

## Alkyl Phthalates and Benzyl Butyl Phthalate

Results of Testing

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
2-Ethylhexanol [related to Di(2-ethylhexyl) phthalate]	104-76-7	HEGTOXCHRM Chromosomal study (Voluntary test)	Non-TSCA Protocol/Guideline (docket OPTS-42005)	mice	intraperitoneal (i.p.), single dose, 2-doses; 24 hr apart	456 mg/kg/d	Not specified	The test material, 2-EH, did not induce significant differences in the percent micronucleated polychromatic erythrocytes in test animals. The test material was not considered to be clastogenic in this study.	48 FR 12124; 3/23/83 OTS0508477
2-Ethylhexanol [related to di(2-ethylhexyl) phthalate]	104-76-7	HEGTOXMUTA Mutagenicity study (Voluntary test)	Non-TSCA Protocol/Guideline (docket 42005)	Chinese hamster ovaries (CHO)	<i>in vitro</i>	20-300 nL/ml (nonactivation); 100-400 nL/ml (activation)	Not applicable	The test material, 2-EH, did not induce dose-related increases in mutant frequency, with or without activation. Dose-related toxicity was observed.	50 FR 1892; 5/3/85 OTS0508498
2-Ethylhexanol [related to Di(2-ethylhexyl) phthalate]	104-76-7	HEGTOXMUTA Mutagenicity study (Voluntary test)	Non-TSCA Protocol/Guideline (docket 42005)	<i>Salmonella typhimurium</i> strains	<i>in vitro</i>	0.002-1.80 µl/plate	Not applicable	The test material, 2-EH, did not induce genetic activity in any of the tester strains (TA 98, TA 100, TA 1535, TA 1537, TA 1538) in either the absence or presence of metabolic activation	48 FR 12124; 3/23/83 OTS0508477
2-Ethylhexanol [related to Di(2-ethylhexyl) phthalate]	104-76-7	HEGTOXMUTA Mutagenicity study (Voluntary test)	Non-TSCA Protocol/Guideline (docket 42005)	Chinese hamster ovaries (CHO)	<i>in vitro</i>	20-300 nL/ml (nonactivation); 100-400 nL/ml (activation)	Not applicable	The test material, 2-EH, did not induce dose-related increases in mutant frequency, with or without activation. Dose-related effects included decreased survival and relative population growth.	51 FR 6468; 2/24/86 OTS0509537
Dibutyl phosphate	107-66-4	EEATOX Algae acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Green alga	static, 6 d	0.05-1409.4 ppm	Not applicable	Toxic to the test algae. The EC <sub>50</sub> (population growth) value is 0.2 mg/L.	50 FR 5421; 2/6/85 OTS0508496
Di(2-ethylhexyl) phthalate	117-81-7	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Sheepshead minnow	flow-through, 96 hr	0.08-60 ppm (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 44142; 11/2/84 OTS0508492
Di(2-ethylhexyl) phthalate	117-81-7	EEATOX Acute chironomid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Paratanytarsus parthenogenica</i> (midge)	static, 48 hr	0.056-86.3 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 30114; 7/26/84 OTS0508488
Di(2-ethylhexyl) phthalate	117-81-7	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Rainbow trout	flow-through, 96 hr	0.013-100 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 18779; 5/2/84 OTS0508486
Di(2-ethylhexyl) phthalate	117-81-7	EEATOX Acute mysid shrimp toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Mysid shrimp	static, 96 hr	0.056-86.0 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 30114; 7/26/84 OTS0508488
Di(2-ethylhexyl) phthalate	117-81-7	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Bluegill	static, 96 hr	0.34-1.0 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Di(2-ethylhexyl) phthalate	117-81-7	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	static, 96 hr	<0.0037 to 210 mg/L (5 concentrations/test material up to limit of solubility)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481

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**Alkyl Phthalates and Benzyl Butyl Phthalate**

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Di(2-ethylhexyl) phthalate	117-81-7	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	flow-through, 96 hr	0.026-34 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Di(2-ethylhexyl) phthalate	117-81-7	EEATOX Algae acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Green alga	static, 6 d	0.05-1409.4 ppm	Not applicable	No acute toxicity below the limit of aqueous solubility.	50 FR 5421; 2/6/85 OTS0508496
Di(2-ethylhexyl) phthalate	117-81-7	EEATOX Daphnid acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	static, 48 hr	5 concentrations up to water solubility limits	Not specified	The 48-hour LC <sub>50</sub> value is >0.32 mg/L.	49 FR 44142; 11/2/84 OTS0508492
Di(2-ethylhexyl) phthalate	117-81-7	EECTOX Chronic daphnid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	flow-through, 21 d	0.015-80 mg/L (measured)	Not specified	Non-toxic.	50 FR 5421; 2/6/85 OTS0508496
Di(2-ethylhexyl) phthalate	117-81-7	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	23° C, 24 hr, CO <sub>2</sub> by GC	1 mg/L	Not applicable	Exhibited at least 50% primary degradation in 24 hours.	49 FR 44142; 11/2/84 OTS0508490
Di(2-ethylhexyl) phthalate	117-81-7	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	shake flask, 28 d, CO by GC	4 mg carbon/equivalent	Not applicable	Primary biodegradation of 90% or higher and ultimate biodegradation of 55%.	48 FR 53159; 11/25/83 OTS0508481
Di(2-ethylhexyl) phthalate	117-81-7	EFCHEWSOL Water solubility	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	deionized water, well and sea water; equilibrate for 24 h at 25 ± 2°C; analysis by GC	Not specified	Not applicable	Solubilities for distilled, well and sea water of 0.34 ± 0.04, 0.30 ± 0.05, and 0.16 ± 0.04 mg/L, respectively.	48 FR 34119; 7/27/83 OTS0508479
Di(2-ethylhexyl) phthalate	117-81-7	EFPCHVPRE Vapor Pressure	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	25 °C, analysis by GC	Not specified	Not applicable	Vapor pressure = 8.6 × 10 <sup>-4</sup> .	49 FR 44124; 11/2/84 OTS0508490
Di(2-ethylhexyl) phthalate	117-81-7	EFTSPT Sediment adsorption isother	796.2750 (modified)	Not applicable	Not specified	0.006, 0.025, 0.041, 0.075, 0.099, 0.141 ml aliquots	Not applicable	The mean percents adsorbed to sediments EPA 8, EPA 18, EPA 21 were 70.2%, 90.6%, and 92.0%, respectively. Correlation coefficients were 0.9606, 0.9539, and 0.9857 for sediments EPA 8, EPA 18, and EPA 21, respectively. HPLC analysis of aqueous adsorption phases and sediment extracts demonstrated stability. The mean C14-mass balance accountabilities were 102%, 107%, and 107% for sediments EPA 8, EPA 18, EPA 21, respectively.	56 FR 42623; 8/28/91 OTS0533017
Di(2-ethylhexyl) phthalate	117-81-7	HEADME Metabolism study	Non-TSCA Protocol/Guideline (docket 42005)	monkeys, rats, mice	oral (gavage), single dose	100 mg/kg	3 monkeys, 5 male rats, 5 mice	30 to 40% of the dose of DEHP was excreted in the urine during the first 12 hours for rats and mice, and during the first 24 hours for monkeys. Approximately 50% of the dose was excreted in the feces, primarily in the first 24 hours for rats and mice, and 48 hours for monkeys. Recoveries of the labelled test material administered were 79, 87, and 90% for monkeys, rats, and mice, respectively.	50 FR 5421; 2/06/85 OTS0508494

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## Alkyl Phthalates and Benzyl Butyl Phthalate

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
2-Ethylhexanol [related to Di(2-ethylhexyl) phthalate]	117-81-7	HECTOXRFRM Morphological transformation (Voluntary test)	Non-TSCA Protocol/Guideline (docket 42005)	mice, BALB 3T3 cells	<i>in vitro</i>	0.188, 0.375, 0.75, 1.125, 1.5 µl/ml	Not applicable	The test material, 2-EH, did not induce an increased number of transformed foci at any of the concentrations tested, with or with activation.	48 FR 12124; 3/23/83 OTS0508477
Di(2-ethylhexyl) phthalate	117-81-7	HEGTOXCHRM Chromosomal study (Voluntary test)	Non-TSCA Protocol/Guideline (docket 42005)	mice	intraperitoneal (i.p.), single dose, 2-doses; 24 hr apart	5 g/kg/day	Not specified	The test material, DEHP, did not induce micronuclei in the bone marrow of the test animals. There was no significant difference in the percent micronucleated polychromatic erythrocytes between the test animals and the controls. The test material was therefore non-clastogenic in this study.	48 FR 12124; 3/23/83 OTS0508477
Di(2-ethylhexyl) phthalate	117-81-7	HEGTOXDNAF Unscheduled DNA synthesis (Voluntary test)	Non-TSCA Protocol/Guideline (docket 42005)	rat primary hepatocytes	<i>in vitro</i>	5, 10, 25, 50 100, 250, 500, 1000 nl/ml	Not specified	The test material, DEHP, did not induce significant changes in the nuclear labelling of the tester cells, with or without activation. The test material was considered inactive in this study.	48 FR 12124; 3/23/83 OTS0508477
Di(2-ethylhexyl) phthalate	117-81-7	HEGTOXMUTA Mutagenicity study (Voluntary test)	Non-TSCA Protocol/Guideline (docket 42005)	Chinese hamster ovaries (CHO)	<i>in vitro</i>	5.0-80.0 nl/ml	Not applicable	DEHP was nontoxic at all concentrations. There were no dose-related increases in mutation frequency.	51 FR 6468; 2/24/86 OTS0509537
Di(2-ethylhexyl) phthalate	117-81-7	HEGTOXMUTA Mutagenicity study (Voluntary test)	Non-TSCA Protocol/Guideline (docket 42005)	Mouse lymphoma cells L5178Y TK	<i>in vitro</i>	7.81-250 nl/ml (nonactivation) 7.81-125 nl/ml (activation)	Not applicable	The test material, DEHP, did not induce increased mutant frequency at the TK locus in the absence or presence of metabolic activation.	48 FR 12124; 3/23/83 OTS0508477
Di(2-ethylhexyl) phthalate	117-81-7	HEGTOXMUTA Mutagenicity study (Voluntary test)	Non-TSCA Protocol/Guideline (docket 42005)	Salmonella typhimurium strains	<i>in vitro</i>	0.15-150 µl/plate	Not applicable	The test material, DEHP, did not induce genetic activity in any of the tester strains (TA 98, TA 100, TA 1535, TA 1537, TA 1538) in either the absence or presence of metabolic activation.	48 FR 12124; 3/23/83 OTS0508477
Di(2-ethylhexyl) phthalate	117-81-7	HEGTOXMUTA Mutagenicity study (Voluntary test)	Non-TSCA Protocol/Guideline (docket 42005)	Chinese hamster ovaries (CHO)	<i>in vitro</i>	5.0-80.0 nl/ml	Not applicable	No toxicity was observed with DEHP at any test concentration There were no dose-related increases in mutant frequency.	50 FR 1892; 5/3/85 OTS0508498
Di(2-ethylhexyl) phthalate	117-81-7	HESTOX Subchronic toxicity	Non-TSCA Protocol/Guideline (docket 42005)	rats	oral (dietary), 21 d	0, 0.01, 0.1, 0.6, 1.2, 2.5%	5 male; 5 female	Test animals exposed to 2.5% of di-2-ethylhexyl phthalate (DEHP) lost weight during the first week, and body weights were significantly reduced compared to the controls. There was initial reduction in weight gain in the 1.2% groups. Food consumption was reduced in both sexes at 1.2 and 2.5%. In both sexes, a statistically significant increase in liver weights was observed at 0.6, 1.2, and 2.5%. Histological examinations showed a reduction in cytoplasmic basophilia in livers of male rats exposed to 0.6, 1.2, and 2.5%.	51 FR 6468; 2/24/86 OTS0509537
Di(2-ethylhexyl) adipate	123-79-5	HECTOXRFRM Morphological transformation (Voluntary test)	Non-TSCA Protocol/Guideline (docket 42005)	mice, BALB 3T3 cells	<i>in vitro</i>	1.95, 7.81, 31.3, 125, 500 nl/ml	Not applicable	The test material, di(2-ethylhexyl) adipate (DEHA), did not induce an increased number of transformed foci at any of the concentrations tested, with or without activation.	48 FR 12124; 3/23/83 OTS0508477

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## Alkyl Phthalates and Benzyl Butyl Phthalate

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Di(2-ethylhexyl) adipate	123-79-5	HEGTOXDNAF Unscheduled DNA synthesis (Voluntary test)	Non-TSCA Protocol/Guideline (docket 42005)	rat primary hepatocytes	<i>in vitro</i>	5, 10, 25, 50 100, 250, 500, 1000 nl/ml	Not applicable	The test material, DEHA, did not induce significant changes in the nuclear labelling of the tester cells, with or without activation. The test material was considered inactive in this study.	48 FR 12124; 3/23/83 OTS0508477
Di(2-ethylhexyl) adipate	123-79-5	HESTOX Subchronic oral study	Non-TSCA Protocol/Guideline (docket 42005)	rats	diet, 21 d	0, 0.6, 1.2, 2.5%	5/sex/group	The rats fed 2.5% lost weight during the first 3 days of treatment and were lighter than the controls. The males fed 2.5% had lower food consumption. The weights and relative weights of the livers of both sexes were increased at 1.2 and 2.5%, and also 0.6% in the females. No reduction in testes weights was observed. There was a dose related reduction of hepatic neutral lipid deposition in all treated rats. Cyanide-insensitive palmitoyl-Coa oxidation was significantly increased in both sexes fed 2.5% and in males fed 1.2%. Lauric acid 11-hydroxylase activity was increased in males (not dose related). The 12-hydroxylase activity was increased in all treated males and 2.5% females. There was a dose related proliferations of peroxisome in all treated groups.	51 FR 16203; 5/1/86 OTS0509543
Dimethyl phthalate	131-11-3	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Rainbow trout	flow-through, 96 hr	0.013-100 mg/L (measured)	Not specified	Toxic at concentrations below the limit of aqueous solubility. The 96 hr LC <sub>50</sub> value is 56 mg/L.	49 FR 18779; 5/2/84 OTS0508486
Dimethyl phthalate	131-11-3	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Sheepshead minnow	flow-through, 96 hr	0.08-60 ppm (measured)	Not specified	Toxic to the sheepshead minnow. The 96-hour LC <sub>50</sub> value is 29 mg/L	49 FR 44142; 11/2/84 OTS0508492
Dimethyl phthalate	131-11-3	EEATOX Acute mysid shrimp toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Mysid shrimp	static, 96 hr	0.056-86.0 mg/L (measured)	Not specified	Toxic to the mysid shrimp. The 96-hour LC <sub>50</sub> value is 76 mg/L	49 FR 30114; 7/26/84 OTS0508488
Dimethyl phthalate	131-11-3	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	static, 96 hr	<0.0037 to 210 mg/L (5 concentrations/test material up to limit of solubility)	Not specified	Toxic at concentrations below the limit of aqueous solubility. The LC <sub>50</sub> value is 120 mg/L.	48 FR 53159; 11/25/83 OTS0508481
Dimethyl phthalate	131-11-3	EEATOX Algae acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Green alga	static, 6 d	0.05-1409.4 ppm	Not applicable	Toxic to the test algae. The EC <sub>50</sub> (population growth) value is 145.6 mg/L.	50 FR 5421; 2/6/85 OTS0508496
SDimethyl phthalate	131-11-3	EEATOX Acute chironomid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Paratanytarsus parthenogenica</i> (midge)	static, 48 hr	0.056-86.3 mg/L (measured)	Not specified	Toxic to the midge. The 48-hour LC <sub>50</sub> value is 76 mg/L.	49 FR 30114; 7/26/84 OTS0508488
Dimethyl phthalate	131-11-3	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Bluegill	static, 96 hr	0.34-1.0 mg/L (measured)	Not specified	Toxic to the bluegill. The 96-hour LC <sub>50</sub> value is 67 mg/L.	48 FR 53159; 11/25/83 OTS0508481
Dimethyl phthalate	131-11-3	EEATOX Daphnid acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	static, 48 hr	5 concentrations up to water solubility limits	Not specified	The 48-hour LC <sub>50</sub> value is >52 mg/L.	49 FR 44142; 11/2/84 OTS0508492

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**Alkyl Phthalates and Benzyl Butyl Phthalate**

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Dimethyl phthalate	131-11-3	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	flow-through, 96 hr	0.026-34 mg/L (measured)	Not specified	Toxic to the fathead minnow. The 96-hour LC <sub>50</sub> value is 39 mg/L.	48 FR 53159; 11/25/83 OTS0508481
Dimethyl phthalate	131-11-3	EECLIF Fish early life stage	797.1600 (modified)	Rainbow trout ( <i>Oncorhynchus mykiss</i> )	flow-through, 102 days	0, 4.8, 9.0, 15.0, 30.0, 60.0 mg/L (nominal)	30	Exposure of embryos, larvae, and juvenile fish to the test substance resulted in a lowest observed effect concentration of 30 mg/L, a no observed effect concentration (NOEC) of 15.0 mg/L, and a maximum acceptable toxicant concentration (MATC) of 16 mg/L. The most sensitive parameter was survival at the conclusion of the test, no rainbow trout survived to hatch at 60 mg/L, and significantly reduced at 30 mg/L.	OTS0533141
Dimethyl phthalate	131-11-3	EECTOX Chronic daphnid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	flow-through, 21 d	0.015-80 mg/L (measured)	Not specified	Toxic to <i>Daphnia magna</i> . Maximum affect test concentration (MATC) was 15 mg/L.	50 FR 5421; 2/6/85 OTS0508496
Dimethyl phthalate	131-11-3	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	23° C, 24 hr, CO <sub>2</sub> by GC	1 mg/L	Not applicable	Primary degradation in excess of 90% in 24 hours.	49 FR 44142; 11/2/84 OTS0508490
Dimethyl phthalate	131-11-3	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	shake flask, 28 d, CO by GC	4 mg carbon/equivalent	Not applicable	Primary biodegradation of 90% or higher and ultimate biodegradation of 55%.	48 FR 53159; 11/25/83 OTS0508481
Dimethyl phthalate	131-11-3	EFCHWSOL Water solubility	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	deionized water, well and sea water; equilibrate for 24 h at 25 ± 2°C; analysis by GC	Not specified	Not applicable	In distilled water, DMP had a solubility of 4000 ± 60 mg/L in well water, 3960 ± 230 mg/L, and for sea water 3160 ± 160 mg/L.	48 FR 34119; 7/27/83 OTS0508479
Dimethyl phthalate	131-11-3	EFPCHEPART Octanol/water partition	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	octanol/deionized water at 25 °C, analysis by GC	10 <sup>-2</sup> M	Not applicable	The log Kow value with standard errors was 1.47 ± 0.086.	49 FR 44142; 11/2/84 OTS0508491
Dimethyl phthalate	131-11-3	EFPCHEVPRE Vapor Pressure	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	25 °C, analysis by GC	Not specified	Not applicable	Vapor pressure = 2.2 x 10 <sup>-1</sup> .	49 FR 44124; 11/2/84 OTS0508490
Dimethyl phthalate	131-11-3	HECTOXTRFM Morphological transformation	Non-TSCA Protocol/Guideline (docket 42005)	mice, BALB 3T3 cells	<i>in vitro</i>	62.1-931.6 nl/ml	Not applicable	The test material, dimethyl phthalate (DMP), did not induce significant increases in transformed foci frequency, with or without activation.	50 FR 46699; 11/12/85 OTS0509537
Dimethyl phthalate	131-11-3	HEGTOXMUTA Mutagenicity study	Non-TSCA Protocol/Guideline (docket 42005)	mouse, L5178Y cells	<i>in vitro</i>	9.77, 19.5, 39.1, 78.1, 156, 313, 625, 1250, 2500, 5000 nl/ml	Not applicable	The test material, DMP, in the absence of metabolic activation was weakly toxic at 625 nl/ml after 48 hours. In the presence of metabolic activation, the test material was lethal at 1250 nl/ml.	51 FR 6468; 2/24/86 OTS0509537
Diisooctyl phthalate	27554-26-3	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Sheepshead minnow	flow-through, 96 hr	0.08-60 ppm (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 44142; 11/2/84 OTS0508492
Diisooctyl phthalate	27554-26-3	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Bluegill	static, 96 hr	0.34-1.0 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481

**G004**  
**Alkyl Phthalates and Benzyl Butyl Phthalate**

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Diisooctyl phthalate	27554-26-3	EEATOX Acute chironomid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Paratanytarsus parthenogenica</i> (midge)	static, 48 hr	0.056-86.3 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 30114; 7/26/84 OTS0508488
Diisooctyl phthalate	27554-26-3	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Rainbow trout	flow-through, 96 hr	0.013-100 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 18779; 5/2/84 OTS0508486
Diisooctyl phthalate	27554-26-3	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	flow-through, 96 hr	0.026-34 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Diisooctyl phthalate	27554-26-3	EEATOX Algae acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Green alga	static, 6 d	0.05-1409.4 ppm	Not applicable	No acute toxicity below the limit of aqueous solubility.	50 FR 5421; 2/6/85 OTS0508496
Diisooctyl phthalate	27554-26-3	EEATOX Acute mysid shrimp toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Mysid shrimp	static, 96 hr	0.056-86.0 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 30114; 7/26/84 OTS0508488
Diisooctyl phthalate	27554-26-3	EEATOX Daphnid acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	static, 48 hr	5 concentrations up to water solubility limits	Not specified	The 48-hour LC <sub>50</sub> value is >0.22 mg/L.	49 FR 44142; 11/2/84 OTS0508492
Diisooctyl phthalate	27554-26-3	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	static, 96 hr	<0.0037 to 210 mg/L (5 concentrations/test material up to limit of solubility)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Diisooctyl phthalate	27554-26-3	EECTOX Chronic daphnid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	flow-through, 21 d	0.015-80 mg/L (measured)	Not specified	Non-toxic.	50 FR 5421; 2/6/85 OTS0508496
Diisooctyl phthalate	27554-26-3	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	23° C, 24 hr, CO <sub>2</sub> by GC	1 mg/L	Not applicable	Exhibited at least 50% primary degradation in 24 hours.	49 FR 44142; 11/2/84 OTS0508490
Diisooctyl phthalate	27554-26-3	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	shake flask, 28 d, CO by GC	4 mg carbon/equivalent	Not applicable	Primary biodegradation of 90% or higher and ultimate biodegradation of 55%.	48 FR 53159; 11/25/83 OTS0508481
Diisooctyl phthalate	27554-26-3	EFCHEWSOL Water solubility	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	deionized water; equilibrate for 24 h at 25 ± 2°C; analysis by GC	Not specified	Not applicable	Solubility in distilled water = 0.09 ± 0.01 mg/L.	48 FR 34119; 7/27/83 OTS0508479
Diisooctyl phthalate	27554-26-3	EFPCHVPRE Vapor Pressure	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	25 °C, analysis by GC	Not specified	Not applicable	Vapor pressure = 7.4 x 10 <sup>-4</sup> .	49 FR 44124; 11/2/84 OTS0508490
Diundecyl phthalate	3648-20-2	EEATOX Acute chironomid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Paratanytarsus parthenogenica</i> (midge)	static, 48 hr	0.056-86.3 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 30114; 7/26/84 OTS0508488

**G004**  
**Alkyl Phthalates and Benzyl Butyl Phthalate**

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Diundecyl phthalate	3648-20-2	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Bluegill	static, 96 hr	0.34-1.0 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Diundecyl phthalate	3648-20-2	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	static, 96 hr	<0.0037 to 210 mg/L (5 concentrations/test material up to limit of solubility)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Diundecyl phthalate	3648-20-2	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	flow-through, 96 hr	0.026-34 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Diundecyl phthalate	3648-20-2	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Sheepshead minnow	flow-through, 96 hr	0.08-60 ppm (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 44142; 11/2/84 OTS0508492
Diundecyl phthalate	3648-20-2	EEATOX Daphnid acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	static, 48 hr	5 concentrations up to water solubility limits	Not specified	The 48-hour LC <sub>50</sub> value is >0.22 mg/L.	49 FR 44142; 11/2/84 OTS0508492
Diundecyl phthalate	3648-20-2	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Rainbow trout	flow-through, 96 hr	0.013-100 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 18779; 5/2/84 OTS0508486
Diundecyl phthalate	3648-20-2	EEATOX Acute mysid shrimp toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Mysid shrimp	static, 96 hr	0.056-86.0 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 30114; 7/26/84 OTS0508488
Diundecyl phthalate	3648-20-2	EEATOX Algae acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Green alga	static, 6 d	0.05-1409.4 ppm	Not applicable	No acute toxicity below the limit of aqueous solubility.	50 FR 5421; 2/6/85 OTS0508496
Diundecyl phthalate	3648-20-2	EECTOX Chronic daphnid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	flow-through, 21 d	0.015-80 mg/L (measured)	Not specified	Non-toxic.	50 FR 5421; 2/6/85 OTS0508496
Diundecyl phthalate	3648-20-2	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	shake flask, 28 d, CO by GC	4 mg carbon/equivalent	Not applicable	Primary biodegradation of 90% or higher and ultimate biodegradation of 55%.	48 FR 53159; 11/25/83 OTS0508481
Diundecyl phthalate	3648-20-2	EFCHEWSOL Water solubility	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	deionized water; equilibrate for 24 h at 25 ± 2°C; analysis by GC	Not specified	Not applicable	Solubility in distilled water = <0.03 mg/L.	48 FR 34119; 7/27/83 OTS0508479
Diundecyl phthalate	3648-20-2	HECTOXTRFM Morphological transformation	Non-TSCA Protocol/Guideline (docket 42005)	mice, BALB 3T3 cells	<i>in vitro</i>	4000-100,000 nl/ml	Not applicable	The test material, diundecyl phthalate (DUP), was nontoxic, and did not induce a significantly increased frequency in transformed foci, with or without activation.	50 FR 46699; 11/12/85 OTS0509537
Diundecyl phthalate	3648-20-2	HEGTOXMUTA Mutagenicity study	Non-TSCA Protocol/Guideline (docket 42005)	mouse, L5178Y cells	<i>in vitro</i>	2000 - 10,000 nl/ml (nonactivation); 1000 - 8000 nl/ml (activation)	Not applicable	The test substance did not induce any significant increases in the mutant frequency at the thymidine kinase (TK) locus, with or without activation.	51 FR 39799; 10/31/86 OTS0510528

**G004**  
**Alkyl Phthalates and Benzyl Butyl Phthalate**

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Diundecyl phthalate	3648-20-2	HEGTOXMUTA Mutagenicity study	Non-TSCA Protocol/Guideline (docket 42005)	mouse, L5178Y cells	<i>in vitro</i>	9.77, 19.5, 39.1, 78.1, 156, 313, 625, 1250, 2500, 5000 nL/ml	Not applicable	In the absence and presence of metabolic activation, the test material, DUP, showed a concentration-related increase in toxicity.	51 FR 6468; 2/24/86 OTS0509537
Mono-2-ethylhexyl phthalate	4376-20-9	HECTOXTRFM Morphological transformation (Voluntary test)	Non-TSCA Protocol/Guideline (docket 42005)	mice, BALB 3T3 cells	<i>in vitro</i>	25, 50, 75, 100, 125 nL/ml	Not applicable	The test material, mono-2-ethylhexyl phthalate (MEHP), did not induce an increased number of transformed foci at any of the concentrations tested, with or without activation.	48 FR 12124; 3/23/83 OTS0508477
Mono-2-ethylhexyl phthalate	4376-20-9	HEGTOXCHRM Chromosomal study (Voluntary test)	Non-TSCA Protocol/Guideline (docket 42005)	mice	intraperitoneal (i.p.), single dose, 2-doses; 24 hr apart	125 mg/kg/day	Not specified	The test material, MEHP, induced a significant increase in micronucleated polychromatic erythrocytes of female test animals in the repeated test group. Males in the acute and repeated treatment groups had no significant increases in the percent of micronucleated polychromatic erythrocytes when compared to the controls.	48 FR 12124; 3/23/83 OTS0508477
Mono-2-ethylhexyl phthalate	4376-20-9	HEGTOXMUTA Mutagenicity study (Voluntary test)	Non-TSCA Protocol/Guideline (docket 42005)	Salmonella typhimurium strains	<i>in vitro</i>	1.03-1030 µg/plate	Not applicable	The test material, MEHP, did not induce genetic activity in any of the tested strains (TA 98, TA 100, TA 1535, TA 1537, TA 1538) in either the absence or presence of metabolic activation.	48 FR 12124; 3/23/83 OTS0508477
Mono-2-ethylhexyl phthalate	4376-20-9	HEGTOXMUTA Mutagenicity study	Non-TSCA Protocol/Guideline (docket 42005)	Chinese hamster ovaries (CHO)	<i>in vitro</i>	50-350 nL/ml (nonactivation) 20-200 nL/ml (activation)	Not applicable	The test material, MEHP, was highly toxic and/or lethal at concentrations above 350 nL/ml without activation and above 200 nL/ml with activation. The remaining concentrations did not induce increases in mutant frequency, and none were toxic.	50 FR 1892; 5/3/85 OTS0508498
Di(heptyl, nonyl, undecyl) phthalate	68515-42-4	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Bluegill	static, 96 hr	0.34-1.0 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Di(heptyl, nonyl, undecyl) phthalate	68515-42-4	EEATOX Acute chironomid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Paratanytarsus parthenogenica</i> (midge)	static, 48 hr	0.056-86.3 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 30114; 7/26/84 OTS0508488
Di(heptyl, nonyl, undecyl) phthalate	68515-42-4	EEATOX Daphnid acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	static, 48 hr	5 concentrations up to water solubility limits	Not specified	The 48-hour LC <sub>50</sub> value is >0.062 mg/L.	49 FR 44142; 11/2/84 OTS0508492
Di(heptyl, nonyl, undecyl) phthalate	68515-42-4	EECLIF Fish early life stage	797.1600 (modified)	Rainbow trout ( <i>Oncorhynchus mykiss</i> )	flow-through, 152 days	0, 0.38, 0.075, 0.15, 0.30, 0.60 mg/L (nominal)	20	The results indicate that embryo hatchability, fry survival, standard length and blotted wet weight was not significantly affected at any concentration. No statistical evidence of treatment-related effects were observed during this study at 0.60 mg/L.	OTS0533140
Di(heptyl, nonyl, undecyl) phthalate	68515-42-4	EECTOX Chronic daphnid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	flow-through, 21 d	0.015-80 mg/L (measured)	Not specified	Non-toxic.	50 FR 5421; 2/6/85 OTS0508496
Di(heptyl, nonyl, undecyl) phthalate	68515-42-4	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	23° C, 24 hr, CO <sub>2</sub> by GC	1 mg/L	Not applicable	Exhibited at least 50% primary degradation in 24 hours.	49 FR 44142; 11/2/84 OTS0508490

**G004**  
**Alkyl Phthalates and Benzyl Butyl Phthalate**

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Di(heptyl, nonyl, undecyl) phthalate	68515-42-4	HECTOXTRFM Morphological transformation	Non-TSCA Protocol/Guideline (docket 42005)	mice, BALB 3T3 cells	<i>in vitro</i>	60-6000 nl/ml	Not applicable	The test material, di(heptyl, nonyl, undecyl) phthalate (711P), did not induce a significant number of transformed foci over the concentration range with or without activation.	50 FR 46699; 11/12/85 OTS0509537
Di(heptyl, nonyl, undecyl) phthalate	68515-42-4	HEGTOXMUTA Mutagenicity study	Non-TSCA Protocol/Guideline (docket 42005)	mouse, L5178Y cells	<i>in vitro</i>	750 - 6000 nl/ml (nonactivation); 125 - 1500 nl/ml (activation)	Not applicable	The test substance did not induce any significant increases in the mutant frequency at the thymidine kinase (TK) locus, with or without activation.	51 FR 39799; 10/31/86 OTS0510528
Di(heptyl, nonyl, undecyl) phthalate	68515-42-4	HEGTOXMUTA Mutagenicity study	Non-TSCA Protocol/Guideline (docket 42005)	mouse, L5178Y cells	<i>in vitro</i>	9.77, 19.5, 39.1, 78.1, 156, 313, 625, 1250, 2500, 5000 nl/ml	Not applicable	In the absence of metabolic activation, the test material, was highly toxic at 2500 and 5000 nl/ml. In the presence of metabolic activation, the test material was lethal at 5000 nl/ml, and the 1250 and 2500 nl/ml media were highly toxic.	51 FR 6468; 2/24/86 OTS0509537
Di(heptyl, nonyl, undecyl) phthalate	68515-42-4	HESTOX Subchronic oral study	Non-TSCA Protocol/Guideline (docket 42005)	rats	diet, 21 d	0, 0.3, 1.2, 2.5%	5/sex/group	The treatment decreased body weight gain (mid- and high dose males), food intake (high-dose males), and testis weights (high-dose males) and increased relative liver (mid- and high-dose, both sexes) and kidney weights (mid- and high-dose females, and high-dose males). In livers of treated rats, vacuolization of hepatocytes with cell necrosis (mid- and high-dose males), peroxisomes (high-dose males), cyanide-insensitive palmitoyl-CoA oxidation (mid- and high-dose, both sexes), and lauric acid 12-hydroxylase (all levels, both sexes) were all increased and cytoplasmic basophilia was reduced (high-dose females). There was a treatment-related decrease in periportal lipids in females, and serum triglyceride and cholesterol levels were reduced in all treated males.	51 FR 16203; 5/1/86 OTS0509543
Ditridecyl phthalate	68515-47-9	EEATOX Algae acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Green alga	static, 6 d	0.05-1409.4 ppm	Not applicable	No acute toxicity below the limit of aqueous solubility.	50 FR 5421; 2/6/85 OTS0508496
Ditridecyl phthalate	68515-47-9	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Rainbow trout	flow-through, 96 hr	0.013-100 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 18779; 5/2/84 OTS0508486
Ditridecyl phthalate	68515-47-9	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	static, 96 hr	<0.0037 to 210 mg/L (5 concentrations/test material up to limit of solubility)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Ditridecyl phthalate	68515-47-9	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Sheepshead minnow	flow-through, 96 hr	0.08-60 ppm (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 44142; 11/2/84 OTS0508492
Ditridecyl phthalate	68515-47-9	EEATOX Acute mysid shrimp toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Mysid shrimp	static, 96 hr	0.056-86.0 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 30114; 7/26/84 OTS0508488
Ditridecyl phthalate	68515-47-9	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Bluegill	static, 96 hr	0.34-1.0 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481

## Alkyl Phthalates and Benzyl Butyl Phthalate

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Ditridecyl phthalate	68515-47-9	EEATOX Daphnid acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	static, 48 hr	5 concentrations up to water solubility limits	Not specified	The 48-hour LC <sub>50</sub> value is >0.68 mg/L.	49 FR 44142; 11/2/84 OTS0508492
Ditridecyl phthalate	68515-47-9	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	flow-through, 96 hr	0.026-34 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Ditridecyl phthalate	68515-47-9	EEATOX Acute chironomid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Paratanytarsus parthenogenica</i> (midge)	static, 48 hr	0.056-86.3 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 30114; 7/26/84 OTS0508488
Ditridecyl phthalate	68515-47-9	EECTOX Chronic daphnid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	flow-through, 21 d	0.015-80 mg/L (measured)	Not specified	Non-toxic.	50 FR 5421; 2/6/85 OTS0508496
Ditridecyl phthalate	68515-47-9	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	shake flask, 28 d, CO by GC	4 mg carbon/equivalent	Not applicable	Primary biodegradation of 90% or higher and ultimate biodegradation of 55%.	48 FR 53159; 11/25/83 OTS0508481
Ditridecyl phthalate	68515-47-9	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	23° C, 24 hr, CO <sub>2</sub> by GC	1 mg/L	Not applicable	Exhibited at least 50% primary degradation in 24 hours.	49 FR 44142; 11/2/84 OTS0508490
Ditridecyl phthalate	68515-47-9	EFCHEWSOL Water solubility	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	deionized water; equilibrate for 24 h at 25 ± 2°C; analysis by GC	Not specified	Not applicable	Solubility in distilled water = 1.19 ± 0.19 mg/L.	48 FR 34119; 7/27/83 OTS0508479
Ditridecyl phthalate	68515-47-9	EFTSPT Sediment adsorption isotherm	796.2750 (modified)	Not applicable	Not specified.	0.003, 0.012, 0.024, 0.036, 0.049, 0.073 ml aliquots	Not applicable	The mean percents adsorbed to sediments EPA 8, EPA 18, EPA 21 were 80.3%, 82.5%, and 81.1%, respectively. Correlation coefficients were 0.928, 0.939, and 0.963 for sediments EPA 8, EPA 18, and EPA 21, respectively. HPLC analysis of aqueous adsorption phases and sediment extracts demonstrated stability. The mean C14-mass balance accountabilities were 99.5%, 103%, and 102% for sediments EPA 8, EPA 18, EPA 21, respectively.	56 FR 42623; 8/28/91  OTS05 33017
Diisononyl phthalate	68515-48-0	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Sheepshead minnow	flow-through, 96 hr	0.08-60 ppm (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 44142; 11/2/84 OTS0508492
Diisononyl phthalate	68515-48-0	EEATOX Acute chironomid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Paratanytarsus parthenogenica</i> (midge)	static, 48 hr	0.056-86.3 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 30114; 7/26/84 OTS0508488
Diisononyl phthalate	68515-48-0	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Bluegill	static, 96 hr	0.34-1.0 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Diisononyl phthalate	68515-48-0	EEATOX Algae acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Green alga	static, 6 d	0.05-1409.4 ppm	Not applicable	No acute toxicity below the limit of aqueous solubility.	50 FR 5421; 2/6/85 OTS0508496

**G004**  
**Alkyl Phthalates and Benzyl Butyl Phthalate**

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Diisononyl phthalate	68515-48-0	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	flow-through, 96 hr	0.026-34 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Diisononyl phthalate	68515-48-0	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	static, 96 hr	<0.0037 to 210 mg/L (5 concentrations/test material up to limit of solubility)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Diisononyl phthalate	68515-48-0	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Rainbow trout	flow-through, 96 hr	0.013-100 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 18779; 5/2/84 OTS0508486
Diisononyl phthalate	68515-48-0	EEATOX Daphnid acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	static, 48 hr	5 concentrations up to water solubility limits	Not specified	The 48-hour LC <sub>50</sub> value is >0.086 mg/L.	49 FR 44142; 11/2/84 OTS0508492
Diisononyl phthalate	68515-48-0	EEATOX Acute mysid shrimp toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Mysid shrimp	static, 96 hr	0.056-86.0 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 30114; 7/26/84 OTS0508488
Diisononyl phthalate	68515-48-0	EECTOX Chronic daphnid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	flow-through, 21 d	0.015-80 mg/L (measured)	Not specified	Non-toxic.	50 FR 5421; 2/6/85 OTS0508496
Diisononyl phthalate	68515-48-0	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	shake flask, 28 d, CO by GC	4 mg carbon/equivalent	Not applicable	Primary biodegradation of 90% or higher and ultimate biodegradation of 55%.	48 FR 53159; 11/25/83 OTS0508481
Diisononyl phthalate	68515-48-0	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	23° C, 24 hr, CO <sub>2</sub> by GC	1 mg/L	Not applicable	Exhibited at least 50% primary degradation in 24 hours.	49 FR 44142; 11/2/84 OTS0508490
Diisononyl phthalate	68515-48-0	EFCHEWSOL Water solubility	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	deionized water; equilibrate for 24 h at 25 ± 2°C; analysis by GC	Not specified	Not applicable	Solubility in distilled water = 0.224 ± 0.1 mg/L.	48 FR 34119; 7/27/83 OTS0508479
Diisononyl phthalate	68515-48-0	EFPCHEVPRE Vapor Pressure	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	25 °C, analysis by GC	Not specified	Not applicable	Vapor pressure = 7.2 x 10 <sup>-5</sup> .	49 FR 44124; 11/2/84 OTS0508490
Diisononyl phthalate	68515-48-0	HECTOXTRFM Morphological transformation	Non-TSCA Protocol/Guideline (docket 42005)	mice, BALB 3T3 cells	<i>in vitro</i>	125-3750 nl/ml	Not applicable	The test material, diisonyl phthalate (DINP), was nontoxic and did not induce an increased frequency of transformed foci at any of the test concentrations, with or without activation.	50 FR 46699; 11/12/85 OTS0509537
Diisononyl phthalate	68515-48-0	HEGTOXMUTA Mutagenicity study	Non-TSCA Protocol/Guideline (docket 42005)	mouse, L5178Y cells	<i>in vitro</i>	1500 - 8000 nl/ml (nonactivation); 500 - 6000 nl/ml (activation)	Not applicable	The test substance did not induce any significant increases in the mutant frequency at the thymidine kinase (TK) locus, with or without activation.	51 FR 39799; 10/31/86 OTS0510528

## G004

## Alkyl Phthalates and Benzyl Butyl Phthalate

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Diisononyl phthalate	68515-48-0	HEGTOXMUTA Mutagenicity study	Non-TSCA Protocol/Guideline (docket 42005)	mouse, L5178Y cells	<i>in vitro</i>	9.77, 19.5, 39.1, 78.1, 156, 313, 625, 1250, 2500, 5000 nL/ml	Not applicable	In the absence of metabolic activation, the test material, DINP, was soluble from 9.77 to 313 nL/ml, but higher concentrations contained small oil droplets. At 1250 mL/ml treatment was moderately toxic. In the presence of metabolic activation, the test material was slightly more toxic than non-activation.	51 FR 6468; 2/24/86 OTS0509537
Diisononyl phthalate	68515-48-0	HESTOX Subchronic oral study	Non-TSCA Protocol/Guideline (docket 42005)	rats	diet, 21 d	0, 0.6, 1.2, 2.5%	5/sex/group	Decreased body weights were evident at 1.2 and 2.5% in both sexes. Early in treatment food intakes were reduced in both sexes at 2.5% and males at 1.2%. The weights and relative weights of the livers and kidneys were significantly increased in all treated groups. The relative testis weights were higher than control at 2.5%. No treatment related effects were seen histologically. There was a reduction in hepatocyte cytoplasmic basophilia at 1.2 and 2.5%. Lower periportal lipid levels were seen in all treated animals (not dose related). Serum triglycerides and cholesterol levels were reduced in all treated males, and serum cholesterol levels were reduced in treated females, while serum triglycerides were raised. Treatment at 2.5% produced a very marked increase in peroxisomes in males and a marked increase in females. Cyanide-insensitive palmitoyl-CoA was increased in all treated groups, significantly in the two higher doses (dose related). There was a dose-related increase in the 11- and 12- hydroxylation of lauric acid, the males being more sensitive, and total hepatic protein levels were increased.	51 FR 16203; 5/1/86 OTS0509543
Diisodecyl phthalate	68515-49-1	EEATOX Acute chironomid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Paratanytarsus parthenogenica</i> (midge)	static, 48 hr	0.056-86.3 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 30114; 7/26/84 OTS0508488
Diisodecyl phthalate	68515-49-1	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	static, 96 hr	<0.0037 to 210 mg/L (5 concentrations/test material up to limit of solubility)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Diisodecyl phthalate	68515-49-1	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Sheepshead minnow	flow-through, 96 hr	0.08-60 ppm (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 44142; 11/2/84 OTS0508492
Diisodecyl phthalate	68515-49-1	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Rainbow trout	flow-through, 96 hr	0.013-100 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 18779; 5/2/84 OTS0508486
Diisodecyl phthalate	68515-49-1	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	flow-through, 96 hr	0.026-34 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481

**G004**  
**Alkyl Phthalates and Benzyl Butyl Phthalate**

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Diisodecyl phthalate	68515-49-1	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Bluegill	static, 96 hr	0.34-1.0 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Diisodecyl phthalate	68515-49-1	EEATOX Acute mysid shrimp toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Mysid shrimp	static, 96 hr	0.056-86.0 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 30114; 7/26/84 OTS0508488
Diisodecyl phthalate	68515-49-1	EEATOX Daphnid acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	static, 48 hr	5 concentrations up to water solubility limits	Not specified	The 48-hour LC <sub>50</sub> value is >0.18 mg/L.	49 FR 44142; 11/2/84 OTS0508492
Diisodecyl phthalate	68515-49-1	EEATOX Algae acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Green alga	static, 6 d	0.05-1409.4 ppm	Not applicable	No acute toxicity below the limit of aqueous solubility.	50 FR 5421; 2/6/85 OTS0508496
Diisodecyl phthalate	68515-49-1	EECTOX Chronic daphnid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	flow-through, 21 d	0.015-80 mg/L (measured)	Not specified	Non-toxic.	50 FR 5421; 2/6/85 OTS0508496
Diisodecyl phthalate	68515-49-1	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	23° C, 24 hr, CO <sub>2</sub> by GC	1 mg/L	Not applicable	Exhibited at least 50% primary degradation in 24 hours.	49 FR 44142; 11/2/84 OTS0508490
Diisodecyl phthalate	68515-49-1	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	shake flask, 28 d, CO by GC	4 mg carbon/equivalent	Not applicable	Primary biodegradation of 90% or higher and ultimate biodegradation of 55%.	48 FR 53159; 11/25/83 OTS0508481
Diisodecyl phthalate	68515-49-1	EFCHEWSOL Water solubility	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	deionized water; equilibrate for 24 h at 25 ± 2°C; analysis by GC	Not specified	Not applicable	Solubility in distilled water = <1 mg/L.	48 FR 34119; 7/27/83 OTS0508479
Diisodecyl phthalate	68515-49-1	HECTOXTRFM Morphological transformation	Non-TSCA Protocol/Guideline (docket 42005)	mice, BALB 3T3 cells	<i>in vitro</i>	200-6320 nl/ml	Not applicable	The test material, Diisodecyl phthalate (DIDP), was nontoxic, and did not induce significant increased frequency of transformed foci, with or without activation.	50 FR 46699; 11/12/85 OTS0509537
Diisodecyl phthalate	68515-49-1	HEGTOXMUTA Mutagenicity study	Non-TSCA Protocol/Guideline (docket 42005)	mouse, L5178Y cells	<i>in vitro</i>	2000 - 10,000 nl/ml (nonactivation); 250 - 2000 nl/ml (activation)	Not applicable	The test substance did not induce any significant increases in the mutant frequency at the thymidine kinase (TK) locus, with or without activation.	51 FR 39799; 10/31/86 OTS0510528

## G004

## Alkyl Phthalates and Benzyl Butyl Phthalate

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Diisodecyl phthalate	68515-49-1	HESTOX Subchronic oral study	Non-TSCA Protocol/Guideline (docket 42005)	rats	diet, 21 d	0, 0.3, 1.2, 2.5%	5/sex/group	Decreased body weights were evident at 1.2 and 2.5% in males, and to a lesser degree in females. Food intakes were reduced initially in both sexes at 1.2 and 2.5%, the effect persisting throughout treatment in males at 2.5%. Absolute and relative liver and kidney weights were increased in 1.2 and 2.5% (both sexes). At 2.5%, relative testis weights were significantly greater and no lesions were seen histologically. There was a reduction in hepatocyte cytoplasmic basophilia at 1.2 and 2.5%. Lower periportal lipid levels were seen, but not dose related. Serum triglycerides and cholesterol levels were reduced in males at 1.2 and 2.5% level (not dose related). Treatment at 2.5% produced a marked but variable increase in peroxisomes with the females showing greater response. Cyanide-insensitive palmitoyl-CoA was significantly increased at 1.2 and 2.5%. There was a significant increase in the 11- and 12- hydroxylation of lauric acid in all treated males, but in the females the only significant increase was in the 12-hydroxylase level in the 2.5% group.	51 FR 16203; 5/1/86 OTS0509543
Diisodecyl phthalate	68515-49-1	Sediment adsorption isotherm	796.2750 (modified)	Not applicable	Not specified	0.010, 0.049, 0.097, 0.146, 0.194, 0.291 ml aliquots	Not applicable	The mean percents adsorbed to sediments EPA 8, EPA 18, EPA 21 was 77.0%, 85.8%, and 81.5%, respectively. Correlation coefficients were 0.9430, 0.9647, and 0.9650 for sediments EPA 8, EPA 18, and EPA 21, respectively. HPLC analysis of aqueous adsorption phases and sediment extracts demonstrated stability. The mean C14-mass balance accountability was 103%, 99.2%, and 101% for sediments EPA 8, EPA 18, EPA 21, respectively.	56 FR 42623; 8/28/91  OTS05 33017
Dihexyl phthalate	68515-50-4	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	static, 96 hr	<0.0037 to 210 mg/L (5 concentrations/test material up to limit of solubility)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Dihexyl phthalate	68515-50-4	EEATOX Daphnid acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	static, 48 hr	5 concentrations up to water solubility limits	Not specified	The 48-hour LC <sub>50</sub> value is >0.35 mg/L.	49 FR 44142; 11/2/84 OTS0508492
Dihexyl phthalate	68515-50-4	EEATOX Acute mysid shrimp toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Mysid shrimp	static, 96 hr	0.056-86.0 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 30114; 7/26/84 OTS0508488
Dihexyl phthalate	68515-50-4	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	flow-through, 96 hr	0.026-34 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Dihexyl phthalate	68515-50-4	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Rainbow trout	flow-through, 96 hr	0.013-100 mg/L (measured)	Not specified	Toxic at concentrations below the limit of aqueous solubility. The 96 hr LC <sub>50</sub> value is 0.82 mg/L.	49 FR 18779; 5/2/84 OTS0508486

**G004**  
**Alkyl Phthalates and Benzyl Butyl Phthalate**

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Dihexyl phthalate	68515-50-4	EEATOX Acute chironomid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Paratanytarsus parthenogenica</i> (midge)	static, 48 hr	0.056-86.3 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 30114; 7/26/84 OTS0508488
Dihexyl phthalate	68515-50-4	EEATOX Algae acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Green alga	static, 6 d	0.05-1409.4 ppm	Not applicable	No acute toxicity below the limit of aqueous solubility.	50 FR 5421; 2/6/85 OTS0508496
Dihexyl phthalate	68515-50-4	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Bluegill	static, 96 hr	0.34-1.0 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Dihexyl phthalate	68515-50-4	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Sheepshead minnow	flow-through, 96 hr	0.08-60 ppm (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 44142; 11/2/84 OTS0508492
Dihexyl phthalate	68515-50-4	EECLIF Fish early life stage	797.1600 (modified)	Rainbow trout ( <i>Oncorhynchus mykiss</i> )	flow-through, 143 days	0, 0.014, 0.028, 0.055, 0.11, 0.22 mg/L (nominal)	20	The results indicate that embryo hatchability, fry survival, standard length and blotted wet weight was not significantly affected at any concentration. No statistical evidence of treatment-related effects were observed during this study at 0.22 mg/L.	OTS0533139
Dihexyl phthalate	68515-50-4	EECTOX Chronic daphnid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	flow-through, 21 d	0.015-80 mg/L (measured)	Not specified	Non-toxic.	50 FR 5421; 2/6/85 OTS0508496
Dihexyl phthalate	68515-50-4	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	shake flask, 28 d, CO by GC	4 mg carbon/equivalent	Not applicable	Primary biodegradation of 90% or higher and ultimate biodegradation of 55%.	48 FR 53159; 11/25/83 OTS0508481
Dihexyl phthalate	68515-50-4	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	23° C, 24 hr, CO <sub>2</sub> by GC	1 mg/L	Not applicable	Primary degradation in excess of 90% in 24 hours.	49 FR 44142; 11/2/84 OTS0508490
Dihexyl phthalate	68515-50-4	EFCHWSOL Water solubility	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	deionized water; equilibrate for 24 h at 25 ± 2°C; analysis by GC	Not specified	Not applicable	Solubility in distilled water = 0.24 ± 0.05 mg/L.	48 FR 34119; 7/27/83 OTS0508479
Dihexyl phthalate	68515-50-4	EFPCHEVPRE Vapor Pressure	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	25 °C, analysis by GC	Not specified	Not applicable	Vapor pressure = 1.9 x 10 <sup>-3</sup> .	49 FR 44124; 11/2/84 OTS0508490
Dihexyl phthalate	68515-50-4	EFTSPT Sediment adsorption isother	796.2750 (modified)	Not applicable	Not specified	0.009, 0.037, 0.074, 0.111, 0.148, 0.222 ml aliquots	Not applicable	The mean percents adsorbed to sediments EPA 8, EPA 18, EPA 21 was 42.0%, 54.0%, and 59.2%, respectively. Correlation coefficients were 0.91533, 0.9187, and 0.9841 for sediments EPA 8, EPA 18, and EPA 21, respectively. HPLC analysis of aqueous adsorption phases and sediment extracts demonstrated stability. The mean C14-mass balance accountability was 112%, 106%, and 103% for sediments EPA 8, EPA 18, EPA 21, respectively.	56 FR 42623; 8/28/91  OTS05 33017
Di( <i>n</i> -hexyl, <i>n</i> -octyl, <i>n</i> -decyl) phthalate	68515-51-5	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Rainbow trout	flow-through, 96 hr	0.013-100 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 18779; 5/2/84 OTS0508486

**G004**  
**Alkyl Phthalates and Benzyl Butyl Phthalate**

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Di( <i>n</i> -hexyl, <i>n</i> -octyl, <i>n</i> -decyl) phthalate	68515-51-5	EEATOX Acute chironomid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Paratanytarsus parthenogenica</i> (midge)	static, 48 hr	0.056-86.3 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 30114; 7/26/84 OTS0508488
Di( <i>n</i> -hexyl, <i>n</i> -octyl, <i>n</i> -decyl) phthalate	68515-51-5	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Sheepshead minnow	flow-through, 96 hr	0.08-60 ppm (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 44142; 11/2/84 OTS0508492
Di( <i>n</i> -hexyl, <i>n</i> -octyl, <i>n</i> -decyl) phthalate	68515-51-5	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Bluegill	static, 96 hr	0.34-1.0 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Di( <i>n</i> -hexyl, <i>n</i> -octyl, <i>n</i> -decyl) phthalate	68515-51-5	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	flow-through, 96 hr	0.026-34 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Di( <i>n</i> -hexyl, <i>n</i> -octyl, <i>n</i> -decyl) phthalate	68515-51-5	EEATOX Algae acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Green alga	static, 6 d	0.05-1409.4 ppm	Not applicable	No acute toxicity below the limit of aqueous solubility.	50 FR 5421; 2/6/85 OTS0508496
Di( <i>n</i> -hexyl, <i>n</i> -octyl, <i>n</i> -decyl) phthalate	68515-51-5	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	static, 96 hr	<0.0037 to 210 mg/L (5 concentrations/test material up to limit of solubility)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Di( <i>n</i> -hexyl, <i>n</i> -octyl, <i>n</i> -decyl) phthalate	68515-51-5	EEATOX Daphnid acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	static, 48 hr	5 concentrations up to water solubility limits	Not specified	The 48-hour LC <sub>50</sub> value is >0.42 mg/L.	49 FR 44142; 11/2/84 OTS0508492
Di( <i>n</i> -hexyl, <i>n</i> -octyl, <i>n</i> -decyl) phthalate	68515-51-5	EEATOX Acute mysid shrimp toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Mysid shrimp	static, 96 hr	0.056-86.0 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 30114; 7/26/84 OTS0508488
Di( <i>n</i> -hexyl, <i>n</i> -octyl, <i>n</i> -decyl) phthalate	68515-51-5	EECTOX Chronic daphnid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	flow-through, 21 d	0.015-80 mg/L (measured)	Not specified	Non-toxic.	50 FR 5421; 2/6/85 OTS0508496
Di( <i>n</i> -hexyl, <i>n</i> -octyl, <i>n</i> -decyl) phthalate	68515-51-5	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	23° C, 24 hr, CO <sub>2</sub> by GC	1 mg/L	Not applicable	Exhibited at least 50% primary degradation in 24 hours.	49 FR 44142; 11/2/84 OTS0508490
Di( <i>n</i> -hexyl, <i>n</i> -octyl, <i>n</i> -decyl) phthalate	68515-51-5	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	shake flask, 28 d, CO by GC	4 mg carbon/equivalent	Not applicable	Primary biodegradation of 90% or higher and ultimate biodegradation of 55%.	48 FR 53159; 11/25/83 OTS0508481
Di( <i>n</i> -hexyl, <i>n</i> -octyl, <i>n</i> -decyl) phthalate	68515-51-5	EFCHEWSOL Water solubility	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	deionized water; equilibrate for 24 h at 25 ± 2°C; analysis by GC	Not specified	Not applicable	Solubility in distilled water = 0.9 ± 0.5 mg/L.	48 FR 34119; 7/27/83 OTS0508479
Di( <i>n</i> -hexyl, <i>n</i> -octyl, <i>n</i> -decyl) phthalate	68515-51-5	EFPCHEVPRE Vapor Pressure	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	25 °C, analysis by GC	Not specified	Not applicable	Vapor pressure = 6.5 x 10 <sup>-4</sup> .	49 FR 44124; 11/2/84 OTS0508490

G004

## Alkyl Phthalates and Benzyl Butyl Phthalate

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Di( <i>n</i> -hexyl, <i>n</i> -octyl, <i>n</i> -decyl) phthalate	68515-51-5	HECTOXTRFM Morphological transformation study	Non-TSCA Protocol/Guideline (docket 42005)	mice, BALB 3T3 cells	<i>in vitro</i>	63-6320 nl/ml	Not applicable	The test material, di( <i>n</i> -hexyl, <i>n</i> -octyl, <i>n</i> -decyl) phthalate (610P), did not induce an increased number of transformed foci at any of the concentrations tested, with or without activation.	50 FR 46699; 11/12/85 OTS0509537
Di( <i>n</i> -hexyl, <i>n</i> -octyl, <i>n</i> -decyl) phthalate	68515-51-5	HEGTOXMUTA Mutagenicity study	Non-TSCA Protocol/Guideline (docket 42005)	mouse, L5178Y cells	<i>in vitro</i>	9.77, 19.5, 39.1, 78.1, 156, 313, 625, 1250, 2500, 5000 nl/ml	Not applicable	In the presence of metabolic activation, the test material, at 5000 nl/ml was lethal and at 1250 and 2500 nl/ml, it was highly toxic. In the absence of metabolic activation, the test material at 1250, 2500, and 5000 nl/ml was toxic. Treatments from 9.77 to 625 nl/ml induced low to moderate toxicities in both the presence and absence of metabolic activation.	51 FR 6468; 2/24/86 OTS0509537
Di( <i>n</i> -hexyl, <i>n</i> -octyl, <i>n</i> -decyl) phthalate	68515-51-5	HESTOX Subchronic oral study	Non-TSCA Protocol/Guideline (docket 42005)	rats	diet, 21 d	0, 0.6, 1.2, 2.5%	5/sex/group	Treatment did not significantly influence the bodyweights or food intakes of the treated animals. In both sexes the weights and relative weights of the livers were increased in all treated groups. In the females there was a reduction in the hepatocyte cytoplasmic basophilia in the groups fed 2.5% and in one rat fed 1.2%. In the male the reduction was obscured by extensive lipid deposition in the treated groups. In the histological examination this lipid was seen as vacuolation and was accompanied by slight increases in mitotic activity and cell necrosis. In the females slight necrosis and increased mitotic activity was confined to a few animals from the 1.2 and 2.5% groups. Serum cholesterol levels were significantly reduced in the female treated groups, and the male 0.6% group (not dose related). Male rats at 2.5% had a slight increase in peroxisome numbers and females a moderate increase. There was increases of palmitoyl CoA oxidation in both sexes fed 1.2 and 2.5%. Lauric acid 12- hydroxylase activity was increased significantly in both sexes fed 2.5%. The 11-hydroxylase activity was significantly increased in all treated females.	51 FR 16203; 5/1/86 OTS0509543
Diethyl phthalate	84-66-2	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	static, 96 hr	<0.0037 to 210 mg/L (5 concentrations/test material up to limit of solubility)	Not specified	Toxic at concentrations below the limit of aqueous solubility. The LC <sub>50</sub> value is 17 mg/L.	48 FR 53159; 11/25/83 OTS0508481
Diethyl phthalate	84-66-2	EEATOX Daphnid acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	static, 48 hr	5 concentrations up to water solubility limits	Not specified	The 48-hour LC <sub>50</sub> value is 90 mg/L.	49 FR 44142; 11/2/84 OTS0508492
Diethyl phthalate	84-66-2	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	flow-through, 96 hr	0.026-34 mg/L (measured)	Not specified	Toxic to the fathead minnow. The 96-hour LC <sub>50</sub> value is 17 mg/L.	48 FR 53159; 11/25/83 OTS0508481
Diethyl phthalate	84-66-2	EEATOX Algae acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Green alga	static, 6 d	0.05-1409.4 ppm	Not applicable	Toxic to the test algae. The EC <sub>50</sub> (population growth) value is 30.3 mg/L.	50 FR 5421; 2/6/85 OTS0508496

**G004**  
**Alkyl Phthalates and Benzyl Butyl Phthalate**

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Diethyl phthalate	84-66-2	EEATOX Acute mysid shrimp toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Mysid shrimp	static, 96 hr	0.056-86.0 mg/L (measured)	Not specified	Toxic to the mysid shrimp. The 96-hour LC <sub>50</sub> value is 18.3 mg/L	49 FR 30114; 7/26/84 OTS0508488
Diethyl phthalate	84-66-2	EEATOX Acute chironomid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Paratanytarsus parthenogenica</i> (midge)	static, 48 hr	0.056-86.3 mg/L (measured)	Not specified	Toxic to the midge. The 48-hour LC <sub>50</sub> value is 18.3 mg/L.	49 FR 30114; 7/26/84 OTS0508488
Diethyl phthalate	84-66-2	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Sheepshead minnow	flow-through, 96 hr	0.08-60 ppm (measured)	Not specified	Toxic to the sheepshead minnow. The 96-hour LC <sub>50</sub> value is 29 mg/L	49 FR 44142; 11/2/84 OTS0508492
Diethyl phthalate	84-66-2	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Bluegill	static, 96 hr	0.34-1.0 mg/L (measured)	Not specified	Toxic to the bluegill. The 96-hour LC <sub>50</sub> value is 22 mg/L.	48 FR 53159; 11/25/83 OTS0508481
Diethyl phthalate	84-66-2	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Rainbow trout	flow-through, 96 hr	0.013-100 mg/L (measured)	Not specified	Toxic at concentrations below the limit of aqueous solubility. The 96 hr LC <sub>50</sub> value is 12 mg/L.	49 FR 18779; 5/2/84 OTS0508486
Diethyl phthalate	84-66-2	EECTOX Chronic daphnid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	flow-through, 21 d	0.015-80 mg/L (measured)	Not specified	Toxic to <i>Daphnia magna</i> . Maximum affect test concentration (MATC) was 38 mg/L.	50 FR 5421; 2/6/85 OTS0508496
Diethyl phthalate	84-66-2	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	23° C, 24 hr, CO <sub>2</sub> by GC	1 mg/L	Not applicable	Primary degradation in excess of 90% in 24 hours.	49 FR 44142; 11/2/84 OTS0508490
Diethyl phthalate	84-66-2	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	shake flask, 28 d, CO by GC	4 mg carbon/equivalent	Not applicable	Primary biodegradation of 90% or higher and ultimate biodegradation of 55%.	48 FR 53159; 11/25/83 OTS0508481
Diethyl phthalate	84-66-2	EFCHEWSOL Water solubility	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	deionized water; equilibrate for 24 h at 25 ± 2°C; analysis by GC	Not specified	Not applicable	Solubility in distilled water = 4000 ± 60 mg/L.	48 FR 34119; 7/27/83 OTS0508479
Diethyl phthalate	84-66-2	EFPCHPART Octanol/water partition	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	octanol/deionized water at 25 °C, analysis by GC	10 <sup>-2</sup> M	Not applicable	The log Kow value with standard errors was 2.24 ± 0.004.	49 FR 44142; 11/2/84 OTS0508491
Diethyl phthalate	84-66-2	EFPCHVPRE Vapor Pressure	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	25 °C, analysis by GC	Not specified	Not applicable	Vapor pressure = 2.2 x 10 <sup>-1</sup> .	49 FR 44124; 11/2/84 OTS0508490
Dibutyl phthalate	84-74-2	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	static, 96 hr	<0.0037 to 210 mg/L (5 concentrations/test material up to limit of solubility)	Not specified	Toxic at concentrations below the limit of aqueous solubility. The LC <sub>50</sub> value is 3.0 mg/L.	48 FR 53159; 11/25/83 OTS0508481
Dibutyl phthalate	84-74-2	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Sheepshead minnow	flow-through, 96 hr	0.08-60 ppm (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 44142; 11/2/84 OTS0508492

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## Alkyl Phthalates and Benzyl Butyl Phthalate

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Dibutyl phthalate	84-74-2	EEATOX Algae acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Green alga	static, 6 d	0.05-1409.4 ppm	Not applicable	Toxic to the test algae. The EC <sub>50</sub> (population growth) value is 0.75 mg/L.	50 FR 5421; 2/6/85 OTS0508496
Dibutyl phthalate	84-74-2	EEATOX Acute mysid shrimp toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Mysid shrimp	static, 96 hr	0.056-86.0 mg/L (measured)	Not specified	Toxic to the mysid shrimp. The 96-hour LC <sub>50</sub> value is 0.75 mg/L.	49 FR 30114; 7/26/84 OTS0508488
Dibutyl phthalate	84-74-2	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Bluegill	static, 96 hr	0.34-1.0 mg/L (measured)	Not specified	Toxic to the bluegill. The 96-hour LC <sub>50</sub> value is 0.85 mg/L.	48 FR 53159; 11/25/83 OTS0508481
Dibutyl phthalate	84-74-2	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	flow-through, 96 hr	0.026-34 mg/L (measured)	Not specified	Toxic to the fathead minnow. The 96-hour LC <sub>50</sub> value is 0.92 mg/L.	48 FR 53159; 11/25/83 OTS0508481
Dibutyl phthalate	84-74-2	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Rainbow trout	flow-through, 96 hr	0.013-100 mg/L (measured)	Not specified	Toxic at concentrations below the limit of aqueous solubility. The 96 hr LC <sub>50</sub> value is 1.6 mg/L.	49 FR 18779; 5/2/84 OTS0508486
Dibutyl phthalate	84-74-2	EEATOX Acute chironomid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Paratanytarsus parthenogenica</i> (midge)	static, 48 hr	0.056-86.3 mg/L (measured)	Not specified	Toxic to the midge. The 48-hour LC <sub>50</sub> value is 0.75 mg/L.	49 FR 30114; 7/26/84 OTS0508488
Dibutyl phthalate	84-74-2	EEATOX Daphnid acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	static, 48 hr	5 concentrations up to water solubility limits	Not specified	The 48-hour LC <sub>50</sub> value is 3.4 mg/L.	49 FR 44142; 11/2/84 OTS0508492
Dibutyl phthalate	84-74-2	EECLIF Fish early life stage	797.1600 (modified)	Rainbow trout ( <i>Oncorhynchus mykiss</i> )	flow-through, 99 days	0, 0.14, 0.26, 0.52, 1.0, 2.0 mg/L (nominal)	30	Exposure of embryos, larvae, and juvenile fish to the test substance resulted in a lowest observed effect concentration of 0.26 mg/L, a no observed effect concentration (NOEC) of 0.14 mg/L, and a maximum acceptable toxicant concentration (MATC) of 0.14 mg/L. No rainbow trout survived at the three highest tested concentrations. The length and weight of rainbow trout after 99 days of exposure were significantly reduced at 0.26 mg/L.	OTS0533141
Dibutyl phthalate	84-74-2	EECTOX Chronic daphnid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	flow-through, 21 d	0.015-80 mg/L (measured)	Not specified	Toxic to <i>Daphnia magna</i> . Maximum affect test concentration (MATC) was 1.5 mg/L.	50 FR 5421; 2/6/85 OTS0508496
Dibutyl phthalate	84-74-2	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	23° C, 24 hr, CO <sub>2</sub> by GC	1 mg/L	Not applicable	Primary degradation in excess of 90% in 24 hours.	49 FR 44142; 11/2/84 OTS0508490
Dibutyl phthalate	84-74-2	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	shake flask, 28 d, CO by GC	4 mg carbon/equivalent	Not applicable	Primary biodegradation of 90% or higher and ultimate biodegradation of 55%.	48 FR 53159; 11/25/83 OTS0508481
Dibutyl phthalate	84-74-2	EFCHEWSOL Water solubility	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	deionized water; equilibrate for 24 h at 25 ± 2°C; analysis by GC	Not specified	Not applicable	Solubility in distilled water = 11.2 ± 0.3 mg/L.	48 FR 34119; 7/27/83 OTS0508479

**G004**  
**Alkyl Phthalates and Benzyl Butyl Phthalate**

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Dibutyl phthalate	84-74-2	EFPCHPART Octanol/water partition	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	octanol/deionized water at 25 °C, analysis by GC	10 <sup>-2</sup> M	Not applicable	The log Kow value with standard errors was 4.79 ± 0.094.	49 FR 44142; 11/2/84 OTS0508491
Dibutyl phthalate	84-74-2	EFPCHVPRE Vapor Pressure	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	25 °C, analysis by GC	Not specified	Not applicable	Vapor pressure = 9.7 x 10 <sup>-3</sup> .	49 FR 44124; 11/2/84 OTS0508490
Di- <i>n</i> -butyl phthalate	84-74-2	HECTOXTRFM Morphological transformation	Non-TSCA Protocol/Guideline (docket 42005)	mice, BALB 3T3 cells	<i>in vitro</i>	3.4-82.3 nl/ml	Not applicable	The test material, di- <i>n</i> -butyl phthalate (DBP), did not induce an increased number of transformed foci at any of the concentrations tested, with or without activation.	50 FR 46699; 11/12/85 OTS0509537
Di( <i>n</i> -butyl) phthalate	84-74-2	HEGTOXMUTA Mutagenicity study	Non-TSCA Protocol/Guideline (docket 42005)	mouse, L5178Y cells	<i>in vitro</i>	9.77, 19.5, 39.1, 78.1, 156, 313, 625, 1250, 2500, 5000 nl/ml	Not applicable	The test material, DBP, under nonactivated conditions, was highly toxic at 78.1 nl/ml after 48 hours. The dose-level of 156 nl/ml was lethal to the test cells. In the presence of metabolic activation, the test material formed a precipitate at 5000 nl/ml after 24 hours. At 1250 nl/ml, the test material was lethal and the 625 and 313 nl/ml media were highly toxic.	51 FR 6468; 2/24/86 OTS0509537
Butyl benzyl phthalate	85-68-7	EEATOX Daphnid acute toxicity	Non-TSCA Protocol/Guideline (docket 42070)	<i>Daphnia magna</i>	static, 48 hr	5 concentrations up to water solubility limits	Not specified	The 48-hour LC <sub>50</sub> value is >1.4 mg/L.	49 FR 44142; 11/2/84 OTS0508492
Butyl benzyl phthalate	85-68-7	EEATOX Acute invertebrate toxicity	Non-TSCA Protocol/Guideline (docket 42070)	Mayfly	flow-through, 96 hr	0.082, 0.18, 0.32, 0.77, 1.6 mg/L (measured)	Not specified	The 96-hour LC <sub>50</sub> value was 1.1 mg/L. Loss of equilibrium at 1.6 mg/L was the only behavioral/sublethal response. The no-observed-effect concentration was <0.082 mg/L (some mortality was observed at this concentration level).	52 FR 2151; 1/20/87 OTS0522401
Butyl benzyl phthalate	85-68-7	EEATOX Acute mysid shrimp toxicity	Non-TSCA Protocol/Guideline (docket 42070)	Mysid shrimp	static, 96 hr	0.056-86.0 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 30114; 7/26/84 OTS0508488
Butyl benzyl phthalate	85-68-7	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42070)	Sheepshead minnow	flow-through, 96 hr	0.08-60 ppm (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 44142; 11/2/84 OTS0508492
Butyl benzyl phthalate	85-68-7	EEATOX Acute aquatic toxicity, invertebrate	Non-TSCA Protocol/Guideline (docket 42070)	<i>Nereis/ Neanthes virens</i> (polychaetes)	flow-through, 96 hr	0.31, 0.53, 0.72, 1.7, 3.0 mg/L (measured)	Not specified	There were no observations of mortality or adverse effects at any of the concentration levels tested. The LC <sub>50</sub> value was greater than 3.0 mg/L.	52 FR 2152; 1/20/87 OTS0522399
Butyl benzyl phthalate	85-68-7	EEATOX Acute aquatic toxicity, invertebrate	Non-TSCA Protocol/Guideline (docket 42070)	<i>Procambarus</i> (crayfish)	flow-through, 96 hr	0.12, 0.25, 0.55, 1.1, 2.4 mg/L (measured)	Not specified	The 96-hour LC <sub>50</sub> value was >2.4 mg/L. The no-observed-effect concentration was 2.4 mg/L.	51 FR 39799; 10/31/86 OTS0522398
Butyl benzyl phthalate	85-68-7	EEATOX Oyster Acute toxicity	Non-TSCA Protocol/Guideline (docket 42070)	Eastern oysters	flow-through, 96 hr	0.19-1.4 mg/L (measured)	Not specified	The percentage of reduction for new shell growth ranged from 0% at the 0.38 mg/L exposure level to 53% at the 1.4 mg/L level. The 96-hour EC <sub>50</sub> (and 95% confidence interval) was 1.3 mg/L (1.1 to 1.7 mg/L).	52 FR 2152; 1/20/87 OTS0522399
Butyl benzyl phthalate	85-68-7	EEATOX Acute aquatic toxicity, invertebrate	Non-TSCA Protocol/Guideline (docket 42070)	Grass shrimp	flow-through, 96 hr	0.37, 0.50, 0.78, 1.3, 2.7 mg/L (measured)	Not specified	Throughout the 96-hour exposure period, no mortalities or adverse effects were observed among the test animals exposed to any concentration. The 96-hour LC <sub>50</sub> was greater than 2.7 mg/L.	52 FR 2152; 1/20/87 OTS0522399

**G004**  
**Alkyl Phthalates and Benzyl Butyl Phthalate**

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Butyl benzyl phthalate	85-68-7	EEATOX Acute aquatic toxicity, invertebrates	Non-TSCA Protocol/Guideline (docket 42070)	Pink shrimp	flow-through, 96 hr	0.60, 0.62, 0.90, 1.4, 3.4 mg/L (measured)	Not specified	Throughout the 96-hour exposure period, no mortalities or adverse effects were observed among the test animals exposed to any concentration. The 96-hour LC <sub>50</sub> was greater than 3.4 mg/L.	52 FR 2152; 1/20/87 OTS0522399
Butyl benzyl phthalate	85-68-7	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42070)	Fathead minnow	static, 96 hr	<0.0037 to 210 mg/L (5 concentrations/test material up to limit of solubility)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Butyl benzyl phthalate	85-68-7	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42070)	Rainbow trout	flow-through, 96 hr	0.013-100 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 18779; 5/2/84 OTS0508486
Butyl benzyl phthalate	85-68-7	EEATOX Algae acute toxicity	Non-TSCA Protocol/Guideline (docket 42070)	Green alga	static, 6 d	0.05-1409.4 ppm	Not applicable	No acute toxicity below the limit of aqueous solubility.	50 FR 5421; 2/6/85 OTS0508496
Butyl benzyl phthalate	85-68-7	EEATOX Acute invertebrate toxicity	Non-TSCA Protocol/Guideline (docket 42070)	Hydra	flow-through, 96 hr	0.12, 0.25, 0.50, 1.0, 2.0 mg/L (nominal)	Not specified	The 96-hour EC <sub>50</sub> (mortality; presence of "tulip stage") value (and 95% confidence interval values) was 1.1 mg/L (0.5 to 2.0 mg/L). At the concentration level 2.0 mg/L, 35% mortality was observed. The no-observed-effect concentration value was 0.5 mg/L.	51 FR 27598; 8/1/86 OTS0522397
Butyl benzyl phthalate	85-68-7	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42070)	Fathead minnow	flow-through, 96 hr	0.026-34 mg/L (measured)	Not specified	Toxic to the fathead minnow. The 96-hour LC <sub>50</sub> value is 1.5 mg/L.	48 FR 53159; 11/25/83 OTS0508481
Butyl benzyl phthalate	85-68-7	EEBIOC Mollusk bioconcentration	Non-TSCA Protocol/Guideline (docket 42070)	Eastern oyster	continuous in natural seawater, 11 d, then 42 d depuration period	0.020 mg/L of <sup>14</sup> C-BBP (nominal)	Not specified	Concentration of residues reached steady-state in 3 days, yielding a whole-body-tissue bioconcentration factor of 135x. The projected half-life was calculated to be 7.4 days. Partial elimination of <sup>14</sup> C-residue from whole body tissues was observed within 6 hours of depuration, and 50% was eliminated between day 1 and 2 of depuration. By day 14, 85% was eliminated.	52 FR 2152; 1/20/87 OTS0522399
Butyl benzyl phthalate	85-68-7	EECLIF Fish early life stage test	Non-TSCA Protocol/Guideline (docket 42070)	Rainbow trout	flow-through, 109 d post-hatch	0, 0.012, 0.021, 0.044, 0.095, 0.20 mg/L (mean measured levels of <sup>14</sup> C-BBP)	Not specified	This study was terminated 11 days early (intended to be a 120 day study) due to random unexplained fish mortality. Fry growth (length) was reduced at the high-dose at 35 and 60 days, but returned to normal at 90 and 109 days. No effects were noted on fry growth in weight, hatchability, or survival of fry. The MATC at the end of the study was >0.20 mg/L.	52 FR 2152; 1/20/87 OTS0522403
Butyl benzyl phthalate	85-68-7	EECTOX Chronic daphnid toxicity	Non-TSCA Protocol/Guideline (docket 42070)	<i>Daphnia magna</i>	flow-through, 21 d	0.015-80 mg/L (measured)	Not specified	Toxic to <i>Daphnia magna</i> . Maximum affect test concentration (MATC) was 0.63 mg/L.	50 FR 5421; 2/6/85 OTS0508496

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## Alkyl Phthalates and Benzyl Butyl Phthalate

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Butyl benzyl phthalate	85-68-7	EECTOX Mysid shrimp chronic toxicity	Non-TSCA Protocol/Guideline (docket 42070)	Mysid shrimp	flow-through, 28 d	0.024-0.75 mg/L (measured)	Not specified	Survival rate of the test animals at the highest test concentration was significantly less than the control. Development of the test animals exposed to 0.75 mg/L was retarded. Reproduction was also reduced at 0.17 and 0.75 mg/L. The estimated maximum acceptable toxicant concentration (MATC) after 28 days was between 0.075 and 0.17 mg/L.	52 FR 2151; 1/20/87 OTS0522399
Butyl benzyl phthalate	85-68-7	EFBDEG Microcosm biodegradation study	Non-TSCA Protocol/Guideline (docket 42070)	Not applicable	river water and sediment cores, <sup>14</sup> CO <sub>2</sub> , sterile water; 30 d	10, 100 µg/L	Not applicable	The test material is readily degraded in water. The estimated half-life for primary degradation was 2 days or less.	52 FR 2152; 1/20/87 OTS0522402
Butyl benzyl phthalate	85-68-7	EFPCHVPRE Vapor Pressure	Non-TSCA Protocol/Guideline (docket 42070)	Not applicable	25 °C, analysis by GC	Not specified	Not applicable	Vapor pressure = 1.1 x 10 <sup>-3</sup> .	49 FR 44124; 11/2/84 OTS0508490
Butyl benzyl phthalate	85-68-7	EFPCHWSOL Water solubility study	Non-TSCA Protocol/Guideline (docket 42070)	Not applicable	well water	Not applicable	Not applicable	water solubility = 2.6 mg/L	51 FR 27598; 8/1/86 OTS0522397
Butyl benzyl phthalate	85-68-7	HECTOXCARC	Non-TSCA Protocol/Guideline (docket 42070)	rats	oral (diet), 2 yrs	0, 3,000, 6,000, 12,000 ppm (males); 0, 6,000, 12,000, 24,000 ppm (females)	60/sex/group	There was some evidence of carcinogenic activity in male rats based on the increased incidences of pancreatic acinar cell adenoma and of acinar cell adenoma or carcinoma (combined). There was equivocal evidence of carcinogenic activity in females based on the marginally increased incidences of pancreatic acinar cell adenoma and of transitional epithelial papilloma of the urinary bladder.	T-458
Butyl benzyl phthalate	85-68-7	HECTOXTRFM Morphological transformation	Non-TSCA Protocol/Guideline (docket 42070)	mice, BALB 3T3 cells	<i>in vitro</i>	10-160 nl/ml	Not applicable	The test material, butyl benzyl phthalate (BBP), did not induce an increased number of transformed foci at any of the concentrations tested, with or without activation.	50 FR 46699; 11/12/85 OTS0509537
Butyl benzyl phthalate	85-68-7	HEGTOXMUTA Mutagenicity study	Non-TSCA Protocol/Guideline (docket 42070)	mouse, L5178Y cells	<i>in vitro</i>	9.77, 19.5, 39.1, 78.1, 156, 313, 625, 1250, 2500, 5000 nl/ml	Not applicable	In the absence of metabolic activation, the test material, BBP, was highly toxic to cells at 625 and 1250 nl/ml and treatment with 2500 nl/ml was lethal. In the presence of metabolic activation, the test material was lethal at 2500 and 5000 nl/ml and toxic at 1250 nl/ml.	51 FR 6468; 2/24/86 OTS0509537

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## Alkyl Phthalates and Benzyl Butyl Phthalate

Chemical Name	CAS No.	Study Code/Type	Protocol/Guidline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Butyl benzyl phthalate	85-68-7	HESTOX Subchronic oral study	Non-TSCA Protocol/Guideline (docket 42070)	rats	diet, 21 d	0, 1.2, 2.5%	5/sex/group	Toxicity was evident by statistical differences between dosed groups and controls for: mean body weights (2.5 and 1.2% males, and 2.5% females), food consumption values (2.5% both sexes), relative liver and kidney weights (all treated groups) and relative testis weights (2.5%). There was a decrease in serum triglycerides for the 1.2 and 2.5% males and an increase in triglycerides for the 2.5% females. There was a moderate increase in the amount of peroxisome proliferation for the high-dose animals. Liver biochemistry revealed statistically significant differences between treated and controls as indicated by cyanide-insensitive palmitoyl-CoA oxidation levels (all treated males and 2.5% females), lauric acid 11- and 12-hydroxylase activities (all treated males and 2.5% females) and hepatic microsomal protein levels (2.5% males). Treatment related histological changes included reduction in cytoplasmic basophilia in the livers (2.5% both sexes) and severe testicular atrophy (2.5%).	51 FR 16203; 5/1/86 OTS0509543
Butyl 2-ethylhexyl phthalate	85-69-8	EEATOX Algae acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Green alga	static, 6 d	0.05-1409.4 ppm	Not applicable	No acute toxicity below the limit of aqueous solubility.	50 FR 5421; 2/6/85 OTS0508496
Butyl 2-ethylhexyl phthalate	85-69-8	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Sheepshead minnow	flow-through, 96 hr	0.08-60 ppm (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 44142; 11/2/84 OTS0508492
Butyl 2-ethylhexyl phthalate	85-69-8	EEATOX Daphnid acute toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	static, 48 hr	5 concentrations up to water solubility limits	Not specified	The 48-hour LC <sub>50</sub> value is >0.10 mg/L.	49 FR 44142; 11/2/84 OTS0508492
Butyl 2-ethylhexyl phthalate	85-69-8	EEATOX Acute chironomid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Paratanytarsus parthenogenica</i> (midge)	static, 48 hr	0.056-86.3 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 30114; 7/26/84 OTS0508488
Butyl 2-ethylhexyl phthalate	85-69-8	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Rainbow trout	flow-through, 96 hr	0.013-100 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 18779; 5/2/84 OTS0508486
Butyl 2-ethylhexyl phthalate	85-69-8	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Bluegill	static, 96 hr	0.34-1.0 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481
Butyl 2-ethylhexyl phthalate	85-69-8	EEATOX Acute mysid shrimp toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Mysid shrimp	static, 96 hr	0.056-86.0 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	49 FR 30114; 7/26/84 OTS0508488
Butyl 2-ethylhexyl phthalate	85-69-8	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	static, 96 hr	<0.0037 to 210 mg/L (5 concentrations/test material up to limit of solubility)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481

**G004**  
**Alkyl Phthalates and Benzyl Butyl Phthalate**

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Butyl 2-ethylhexyl phthalate	85-69-8	EECTOX Chronic daphnid toxicity	Non-TSCA Protocol/Guideline (docket 42005)	<i>Daphnia magna</i>	flow-through, 21 d	0.015-80 mg/L (measured)	Not specified	Non-toxic.	50 FR 5421; 2/6/85 OTS0508496
Butyl 2-ethylhexyl phthalate	85-69-8	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	23° C, 24 hr, CO <sub>2</sub> by GC	1 mg/L	Not applicable	Exhibited at least 50% primary degradation in 24 hours.	49 FR 44142; 11/2/84 OTS0508490
Butyl 2-ethylhexyl phthalate	85-69-8	EFBDEG Biodegradation study	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	shake flask, 28 d, CO by GC	4 mg carbon/equivalent	Not applicable	Primary biodegradation of 90% or higher and ultimate biodegradation of 55%.	48 FR 53159; 11/25/83 OTS508481
Butyl 2-ethylhexyl phthalate	85-69-8	EFCHEWSOL Water solubility	Non-TSCA Protocol/Guideline (docket 42005)	Not applicable	deionized water; equilibrate for 24 hr at 25 ± 2°C; analysis by GC	Not specified	Not applicable	Solubility in distilled water = 2.69 ± 0.15 mg/L.	48 FR 34119; 7/27/83 OTS0508479
Butyl 2-ethylhexyl phthalate	89-69-8	EEATOX Acute fish toxicity	Non-TSCA Protocol/Guideline (docket 42005)	Fathead minnow	flow-through, 96 hr	0.026-34 mg/L (measured)	Not specified	No acute toxicity below the limit of aqueous solubility.	48 FR 53159; 11/25/83 OTS0508481