

**Study Number:** R10997

**Test Type:** RACB

**Route:** Dosing in Feed

**Species/Strain:** Rat/Sprague-Dawley

**C Number:**

**Study Gender:**

**PWG Approval Date**

**R19G: Pup Mean Body Weight Gain**

**Test Compound:** Diisobutyl Phthalate

**CAS Number:** 84-69-5

R10997

Both

See web page for date of PWG Approval

**Date Report Requested:** 01/10/2020

**Time Report Requested:** 10:57:59

**Lab:** RTI

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F1 Males

Treatment Groups (ppm)

Phase	Litter ID	Days	0		1000		5000		10000	
			WT Gain (g)	N	WT Gain (g)	N	WT Gain (g)	N	WT Gain (g)	N
PND	A	1 - 4	3.13 ± 0.08	130 (20)	2.79 ± 0.12	132 (23)	3.11 ± 0.10	128 (21)	3.00 ± 0.13	110 (22)
PND	B	1 - 4	2.70 ± 0.17	124 (21)	2.56 ± 0.16	131 (23)	2.75 ± 0.14	125 (20)	2.46 ± 0.17	149 (22)
PND	C	1 - 4	2.71 ± 0.22	107 (21)	2.91 ± 0.22	83 (20)	2.94 ± 0.15	100 (19)	2.54 ± 0.24	108 (20)
		4 - 7	4.22 ± 0.35	102 (21)	4.31 ± 0.30	77 (20)	4.13 ± 0.33	97 (19)	4.03 ± 0.30	91 (19)
		7 - 10	6.17 ± 0.23 *	102 (21)	5.70 ± 0.31	76 (20)	5.82 ± 0.24	94 (19)	5.08 ± 0.39 *	89 (19)
		10 - 13	6.82 ± 0.21 **	101 (21)	6.44 ± 0.24	75 (20)	6.49 ± 0.25	94 (19)	5.59 ± 0.28 **	88 (19)
		13 - 16	6.87 ± 0.20 **	101 (21)	6.31 ± 0.32	75 (20)	6.44 ± 0.18	94 (19)	5.45 ± 0.31 **	88 (19)
		16 - 19	7.46 ± 0.34 **	101 (21)	6.55 ± 0.36	75 (20)	5.84 ± 0.31 **	94 (19)	4.55 ± 0.33 **	88 (19)
		19 - 21	8.23 ± 0.28 **	101 (21)	7.82 ± 0.35	75 (20)	7.27 ± 0.41 *	94 (19)	4.33 ± 0.19 **	88 (19)
		4 - 21	39.77 ± 0.96 **	101 (21)	37.27 ± 1.36	75 (20)	36.09 ± 1.21 *	94 (19)	29.17 ± 1.40 **	88 (19)

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**F1 Females**

**Treatment Groups (ppm)**

Phase	Litter ID	Days	0		1000		5000		10000	
			WT Gain (g)	N	WT Gain (g)	N	WT Gain (g)	N	WT Gain (g)	N
PND	A	1 - 4	3.07 ± 0.08	127 (20)	2.71 ± 0.12	135 (23)	2.90 ± 0.10	130 (21)	2.82 ± 0.11	126 (22)
PND	B	1 - 4	2.77 ± 0.15	123 (21)	2.73 ± 0.16	149 (23)	2.47 ± 0.19	137 (21)	2.59 ± 0.16	119 (22)
PND	C	1 - 4	2.43 ± 0.23	77 (21)	2.55 ± 0.25	101 (19)	2.72 ± 0.15	96 (20)	2.30 ± 0.19	95 (19)
		4 - 7	3.95 ± 0.28	71 (20)	3.92 ± 0.32	90 (19)	4.08 ± 0.23	90 (20)	3.70 ± 0.21	75 (18)
		7 - 10	5.97 ± 0.21	69 (20)	5.26 ± 0.33	83 (19)	5.63 ± 0.20	91 (20)	5.27 ± 0.22 *	74 (18)
		10 - 13	6.60 ± 0.22 **	69 (20)	6.23 ± 0.31	81 (19)	6.11 ± 0.19	89 (20)	5.67 ± 0.23 **	74 (18)
		13 - 16	6.48 ± 0.23 *	69 (20)	6.07 ± 0.25	81 (19)	6.20 ± 0.19	89 (20)	5.61 ± 0.29 *	74 (18)
		16 - 19	6.76 ± 0.28 **	69 (20)	6.40 ± 0.32	81 (19)	5.57 ± 0.21 **	89 (20)	4.67 ± 0.31 **	74 (18)
		19 - 21	7.52 ± 0.23 **	69 (20)	6.72 ± 0.25	81 (19)	6.44 ± 0.32 *	89 (20)	4.07 ± 0.20 **	74 (18)
		4 - 21	37.34 ± 0.86 **	69 (20)	35.08 ± 1.18	81 (19)	34.15 ± 0.89 *	88 (20)	29.07 ± 0.93 **	74 (18)

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**F1 Pups**

**Treatment Groups (ppm)**

Phase	Litter ID	Days	0		1000		5000		10000	
			WT Gain (g)	N	WT Gain (g)	N	WT Gain (g)	N	WT Gain (g)	N
PND	A	1 - 4	3.11 ± 0.08	257 (20)	2.75 ± 0.12	267 (23)	3.01 ± 0.09	258 (21)	2.88 ± 0.11	236 (22)
PND	B	1 - 4	2.74 ± 0.15	247 (21)	2.67 ± 0.16	280 (23)	2.52 ± 0.20	262 (21)	2.52 ± 0.16	268 (22)
PND	C	1 - 4	2.62 ± 0.20	184 (21)	2.71 ± 0.22	184 (21)	2.84 ± 0.14	196 (20)	2.42 ± 0.22	203 (20)
		4 - 7	4.13 ± 0.29	173 (21)	4.12 ± 0.28	167 (21)	4.16 ± 0.26	187 (20)	3.86 ± 0.25	166 (19)
		7 - 10	6.08 ± 0.19	171 (21)	5.40 ± 0.29	159 (21)	5.75 ± 0.20	185 (20)	5.10 ± 0.32 *	163 (19)
		10 - 13	6.76 ± 0.21 **	170 (21)	6.26 ± 0.26	156 (21)	6.30 ± 0.20	183 (20)	5.57 ± 0.24 **	162 (19)
		13 - 16	6.72 ± 0.19 **	170 (21)	6.02 ± 0.27 *	156 (21)	6.32 ± 0.16	183 (20)	5.51 ± 0.31 **	162 (19)
		16 - 19	7.20 ± 0.28 **	170 (21)	6.31 ± 0.34	156 (21)	5.74 ± 0.24 **	183 (20)	4.54 ± 0.35 **	162 (19)
		19 - 21	7.91 ± 0.23 **	170 (21)	7.20 ± 0.25	156 (21)	6.84 ± 0.33 **	183 (20)	4.15 ± 0.19 **	162 (19)
		4 - 21	38.82 ± 0.82 **	170 (21)	35.57 ± 1.23	156 (21)	35.23 ± 0.95 *	182 (20)	28.82 ± 1.33 **	162 (19)

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F2 Males

Treatment Groups (ppm)

Phase	Litter ID	Days	0		1000		5000		10000	
			WT Gain (g)	N	WT Gain (g)	N	WT Gain (g)	N	WT Gain (g)	N
PND	A	1 - 4	2.85 ± 0.13	198 (32)	3.03 ± 0.15	170 (30)	2.96 ± 0.17	165 (32)	3.09 ± 0.11	137 (27)
PND	B	1 - 4	3.04 ± 0.16	219 (34)	3.22 ± 0.17	174 (30)	2.90 ± 0.13	176 (31)	3.03 ± 0.12	169 (33)
PND	C	1 - 4	2.66 ± 0.17	211 (31)	2.94 ± 0.13	191 (35)	2.83 ± 0.15	166 (27)	2.70 ± 0.13	147 (33)
		4 - 7	4.59 ± 0.23 **	169 (31)	4.89 ± 0.19	170 (35)	4.44 ± 0.20	142 (27)	3.89 ± 0.30 *	135 (33)
		7 - 10	6.20 ± 0.25 **	165 (31)	6.06 ± 0.26	165 (35)	6.00 ± 0.20	137 (27)	4.92 ± 0.45 **	129 (33)
		10 - 13	6.41 ± 0.24 *	161 (31)	6.37 ± 0.22	161 (35)	6.45 ± 0.29	135 (27)	5.99 ± 0.28	122 (33)
		13 - 16	6.60 ± 0.16 *	160 (31)	6.00 ± 0.15	161 (35)	6.07 ± 0.17 *	135 (27)	6.01 ± 0.28 *	122 (33)
		16 - 19	6.69 ± 0.34 **	160 (31)	7.00 ± 0.33	161 (35)	5.90 ± 0.22	135 (27)	5.19 ± 0.20 **	122 (33)
		19 - 21	7.99 ± 0.26 **	160 (31)	8.26 ± 0.20	161 (35)	7.63 ± 0.29	135 (27)	5.48 ± 0.35 **	122 (33)
		4 - 21	38.92 ± 0.77 **	160 (31)	38.84 ± 0.86	161 (35)	36.66 ± 0.69	135 (27)	32.13 ± 0.98 **	122 (33)

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F2 Females

Treatment Groups (ppm)

Phase	Litter ID	Days	0		1000		5000		10000	
			WT Gain (g)	N	WT Gain (g)	N	WT Gain (g)	N	WT Gain (g)	N
PND	A	1 - 4	2.79 ± 0.11	197 (32)	3.00 ± 0.15	179 (30)	2.84 ± 0.17	204 (31)	2.84 ± 0.10	144 (29)
PND	B	1 - 4	2.87 ± 0.17	217 (34)	3.10 ± 0.17	201 (30)	2.56 ± 0.14	195 (31)	2.83 ± 0.14	171 (33)
PND	C	1 - 4	2.34 ± 0.22	186 (32)	2.68 ± 0.13	211 (36)	2.65 ± 0.16	165 (27)	2.44 ± 0.13	177 (33)
		4 - 7	4.23 ± 0.23 **	153 (32)	4.52 ± 0.18	186 (36)	4.28 ± 0.21	144 (27)	3.68 ± 0.26	164 (33)
		7 - 10	5.99 ± 0.23 *	148 (32)	5.92 ± 0.21	178 (36)	5.82 ± 0.30	140 (27)	5.23 ± 0.38	159 (33)
		10 - 13	6.48 ± 0.28 **	147 (32)	6.20 ± 0.14	178 (36)	6.24 ± 0.15	137 (26)	5.60 ± 0.34 *	155 (33)
		13 - 16	6.07 ± 0.32	145 (32)	5.86 ± 0.15	178 (36)	5.67 ± 0.22	137 (26)	5.55 ± 0.29	155 (33)
		16 - 19	6.28 ± 0.43 **	145 (32)	6.55 ± 0.35	176 (36)	5.73 ± 0.23	137 (26)	5.18 ± 0.22 *	155 (33)
		19 - 21	6.71 ± 0.35 **	146 (32)	7.57 ± 0.23	176 (36)	7.17 ± 0.28	137 (26)	4.59 ± 0.31 **	155 (33)
		4 - 21	35.96 ± 1.30 **	146 (32)	36.75 ± 0.73	178 (36)	35.45 ± 0.69	137 (26)	30.02 ± 1.18 **	155 (33)

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**F2 Pups**

**Treatment Groups (ppm)**

Phase	Litter ID	Days	Treatment Groups (ppm)							
			0		1000		5000		10000	
			WT Gain (g)	N	WT Gain (g)	N	WT Gain (g)	N	WT Gain (g)	N
PND	A	1 - 4	2.82 ± 0.11	395 (32)	3.01 ± 0.15	349 (30)	2.87 ± 0.17	369 (32)	2.95 ± 0.10	281 (29)
PND	B	1 - 4	2.95 ± 0.17	436 (34)	3.15 ± 0.16	375 (31)	2.72 ± 0.13	371 (31)	2.92 ± 0.13	340 (33)
PND	C	1 - 4	2.41 ± 0.22	397 (32)	2.77 ± 0.13	402 (36)	2.71 ± 0.15	331 (28)	2.52 ± 0.13	324 (34)
		4 - 7	4.38 ± 0.23 **	322 (32)	4.67 ± 0.18	356 (36)	4.35 ± 0.20	286 (28)	3.62 ± 0.27 *	299 (34)
		7 - 10	6.05 ± 0.23 **	313 (32)	5.93 ± 0.24	343 (36)	5.90 ± 0.16	277 (28)	4.98 ± 0.37 **	288 (34)
		10 - 13	6.38 ± 0.25 **	308 (32)	6.28 ± 0.16	339 (36)	6.36 ± 0.23	272 (28)	5.69 ± 0.29 *	277 (34)
		13 - 16	6.20 ± 0.30	305 (32)	5.89 ± 0.14	339 (36)	5.84 ± 0.18	272 (28)	5.65 ± 0.30	277 (34)
		16 - 19	6.37 ± 0.41 **	305 (32)	6.78 ± 0.31	337 (36)	5.84 ± 0.21	272 (28)	5.13 ± 0.21 **	277 (34)
		19 - 21	7.25 ± 0.34 **	306 (32)	7.84 ± 0.19	337 (36)	7.41 ± 0.27	272 (28)	4.96 ± 0.33 **	277 (34)
		4 - 21	36.93 ± 1.34 **	306 (32)	37.60 ± 0.78	339 (36)	35.98 ± 0.63	272 (28)	30.44 ± 1.19 **	277 (34)

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#### LEGEND

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N = the number of pups (number of litters)

PND4 weights are precull if litters are culled on postnatal day 4.

Data are displayed as the means and standard errors of the litter means.

PND - Postnatal Day, pups pre-weaning

In multiple breeding/littering studies Litter A is the default designation for the first litter; subsequent litters of the same pair would be B, C etc.

Pup weights are adjusted for covariate litter size. Total live on PND 1 for day 1 to cull day, and number of live pups after culling for later weight days.

Statistical analysis was performed using mixed models with dam ID as a random effect for both trend and pairwise tests, using Dunnett-Hsu adjustment for multiple comparisons.

Statistical significance for the control group indicates a significant trend test

Statistical significance for a treatment group indicates a significant pairwise test compared to the vehicle control group

\* Statistically significant at  $P \leq 0.05$

\*\* Statistically significant at  $P \leq 0.01$

Pup weights were excluded as outliers for the F1 C litter for one female pup in the 0 ppm group on PND 16 therefore, the pup weight gains for PND 13-16 and PND 16-19 were excluded. Pup weights were excluded as outliers for the F1 C litter for two female pups in the 1000 ppm group on PND 19 therefore, the pup weight gains for PND 16-19 and PND 19-21 were excluded.

**\*\* END OF REPORT \*\***