053N-5MG	2,2',5,6'-Tetrabromobiphenyl	5 mg
QB-077N	3,3',4,4'-Tetrabromobiphenyl (Custom Standard)	5 mg
B-103N	2,2',4,5',6-Pentabromobiphenyl	5 mg
B-153N	2,2',4,4',5,5'-Hexabromobiphenyl	10 mg
B-155N	2,2',4,4',6,6'-Hexabromobiphenyl	5 mg
B-209N	Decabromobiphenyl	25 mg
B-250N	Dow FR-250 (Octabromobiphenyl)	10 mg
B-600N	Firemaster BP-6 (Hexabromobiphenyl)	10 mg

Cat. No.	Bromobiphenyls 100 µg/mL in Isooctane	Unit
B-250S	Dow FR-250 (Octabromobiphenyl)	1 mL
B-600S	Firemaster BP-6 (Hexabromobiphenyl)	1 mL

Cat. No.	Individual Bromodiphenyl ethers 50 µg/mL in Isooctane	Unit
BDE-001S	2-Bromodiphenyl ether	1 mL
BDE-002S	3-Bromodiphenyl ether	1 mL
BDE-003S	4-Bromodiphenyl ether	1 mL
BDE-004S	2,2'-Dibromodiphenyl ether	1 mL
BDE-005S	2,3-Dibromodiphenyl ether	1 mL
BDE-006S	2,3'-Dibromodiphenyl ether	1 mL
BDE-007S	2,4-Dibromodiphenyl ether	1 mL
BDE-008S	2,4'-Dibromodiphenyl ether	1 mL
BDE-009S	2,5-Dibromodiphenyl ether	1 mL
BDE-010S	2,6-Dibromodiphenyl ether	1 mL
BDE-011S	3,3'-Dibromodiphenyl ether	1 mL
BDE-012S	3,4-Dibromodiphenyl ether	1 mL
BDE-013S	3,4'-Dibromodiphenyl ether	1 mL
BDE-014S	3,5-Dibromodiphenyl ether	1 mL
BDE-015S	4,4'-Dibromodiphenyl ether	1 mL
BDE-016S	2,2',3-Tribromodiphenyl ether	1 mL
BDE-017S	2,2',4-Tribromodiphenyl ether	1 mL
BDE-018S	2,2',5-Tribromodiphenyl ether	1 mL
BDE-019S	2,2',6-Tribromodiphenyl ether	1 mL
BDE-020S	2,3,3'-Tribromodiphenyl ether	1 mL
BDE-021S	2,3,4-Tribromodiphenyl ether	1 mL
BDE-022S	2,3,4'-Tribromodiphenyl ether	1 mL
BDE-025S	2,3',4-Tribromodiphenyl ether	1 mL
BDE-026S	2,3',5-Tribromodiphenyl ether	1 mL
BDE-027S	2,3',6-Tribromodiphenyl ether	1 mL
BDE-028S	2,4,4'-Tribromodiphenyl ether	1 mL
BDE-029S	2,4,5-Tribromodiphenyl ether	1 mL
BDE-030S	2,4,6-Tribromodiphenyl ether	1 mL
BDE-031S	2,4',5-Tribromodiphenyl ether	1 mL
BDE-032S	2,4',6-Tribromodiphenyl ether	1 mL
BDE-033S	2',3,4-Tribromodiphenyl ether	1 mL
BDE-034S	2',3,5-Tribromodiphenyl ether	1 mL
BDE-035S	3,3',4-Tribromodiphenyl ether	1 mL
BDE-036S	2',3',5-Tribromodiphenyl ether	1 mL
BDE-037S	3,4,4'-Tribromodiphenyl ether	1 mL
BDE-038S	3,4,5-Tribromodiphenyl ether	1 mL
BDE-039S	3,4',5-Tribromodiphenyl ether	1 mL
BDE-040S	2,2',3,3'-Tetrabromodiphenyl ether	1 mL
BDE-041S	2,2',3,4-Tetrabromodiphenyl ether	1 mL
BDE-042S	2,2',3,4'-Tetrabromodiphenyl ether	1 mL
BDE-044S	2,2',3,5'-Tetrabromodiphenyl ether	1 mL
BDE-046S	2,2',3,6'-Tetrabromodiphenyl ether	1 mL
BDE-047S	2,2',4,4'-Tetrabromodiphenyl ether	1 mL
BDE-048S	2,2',4,5-Tetrabromodiphenyl ether	1 mL
BDE-049S	2,2',4,5'-Tetrabromodiphenyl ether	1 mL
BDE-050S	2,2',4,6-Tetrabromodiphenyl ether	1 mL
BDE-051S	2,2',4,6'-Tetrabromodiphenyl ether	1 mL
BDE-052S	2,2',5,5'-Tetrabromodiphenyl ether	1 mL
BDE-053S	2,2',5,6'-Tetrabromodiphenyl ether	1 mL
BDE-055S	2,3,3',4-Tetrabromodiphenyl ether	1 mL
BDE-056S	2,3,3',4'-Tetrabromodiphenyl ether	1 mL
BDE-058S	2,3,3',5'-Tetrabromodiphenyl ether	1 mL
BDE-061S	2,3,4,5-Tetrabromodiphenyl ether	1 mL
BDE-062S	2,3,4,6-Tetrabromodiphenyl ether	1 mL

Cat. No.	Individual Bromodiphenyl ethers 50 µg/mL in Isooctane	Unit
BDE-066S	2,3',4,4'-Tetrabromodiphenyl ether	1 mL
BDE-067S	2,3',4,5-Tetrabromodiphenyl ether	1 mL
BDE-068S	2,3',4,5-Tetrabromodiphenyl ether	1 mL
BDE-069S	2,3',4,6-Tetrabromodiphenyl ether	1 mL
BDE-070S	2,3',4',5-Tetrabromodiphenyl ether	1 mL
BDE-071S	2,3',4',6-Tetrabromodiphenyl ether	1 mL
BDE-072S	2,3',5,5'-Tetrabromodiphenyl ether	1 mL
BDE-073S	2,3',5',6-Tetrabromodiphenyl ether	1 mL
BDE-074S	2,4,4',5-Tetrabromodiphenyl ether	1 mL
BDE-075S	2,4,4',6-Tetrabromodiphenyl ether	1 mL
BDE-076S	2',3,4,5-Tetrabromodiphenyl ether	1 mL
BDE-077S	3,3',4,4'-Tetrabromodiphenyl ether	1 mL
BDE-078S	3,3',4,5-Tetrabromodiphenyl ether	1 mL
BDE-079S	3,3',4,5'-Tetrabromodiphenyl ether	1 mL
BDE-080S	3,3',5,5'-Tetrabromodiphenyl ether	1 mL
BDE-081S	3',4,4',5-Tetrabromodiphenyl ether	1 mL
BDE-085S	2,2',3,4,4'-Pentabromodiphenyl ether	1 mL
BDE-086S	2,2',3,4,5-Pentabromodiphenyl ether	1 mL
BDE-087S	2,2',3,4,5'-Pentabromodiphenyl ether	1 mL
BDE-088S	2,2',3,4,6-Pentabromodiphenyl ether	1 mL
BDE-097S	2,2',3',4,5-Pentabromodiphenyl ether	1 mL
BDE-098S	2,2',3',4,6-Pentabromodiphenyl ether	1 mL
BDE-099S	2,2',4,4',5-Pentabromodiphenyl ether	1 mL
BDE-100S	2,2',4,4',6-Pentabromodiphenyl ether	1 mL
BDE-101S	2,2',4,5,5'-Pentabromodiphenyl ether	1 mL
BDE-102S	2,2',4,5,6'-Pentabromodiphenyl ether	1 mL
BDE-103S	2,2',4,5',6-Pentabromodiphenyl ether	1 mL
BDE-104S	2,2',4,6,6'-Pentabromodiphenyl ether	1 mL
BDE-105S	2,3,3',4,4'-Pentabromodiphenyl ether	1 mL
BDE-106S	2,3,3',4,5-Pentabromodiphenyl ether	1 mL
BDE-108S	2,3,3',4,5'-Pentabromodiphenyl ether	1 mL

Cat. No.	Individual Bromodiphenyl ethers 50 µg/mL in Isooctane	Unit
BDE-109S	2,3,3',4,6-Pentabromodiphenyl ether	1 mL
BDE-114S	2,3,4,4',5-Pentabromodiphenyl ether	1 mL
BDE-115S	2,3,4,4',6-Pentabromodiphenyl ether	1 mL
BDE-116S	2,3,4,5,6-Pentabromodiphenyl ether	1 mL
BDE-118S	2,3',4,4',5-Pentabromodiphenyl ether	1 mL
BDE-119S	2,3',4,4',6-Pentabromodiphenyl ether	1 mL
BDE-120S	2,3',4,5,5'-Pentabromodiphenyl ether	1 mL
BDE-121S	2,3',4,5',6-Pentabromodiphenyl ether	1 mL
BDE-123S	2',3,4,4',5-Pentabromodiphenyl ether	1 mL
BDE-124S	2',3,4,5,5'-Pentabromodiphenyl ether	1 mL
BDE-125S	2',3,4,5,6'-Pentabromodiphenyl ether	1 mL
BDE-126S	3,3',4,4,5'-Pentabromodiphenyl ether	1 mL
BDE-127S	3,3',4,5,5'-Pentabromodiphenyl ether	1 mL
BDE-128S	2,2',3,3',4,4'-Hexabromodiphenyl ether	1 mL
BDE-129S	2,2',3,3',4,5-Hexabromodiphenyl ether	1 mL
BDE-131S	2,2',3,3',4,6-Hexabromodiphenyl ether	1 mL
BDE-137S	2,2',3,4,4',5-Hexabromodiphenyl ether	1 mL
BDE-138S	2,2',3,4,4',5'-Hexabromodiphenyl ether	1 mL
BDE-139S	2,2',3,4,4',6-Hexabromodiphenyl ether	1 mL
BDE-140S	2,2',3,4,4',6'-Hexabromodiphenyl ether	1 mL
BDE-141S	2,2',3,4,5,5'-Hexabromodiphenyl ether	1 mL
BDE-142S	2,2',3,4,5,6-Hexabromodiphenyl ether	1 mL
BDE-144S	2,2',3,4,5',6-Hexabromodiphenyl ether	1 mL
BDE-153S	2,2',4,4',5,5'-Hexabromodiphenyl ether	1 mL
BDE-154S	2,2',4,4',5,6'-Hexabromodiphenyl ether	1 mL
BDE-155S	2,2',4,4',6,6'-Hexabromodiphenyl ether	1 mL
BDE-156S	2,3,3',4,4',5-Hexabromodiphenyl ether	1 mL
BDE-158S	2,3,3',4,4',6-Hexabromodiphenyl ether	1 mL
BDE-159S	2,3,3',4,5,5'-Hexabromodiphenyl ether	1 mL
BDE-160S	2,3,3',4,5,6-Hexabromodiphenyl ether	1 mL
BDE-161S	2,3,3',4,5',6-Hexabromodiphenyl ether	1 mL
BDE-166S	2,3,4,4',5,6-Hexabromodiphenyl ether	1 mL
BDE-167S	2,3',4,4',5,5'-Hexabromodiphenyl ether	1 mL
BDE-168S	2,3',4,4',5',6-Hexabromodiphenyl ether	1 mL
BDE-172S	2,2',3,3',4,5,5'-Heptabromodiphenyl ether	1 mL
BDE-173S	2,2',3,3',4,5,6-Hexabromodiphenyl ether	1 mL

Cat. No.	Individual Bromodiphenyl ethers 50 µg/mL in Isooctane	Unit
BDE-175S	2,2',3,3',4,5',6-Heptabromodiphenyl ether	1 mL
BDE-180S	2,2',3,4,4',5,5'-Heptabromodiphenyl ether	1 mL
BDE-181S	2,2',3,4,4',5,6-Heptabromodiphenyl ether	1 mL
BDE-182S	2,2',3,4,4',5,6'-Heptabromodiphenyl ether	1 mL
BDE-183S	2,2',3,4,4',5',6-Heptabromodiphenyl ether	1 mL
BDE-184S	2,2',3,4,4',6,6'-Heptabromodiphenyl ether	1 mL
BDE-185S	2,2',3,4,5,5',6-Heptabromodiphenyl ether	1 mL
BDE-190S	2,3,3',4,4',5,6-Heptabromodiphenyl ether	1 mL
BDE-191S	2,3,3',4,4',5',6-Heptabromodiphenyl ether	1 mL
BDE-192S	2,3,3',4,5,5',6-Heptabromodiphenyl ether	1 mL
BDE-196S	2,2',3,3',4,4',5,6'-Octabromodiphenyl ether	1 mL
BDE-197S	2,2',3,3',4,4',6,6'-Octabromodiphenyl ether	1 mL
BDE-198S	2,2',3,3',4,5,5',6-Octabromodiphenyl ether	1 mL
BDE-203S	2,2',3,4,4',5,5',6-Octabromodiphenyl ether	1 mL
BDE-204S	2,2',3,4,4',5,6,6'-Octabromodiphenyl ether	1 mL
BDE-205S	2,3,3',4,4',5,5',6-Octabromodiphenyl ether	1 mL
BDE-206S	2,2',3,3',4,4',5,5',6-Nonabromodiphenyl ether	1 mL
BDE-207S-0.2X	2,2',3,3',4,4',5,6,6'-Nonabromodiphenyl ether	1 mL
BDE-208S	2,2',3,3',4,5,5',6,6'-Nonabromodiphenyl ether	1 mL
BDE-208S-0.2X	2,2',3,3',4,5,5',6,6'-Nonabromodiphenyl ether	1 mL
BDE-209S	Decabromodiphenyl ether	1 mL
BDE-705	Bromkal DE-70-5 (Pentas)	1 mL
BDE-710	Bromkal DE-71 (Pentas)	1 mL
BDE-710-GL	DE-71 (Pentas) Great Lakes	1 mL
BDE-736	Bromkal DE-73-6 (Hexas)	1 mL
BDE-798	Bromkal DE-79-8 (Octas)	1 mL
BDE-798-GL	DE-79 (Octas) Great Lakes	1 mL

Method 1614 Polybrominated diphenyl ethers (PBDEs) Mixtures**Mixtures for PBDE'S**

Cat. No.	Mixtures of PBDEs Standard Solution for Accuracy & Conc.	Unit
BDE-AAP-A	At stated conc. in Isooctane; 39 components	1x1 mL
	2-Bromodiphenyl ether (#1)	100 ng/mL
	3-Bromodiphenyl ether (#2)	100 ng/mL
	4-Bromodiphenyl ether (#3)	100 ng/mL
	2,4-Dibromodiphenyl ether (#7)	100 ng/mL
	2,4'-Dibromodiphenyl ether (#8)	100 ng/mL
	2,6-Dibromodiphenyl ether (#10)	100 ng/mL
	3,3'-Dibromodiphenyl ether (#11)	100 ng/mL
	3,4-Dibromodiphenyl ether (#12)	100 ng/mL
	3,4'-Dibromodiphenyl ether (#13)	100 ng/mL
	4,4'-Dibromodiphenyl ether (#15)	100 ng/mL
	2,2',4,-Tribromodiphenyl ether (#17)	100 ng/mL
	2,3',4-Tribromodiphenyl ether (#25)	100 ng/mL
	2,4,4'-Tribromodiphenyl ether (#28)	100 ng/mL
	2,4,6-Tribromodiphenyl ether (#30)	100 ng/mL
	2,4',6-Tribromodiphenyl ether (#32)	100 ng/mL
	2',3,4-Tribromodiphenyl ether (#33)	100 ng/mL
	3,3',4-Tribromodiphenyl ether (#35)	100 ng/mL
	3,4,4'-Tribromodiphenyl ether (#37)	100 ng/mL
	2,2',4,4'-Tetrabromodiphenyl ether (#47)	100 ng/mL
	2,2',4,5'-Tetrabromodiphenyl ether (#49)	100 ng/mL
	2,3',4,4'-Tetrabromodiphenyl ether (#66)	100 ng/mL
	2,3',4',6-Tetrabromodiphenyl ether (#71)	100 ng/mL
	2,4,4',6-Tetrabromodiphenyl ether (#75)	100 ng/mL
	3,3',4,4'-Tetrabromodiphenyl ether (#77)	100 ng/mL
	2,2',3,4,4'-Pentabromodiphenyl ether (#85)	150 ng/mL
	2,2',4,4',5-Pentabromodiphenyl ether (#99)	150 ng/mL
	2,2',4,4',6-Pentabromodiphenyl ether (#100)	150 ng/mL
	2,3,4,5,6-Pentabromodiphenyl ether (#116)	150 ng/mL
	2,3',4,4',5-Pentabromodiphenyl ether (#118)	150 ng/mL
	2,3',4,4',6-Pentabromodiphenyl ether (#119)	150 ng/mL
	3,3',4,4',5-Pentabromodiphenyl ether (#126)	150 ng/mL
	2,2',3,4,4',5'-Hexabromodiphenyl ether (#138)	200 ng/mL
	2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	200 ng/mL
	2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	200 ng/mL
	2,2',4,4',6,6'-Hexabromodiphenyl ether (#155)	200 ng/mL
	2,3,4,4',5,6-Hexabromodiphenyl ether (#166)	200 ng/mL
	2,2',3,4,4',5,6-Heptabromodiphenyl ether (#181)	250 ng/mL
	2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183)	250 ng/mL
	2,3,3',4,4',5,6-Heptabromodiphenyl ether (#190)	250 ng/mL

Cat. No.	Mixtures of PBDEs Standard Solution for Accuracy & Conc.	Unit
BDE-AAP-A-15X	At stated conc. in Isooctane; 39 components	1x1 mL
	2-Bromodiphenyl ether (#1)	1.5 µg/mL
	3-Bromodiphenyl ether (#2)	1.5 µg/mL
	4-Bromodiphenyl ether (#3)	1.5 µg/mL
	2,4-Dibromodiphenyl ether (#7)	1.5 µg/mL
	2,4'-Dibromodiphenyl ether (#8)	1.5 µg/mL
	2,6-Dibromodiphenyl ether (#10)	1.5 µg/mL
	3,3'-Dibromodiphenyl ether (#11)	1.5 µg/mL
	3,4-Dibromodiphenyl ether (#12)	1.5 µg/mL
	3,4'-Dibromodiphenyl ether (#13)	1.5 µg/mL
	4,4'-Dibromodiphenyl ether (#15)	1.5 µg/mL
	2,2',4-Tribromodiphenyl ether (#17)	1.5 µg/mL
	2,3',4-Tribromodiphenyl ether (#25)	1.5 µg/mL
	2,4,4'-Tribromodiphenyl ether (#28)	1.5 µg/mL
	2,4,6-Tribromodiphenyl ether (#30)	1.5 µg/mL
	2,4',6-Tribromodiphenyl ether (#32)	1.5 µg/mL
	2',3,4-Tribromodiphenyl ether (#33)	1.5 µg/mL
	3,3',4-Tribromodiphenyl ether (#35)	1.5 µg/mL
	3,4,4'-Tribromodiphenyl ether (#37)	1.5 µg/mL
	2,2',4,4'-Tetrabromodiphenyl ether (#47)	1.5 µg/mL
	2,2',4,5'-Tetrabromodiphenyl ether (#49)	1.5 µg/mL
	2,3',4,4'-Tetrabromodiphenyl ether (#66)	1.5 µg/mL
	2,3',4',6-Tetrabromodiphenyl ether (#71)	1.5 µg/mL
	2,4,4',6-Tetrabromodiphenyl ether (#75)	1.5 µg/mL
	3,3',4,4'-Tetrabromodiphenyl ether (#77)	1.5 µg/mL
	2,2',3,4,4'-Pentabromodiphenyl ether (#85)	2.25 µg/mL
	2,2',4,4',5-Pentabromodiphenyl ether (#99)	2.25 µg/mL
	2,2',4,4',6-Pentabromodiphenyl ether (#100)	2.25 µg/mL
	2,3,4,5,6-Pentabromodiphenyl ether (#116)	2.25 µg/mL
	2,3',4,4',5-Pentabromodiphenyl ether (#118)	2.25 µg/mL
	2,3',4,4',6-Pentabromodiphenyl ether (#119)	2.25 µg/mL
	3,3',4,4',5-Pentabromodiphenyl ether (#126)	2.25 µg/mL
	2,2',3,4,4',5'-Hexabromodiphenyl ether (#138)	3 µg/mL
	2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	3 µg/mL
	2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	3 µg/mL
	2,2',4,4',6,6'-Hexabromodiphenyl ether (#155)	3 µg/mL
	2,3,4,4',5,6-Hexabromodiphenyl ether (#166)	3 µg/mL
	2,2',3,4,4',5,6-Heptabromodiphenyl ether (#181)	3.75 µg/mL
	2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183)	3.75 µg/mL
	2,3,3',4,4',5,6-Heptabromodiphenyl ether (#190)	3.75 µg/mL

Cat. No.	PBDE Congeners common to Technical Mixtures	Unit
BDE-BROMKAL	10 µg/mL each in Isooctane; 6 components	1x1 mL
	2,4,4'-Tribromodiphenyl ether	
	2,2',4,4'-Tetrabromodiphenyl ether	
	2,2',4,4',5-Pentabromodiphenyl ether	
	2,2',4,4',6-Pentabromodiphenyl ether	
	2,2',4,4',5,5'-Hexabromodiphenyl ether	
	2,2',4,4',5,6'-Hexabromodiphenyl ether	

Cat. No. BDE-CAE-1	PBDE Congeners common in California Environment 10 µg/mL each in Isooctane; 7 components 2,4,4'-Tribromodiphenyl ether (#28) 2',3,4'-Tribromodiphenyl ether (#33) 2,2',4,4'-Tetrabromodiphenyl ether (#47) 2,2',4,4',5-Pentabromodiphenyl ether (#99) 2,2',4,4',6-Pentabromodiphenyl ether (#100) 2,2',4,4',5,5'-Hexabromodiphenyl ether (#153) 2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	Unit 1x1 mL
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Cat. No. BDE-CALEWS	California Method 750-M Standard 10 µg/mL each in Isooctane; 13 components 2,2',4'-Tribromodiphenyl ether (#17) 2,4,4'-Tribromodiphenyl ether (#28) 2,2',4,4'-Tetrabromodiphenyl ether (#47) 2,3',4,4'-Tetrabromodiphenyl ether (#66) 2,3',4',6-Tetrabromodiphenyl ether (#71) 2,2',4,4',5-Pentabromodiphenyl ether (#99) 2,2',4,4',6-Pentabromodiphenyl ether (#100) 2,2',3,4,4',5'-Hexabromodiphenyl ether (#138) 2,2',4,4',5,5'-Hexabromodiphenyl ether (#153) 2,2',4,4',5,6'-Hexabromodiphenyl ether (#154) 2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183) 2,2',3,3',4,4',5,5',6,6'-Decabromodiphenyl ether (#209) 2,2',6,6'-Tetrabromobisphenol A	Unit 1x1 mL
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PBDE Congeners of Primary Interest

Cat. No. BDE-CM	Calibration Mix At stated conc. in Isooctane; 8 components 2,4,4'-Tribromodiphenyl ether (#28) 2,2',4,4'-Tetrabromodiphenyl ether (#47) 2,2',4,4',5-Pentabromodiphenyl ether (#99) 2,2',4,4',6-Pentabromodiphenyl ether (#100) 2,2',4,4',5,5'-Hexabromodiphenyl ether (#153) 2,2',4,4',5,6'-Hexabromodiphenyl ether (#154) 2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183) Decabromodiphenyl ether (#209)	Conc. 2.5 µg/mL 2.5 µg/mL 2.5 µg/mL 2.5 µg/mL 2.5 µg/mL 2.5 µg/mL 2.5 µg/mL 25 µg/mL	Unit 1x1 mL
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Cat. No. BDE-COC	Mixture of Commonly Occurring PBDE Congeners for Conc. and Recovery, at stated conc. in Isooctane; 14 components 2,2',4,-Tribromodiphenyl ether (#17) 2,4,4'-Tribromodiphenyl ether (#28) 2,2',4,4'-Tetrabromodiphenyl ether (#47) 2,3',4,4'-Tetrabromodiphenyl ether (#66) 2,3',4',6-Tetrabromodiphenyl ether (#71) 2,2',3,4,4'-Pentabromodiphenyl ether (#85) 2,2',4,4',5-Pentabromodiphenyl ether (#99) 2,2',4,4',6-Pentabromodiphenyl ether (#100) 2,2',3,4,4',5'-Hexabromodiphenyl ether (#138) 2,2',4,4',5,5'-Hexabromodiphenyl ether (#153) 2,2',4,4',5,6'-Hexabromodiphenyl ether (#154) 2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183) 2,3,3',4,4',5,6-Heptabromodiphenyl ether (#190) Decabromodiphenyl ether (#209)	Conc. 5 µg/mL 5 µg/mL 5 µg/mL 5 µg/mL 5 µg/mL 5 µg/mL 5 µg/mL 5 µg/mL 5 µg/mL 5 µg/mL 5 µg/mL 5 µg/mL 5 µg/mL 25 µg/mL	Unit 1x1 mL
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Cat. No. BDE-CR	PBDEs in Columbia River 10 µg/mL each in Isooctane; 12 components 4,4'-Dibromodiphenyl ether (#15) 2,4,4'-Tribromodiphenyl ether (#28) 2',3,4'-Tribromodiphenyl ether (#33) 2,2',4,4'-Tetrabromodiphenyl ether (#47) 2,2',4,5'-Tetrabromodiphenyl ether (#49) 2,3',4,4'-Tetrabromodiphenyl ether (#66) 2,4,4',6-Tetrabromodiphenyl ether (#75) 2,2',4,4',5-Pentabromodiphenyl ether (#99) 2,2',4,4',6-Pentabromodiphenyl ether (#100) 2,2',4,4',5,5'-Hexabromodiphenyl ether (#153) 2,2',4,4',5,6'-Hexabromodiphenyl ether (#154) 2,2',4,4',6,6'-Hexabromodiphenyl ether (#155)	Unit 1x1 mL
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Cat. No. BDE-CSM	PBDE Congeners of Primary Interest At stated conc. in Isooctane; 8 components 2,4,4'-Tribromodiphenyl ether (#28) 2,2',4,4'-Tetrabromodiphenyl ether (#47) 2,2',4,4',5-Pentabromodiphenyl ether (#99) 2,2',4,4',6-Pentabromodiphenyl ether (#100) 2,2',4,4',5,5'-Hexabromodiphenyl ether (#153) 2,2',4,4',5,6'-Hexabromodiphenyl ether (#154) 2,2',3,4,4',5,6-Heptabromodiphenyl ether (#183) Decabromodiphenyl ether (#209)	Unit 1x1 mL
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Cat. No. BDE-CS-SET	PBDE Congeners of Primary Interest At stated conc. in Isooctane; individual Comps. 2,4,4'-Tribromodiphenyl ether (#28) 2,2',4,4'-Tetrabromodiphenyl ether (#47) 2,2',4,4',5-Pentabromodiphenyl ether (#99) 2,2',4,4',6-Pentabromodiphenyl ether (#100) 2,2',4,4',5,5'-Hexabromodiphenyl ether (#153) 2,2',4,4',5,6'-Hexabromodiphenyl ether (#154) 2,2',3,4,4',5,6-Heptabromodiphenyl ether (#183) Decabromodiphenyl ether (#209)	Conc. 20 µg/mL 20 µg/mL 20 µg/mL 20 µg/mL 20 µg/mL 20 µg/mL 20 µg/mL 200 µg/mL	Unit 8x1 mL
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Cat. No. BDE-EPA-SET	Bromodiphenyl ethers in proposed US EPA Method 50 µg/mL each in Isooctane; 8 components 2,4,4'-Tribromodiphenyl ether 2,2',4,4'-Tetrabromodiphenyl ether 2,2',4,4',5-Pentabromodiphenyl ether 2,2',4,4',6-Pentabromodiphenyl ether 2,2',4,4',5,5'-Hexabromodiphenyl ether 2,2',4,4',5,6'-Hexabromodiphenyl ether 2,2',3,4,4',5,6-Heptabromodiphenyl ether Decabromodiphenyl ether	Unit 8x1 mL
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Cat. No. BDE-LMS	Bromodiphenyl Ethers Lake Michigan Study 10 µg/mL each in Isooctane; 9 components 2,4,4'-Tribromodiphenyl ether 2,2',4,4'-Tetrabromodiphenyl ether 2,3',4,4'-Tetrabromodiphenyl ether 2,2',3,4,4'-Pentabromodiphenyl ether 2,2',4,4',5'-Pentabromodiphenyl ether 2,2',4,4',6'-Pentabromodiphenyl ether 2,2',3,4,4',5'-Hexabromodiphenyl ether 2,2',4,4',5,5'-Hexabromodiphenyl ether 2,2',4,4',5,6'-Hexabromodiphenyl ether	Unit 1 mL
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Cat. No. BDE-MS	Calibration Mix, Spiking Solution At stated conc. in Isooctane; 8 components 2,4,4'-Tribromodiphenyl ether (#28) 2,2',4,4'-Tetrabromodiphenyl ether (#47) 2,2',4,4',5'-Pentabromodiphenyl ether (#99) 2,2',4,4',6'-Pentabromodiphenyl ether (#100) 2,2',4,4',5,5'-Hexabromodiphenyl ether (#153) 2,2',4,4',5,6'-Hexabromodiphenyl ether (#154) 2,2',3,4,4',5,6'-Heptabromodiphenyl ether (#183) Decabromodiphenyl ether (#209)	Conc. 1 ng/mL 1 ng/mL 1 ng/mL 1 ng/mL 1 ng/mL 1 ng/mL 1 ng/mL 10 ng/mL	Unit 1x1 mL
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Cat. No. BDE-USE	Common Bromodiphenyl Ethers in US Environment 10 µg/mL each in Isooctane; 5 components 2,2',4,4'-Tetrabromodiphenyl ether 2,2',4,4',5'-Pentabromodiphenyl ether 2,2',4,4',6'-Pentabromodiphenyl ether 2,2',4,4',5,5'-Hexabromodiphenyl ether 2,2',4,4',5,6'-Hexabromodiphenyl ether	Unit 1 mL
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Cat. No.	Active ingredient	Unit
A-012	Hexachlorobenzene	100 mg
FRS-001N	Chlorendic anhydride	10 mg
FRS-001S	Chlorendic anhydride	1 mL
FRS-002N	Chlorafin 40	10 mg
FRS-002S	Chlorafin 40	1 mL
FRS-004N	Chlorowax 500C	10 mg
FRS-004S	Chlorowax 500C	1 mL
FRS-005N	Diable 700X	10 mg
FRS-005S	Diable 700X	1 mL
FRS-006N	Firemaster BP4A	10 mg
FRS-006S	Firemaster BP4A	1 mL
FRS-007N	Firemaster PHT4	10 mg
FRS-007S	Firemaster PHT4	1 mL
FRS-008N	Firemaster T23P	10 mg
FRS-008S	Firemaster T23P	1 mL
FRS-009N	FR-300BA	10 mg
FRS-009S	FR-300BA	1 mL
FRS-010N	FR-651A	10 mg
FRS-010S	FR-651A	1 mL
FRS-011N	FR-1138	10 mg
FRS-011S	FR-1138	1 mL
FRS-012N	Hexabromobenzene (mich)	10 mg
FRS-012S	Hexabromobenzene (mich)	1 mL
FRS-013N	Hexabromobenzene(white)	10 mg
FRS-013S	Hexabromobenzene(white)	1 mL
FRS-014N	discontinued see A-012	
FRS-015N	Paroil 179-HV	10 mg
FRS-015S	Paroil 179-HV	1 mL
FRS-016N	Paroil 170-8	10 mg
FRS-016S	Paroil 170-8	1 mL
FRS-017N	Hexachlorobutadiene	10 mg
FRS-017S	Hexachlorobutadiene	1 mL
FRS-018N	Pentabromotoluene	10 mg
FRS-018S	Pentabromotoluene	1 mL
FRS-019N	Phosgard C 22-R	10 mg
FRS-019S	Phosgard C 22-R	1 mL
FRS-020N	Phosgard 2XC-20	10 mg
FRS-020S	Phosgard 2XC-20	1 mL
FRS-021N	Tetrabromo-o-chlorotoluene	10 mg
FRS-021S	Tetrabromo-o-chlorotoluene	1 mL
FRS-022N	Tetrachlorobisphenol A	10 mg
FRS-022S	Tetrachlorobisphenol A	1 mL
FRS-023N	TP-69	10 mg
FRS-023S	TP-69	1 mL
FRS-024N	Unichlor 40-90	10 mg
FRS-024S	Unichlor 40-90	1 mL
FRS-025N	Unichlor 502-50	10 mg
FRS-025S	Unichlor 502-50	1 mL
FRS-026N	Unichlor 70AX	10 mg

**PBDE Metabolites: Hydroxy and Methoxy
Polybromo Diphenyl Ether congeners**

These metabolites can be found wherever there are PBDE's, and they present their own toxicological hazard. This effect is well known with PCBs where the Hydroxylated species is often more toxic than the parent compounds.

Cat. No.	PBDE Metabolites	Conc.	Unit	CAS
HBDE-1001S-CN	2'-Hydroxy-4-monobromodiphenyl ether	50 µg/mL in Acetonitrile	1 mL	CAS n/a
HBDE-2001S-CN	3Æ-Hydroxy-2,4-dibromodiphenyl ether	50 µg/mL in Acetonitrile	1 mL	CAS n/a
HBDE-2002S-CN-0.2X	2'-Hydroxy-2,4-dibromodiphenyl ether	10 µg/mL in Acetonitrile	1 mL	CAS n/a
HBDE-3001S-CN	4'-Hydroxy-2,2',4-tribromodiphenyl ether	50 µg/mL in Acetonitrile	1 mL	CAS n/a
HBDE-3002S-CN	3'-Hydroxy-2,4,4Æ-tribromodiphenyl ether	50 µg/mL in Acetonitrile	1 mL	CAS n/a
HBDE-3003S-CN	2'-Hydroxy-2,4,4'-tribromodiphenyl ether	50 µg/mL in Acetonitrile	1 mL	CAS n/a
HBDE-4001S-CN	4-Hydroxy-2,2Æ,3,4Æ-tetrabromodiphenyl ether	50 µg/mL in Acetonitrile	1 mL	CAS n/a
HBDE-4001S-CN-0.2X	4-Hydroxy-2,2Æ,3,4Æ-tetrabromodiphenyl ether	10 µg/mL in Acetonitrile	1 mL	CAS n/a
HBDE-4002S-CN-0.2X	4Æ-Hydroxy-2,2Æ,4,5Æ-tetrabromodiphenyl ether	10 µg/mL in Acetonitrile	1 mL	CAS n/a
HBDE-4003S-CN	3-Hydroxy-2,2',4,4Æ-tetrabromodiphenyl ether	50 µg/mL in Acetonitrile	1 mL	CAS n/a
HBDE-4004S-CN	5-Hydroxy-2,2',4,4Æ-tetrabromodiphenyl ether	50 µg/mL in Acetonitrile	1 mL	CAS n/a
HBDE-4005S-CN-0.2X	6-Hydroxy-2,2',4,4'-tetrabromodiphenyl ether	10 µg/mL in Acetonitrile	1 mL	79755-43-4
HBDE-4006S-CN-0.2X	2'-Hydroxy-2,3',4,5'-Tetrabromodiphenyl ether	10 µg/mL in Acetonitrile	1 mL	
HBDE-5001S-CN-0.2X	4-Hydroxy-2,2',3,4Æ,5-pentabromodiphenyl ether	10 µg/mL in Acetonitrile	1 mL	CAS n/a
HBDE-5002S-CN-0.2X	6-Hydroxy-2,2',3,4,4'-pentabromodiphenyl ether	10 µg/mL in Acetonitrile	1 mL	CAS n/a
HBDE-5003S-CN-0.2X	6-Hydroxy-2,2',3,4,5Æ-pentabromodiphenyl ether	10 µg/mL in Acetonitrile	1 mL	CAS n/a
HBDE-5005S-CN-0.2X	6-Hydroxy-2,2',3,3',4-pentabromodiphenyl ether	10 µg/mL in Acetonitrile	1 mL	CAS n/a
HBDE-5006S-CN-0.2X	6'-Hydroxy-2,2',4,4',5-pentabromodiphenyl ether	10 µg/mL in Acetonitrile	1 mL	
HBDE-5007S-CN-0.2X	5'-Hydroxy-2,2',4,4',5-Pentabromodiphenyl ether	10 µg/mL in Acetonitrile	1 mL	
HBDE-6001S-CN-0.2X	6-Hydroxy-2,3,3',4,4',5'-hexabromodiphenyl ether	10 µg/mL in Acetonitrile	1 mL	CAS n/a
HBDE-6002S-CN-0.2X	6-Hydroxy-2,2',3,4,4',6'-hexabromodiphenyl ether	10 µg/mL in Acetonitrile	1 mL	
HBDE-6003S-CN-0.2X	3-Hydroxy-2,2',4,4',5',6-hexabromodiphenyl ether	10 µg/mL in Acetonitrile	1 mL	
MOBDE-1001S	2'-Methoxy-4-monobromodiphenyl ether	50 µg/mL in MeOH	1 mL	CAS n/a
MOBDE-2001S	3Æ-Methoxy-2,4-dibromodiphenyl ether	50 µg/mL in MeOH	1 mL	CAS n/a
MOBDE-2002S-0.2X	2'-Methoxy-2,4-dibromodiphenyl ether	10 µg/mL in MeOH	1 mL	
MOBDE-3001S	4'-Methoxy-2,2',4-tribromodiphenyl ether	50 µg/mL in MeOH	1 mL	CAS n/a
MOBDE-3002S	3'-Methoxy-2,4,4Æ-tribromodiphenyl ether	50 µg/mL in MeOH	1 mL	CAS n/a
MOBDE-3003S	2'-Methoxy-2,4,4'-tribromodiphenyl ether	50 µg/mL in MeOH	1 mL	CAS n/a
MOBDE-4001S-0.2X	4-Methoxy-2,2Æ,3,4Æ-tetrabromodiphenyl ether	10 µg/mL in MeOH	1 mL	CAS n/a
MOBDE-4002S-0.2X	4Æ-Methoxy-2,2Æ,4,5Æ-tetrabromodiphenyl ether	10 µg/mL in MeOH	1 mL	CAS n/a
MOBDE-4003S	3-Methoxy-2,2Æ,4,4Æ-tetrabromodiphenyl ether	50 µg/mL in MeOH	1 mL	CAS n/a
MOBDE-4004S	5-Methoxy-2,2Æ,4,4Æ-tetrabromodiphenyl ether	50 µg/mL in MeOH	1 mL	CAS n/a
MOBDE-4005S-0.2X	6-Methoxy-2,2',4,4'-tetrabromodiphenyl ether	10 µg/mL in MeOH	1 mL	CAS n/a
MOBDE-4006S-0.2X	2'-Methoxy-2,3',4,5'-Tetrabromodiphenyl ether	10 µg/mL in MeOH	1 mL	
MOBDE-5001S-0.2X	4-Methoxy-2,2Æ,3,4Æ,5-pentabromodiphenyl ether	10 µg/mL in MeOH	1 mL	CAS n/a
MOBDE-5002S-0.2X	6-Methoxy-2,2',3,4,4'-pentabromodiphenyl ether	10 µg/mL in MeOH	1 mL	CAS n/a
MOBDE-5003S-0.2X	6-Methoxy-2,2',3,4,5Æ-pentabromodiphenyl ether	10 µg/mL in MeOH	1 mL	CAS n/a
MOBDE-5005S-0.2X	6-Methoxy-2,2',3,3',4-pentabromodiphenyl ether	10 µg/mL in MeOH	1 mL	
MOBDE-5006S-0.2X	6'-Methoxy-2,2',4,4',5-pentabromodiphenyl ether	10 µg/mL in MeOH	1 mL	
MOBDE-5007S-0.2X	5'-Methoxy-2,2',4,4',5-pentabromodiphenyl ether	10 µg/mL in MeOH	1 mL	
MOBDE-6001S-0.2X	6-Methoxy-2,3,3',4,4',5'-hexabromodiphenyl ether	10 µg/mL in MeOH	1 mL	CAS n/a
MOBDE-6002S-0.2X	6-Methoxy-2,2',3,4,4',6'-hexabromodiphenyl ether	10 µg/mL in MeOH	1 mL	CAS n/a
MOBDE-6003S-0.2X	3-Methoxy-2,2',4,4',5',6-hexabromodiphenyl ether	10 µg/mL in MeOH	1 mL	CAS n/a

ISO/DIS 22032**DRAFT INTERNATIONAL STANDARD**

Cat. No.	ISO/DIS 22032 Calibration Curve Set								Unit
ISO/DIS-22032-SET	At stated conc. (ng/mL) in Isooctane; 8 components each								7x1 mL
	ISO/DIS-22032	1	2	3	4	5	6	7	
	2,2',4,4'-Tetrabromodiphenyl ether (#47)	5	12.5	25	50	100	150	250	
	2,2',4,4',5-Pentabromodiphenyl ether (#99)	5	12.5	25	50	100	150	250	
	2,2',4,4',6-Pentabromodiphenyl ether (#100)	5	12.5	25	50	100	150	250	
	2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	5	12.5	25	50	100	150	250	
	2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	5	12.5	25	50	100	150	250	
	2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183)	5	12.5	25	50	100	150	250	
	2,3,3',4,4',5,5',6-Octabromodiphenyl ether (#205)	5	12.5	25	50	100	150	250	
	2,2',3,3',4,4',5,5',6,6'-Decabromodiphenyl ether (#209)	25	50	100	200	500	700	1000	

Cat. No.	Internal Standard for BDE-47, 99 & 100	Unit
ISO22032-IS-1-5ML	100 ng/mL each in Isooctane	1x5 mL
ISO22032-IS-1-10ML	2,2',4,4'-Tetrabromodiphenyl ether	1x10 mL

Cat. No.	Internal Standard for BDE-153, 154 & 183	Unit
ISO22032-IS-2-5ML	100 ng/mL each in Isooctane	1x5 mL
ISO22032-IS-2-10ML	2,2',3,4,4',5,6-Heptabromodiphenyl ether	1x10 mL