

Table 46

Two generation reproductive toxicity study of NP by oral administration in rats
 Body weight gain of F₁ males after weaning; Mean±S.D. (N)

Compound	Nonylphenol				
	0 ^a	2	10	50	
Dose (mg/kg)					
Days of age					
21-28	40.2 ± 6.0 (59)	41.2 ± 4.0 (41)	41.5 ± 3.3 (50)	40.1 ± 8.1 (46)	
21-35	96.8 ± 10.4 (59)	98.7 ± 9.8 (41)	97.8 ± 7.8 (50)	95.8 ± 13.0 (46)	
21-42	155.9 ± 16.4 (59)	160.9 ± 15.6 (41)	157.9 ± 12.8 (50)	156.7 ± 17.9 (46)	
21-49	216.3 ± 22.8 (59)	222.0 ± 21.0 (41)	218.8 ± 18.2 (50)	216.6 ± 23.8 (46)	
21-56	266.4 ± 29.4 (59)	276.8 ± 24.0 (41)	273.0 ± 23.4 (50)	270.5 ± 29.2 (46)	
21-63	312.0 ± 33.1 (59)	316.7 ± 27.5 (41)	319.7 ± 29.4 (50)	318.3 ± 32.3 (46)	
21-70	347.3 ± 38.2 (59)	353.0 ± 29.9 (41)	358.3 ± 36.0 (50)	355.8 ± 36.6 (46)	
21-77	380.4 ± 53.4 (30)	391.9 ± 35.4 (21)	391.5 ± 40.2 (25)	394.7 ± 39.8 (23)	
21-84	410.1 ± 57.1 (30)	422.9 ± 38.2 (21)	422.5 ± 44.9 (25)	423.7 ± 42.3 (23)	
21-91	435.0 ± 58.8 (30)	448.1 ± 39.2 (21)	449.5 ± 47.0 (25)	449.0 ± 45.2 (23)	

a: vehicle control, corn oil (2 mL/kg)

Table 47
 Two generation reproductive toxicity study of NP by oral administration in rats
 Body weight of F1 females after weaning; Mean±S.D. (N)

Compound	Nonylphenol							
	0 ^a	2	5.2	8.2	10.9	13.3	10	50
Days of age								
21	53.8 ± 4.5 (119)	53.4 ± 5.2 (82)	53.5 ± 4.5 (106)	52.7 ± 3.9 (92)				
28	88.3 ± 6.3 (59)	88.5 ± 8.2 (41)	89.3 ± 6.2 (50)	88.5 ± 8.5 (46)				
35	130.9 ± 10.0 (59)	131.6 ± 10.9 (41)	132.1 ± 9.6 (50)	130.5 ± 9.3 (46)				
42	164.4 ± 13.9 (59)	166.1 ± 13.3 (41)	164.7 ± 11.5 (50)	164.4 ± 11.8 (46)				
49	191.9 ± 16.9 (59)	191.1 ± 14.7 (41)	191.9 ± 13.4 (50)	191.2 ± 14.3 (46)				
56	215.3 ± 20.2 (59)	213.5 ± 15.7 (41)	215.6 ± 16.5 (50)	214.2 ± 16.6 (46)				
63	237.2 ± 23.5 (59)	233.5 ± 18.4 (41)	240.1 ± 17.6 (50)	234.7 ± 19.2 (46)				
70	256.3 ± 26.3 (59)	250.3 ± 19.9 (41)	258.4 ± 21.2 (50)	250.3 ± 22.2 (46)				
77	271.9 ± 32.6 (30)	261.0 ± 19.2 (21)	272.2 ± 20.6 (25)	258.2 ± 24.9 (23)				
84	286.5 ± 35.7 (30)	273.9 ± 21.5 (21)	283.7 ± 23.7 (25)	269.9 ± 27.2 (23)				
91	299.3 ± 36.2 (30)	282.1 ± 21.9 (21)	296.6 ± 24.6 (25)	278.3 ± 27.2 (23)				

a: vehicle control, corn oil (2 mL/kg)

Table 48

Two generation reproductive toxicity study of NP by oral administration in rats

Body weight gain of F1 females after weaning; Mean±S.D. (N)

Compound	Nonylphenol				
	0 ^a	2	10	50	
Days of age					
21-28	34.0 ± 4.0 (59)	35.0 ± 4.1 (41)	35.6 ± 3.7 (50)	35.5 ± 7.1 (46)	
21-35	76.6 ± 7.9 (59)	78.0 ± 7.1 (41)	78.4 ± 7.3 (50)	77.5 ± 7.1 (46)	
21-42	110.1 ± 11.9 (59)	112.6 ± 9.7 (41)	111.0 ± 9.8 (50)	111.4 ± 9.8 (46)	
21-49	137.6 ± 15.0 (59)	137.6 ± 11.5 (41)	138.2 ± 12.2 (50)	138.2 ± 12.9 (46)	
21-56	161.0 ± 18.4 (59)	160.0 ± 12.9 (41)	161.9 ± 15.4 (50)	161.2 ± 15.6 (46)	
21-63	182.9 ± 21.6 (59)	179.9 ± 16.4 (41)	186.4 ± 16.8 (50)	181.8 ± 18.2 (46)	
21-70	202.1 ± 24.3 (59)	196.7 ± 18.3 (41)	204.6 ± 20.7 (50)	197.4 ± 21.1 (46)	
21-77	217.9 ± 30.4 (30)	207.1 ± 17.1 (21)	218.2 ± 19.9 (25)	204.9 ± 23.6 (23)	
21-84	232.5 ± 33.6 (30)	219.9 ± 19.7 (21)	229.7 ± 23.5 (25)	216.5 ± 26.0 (23)	
21-91	245.2 ± 34.1 (30)	228.1 ± 20.1 (21)	242.6 ± 24.5 (25)	225.0 ± 25.9 * (23)	

a: vehicle control, corn oil (2 mL/kg)

*: significant difference from control, p<0.05

Table 49

Two generation reproductive toxicity study of NP by oral administration in rats

Food consumption of F1 males after weaning; Mean±S.D. (N)

Compound	Nonylphenol				
	0 ^a	2	10	50	
Days of age					
23-24	9.9 ± 1.4 (59)	11.4 ± 5.0 (41)	10.0 ± 1.1 (50)	9.8 ± 1.4 (46)	
30-31	15.7 ± 1.5 (59)	16.3 ± 1.7 (41)	15.7 ± 1.2 (50)	16.2 ± 1.3 (46)	
37-38	21.3 ± 2.0 (59)	22.1 ± 1.7 (41)	21.3 ± 1.8 (50)	21.5 ± 2.8 (46)	
44-45	24.4 ± 2.1 (59)	25.5 ± 1.8 (41)	24.5 ± 2.1 (50)	24.9 ± 2.5 (46)	
51-52	26.6 ± 3.6 (59)	29.3 ± 1.7 ** (41)	27.2 ± 2.1 (50)	27.0 ± 2.4 (46)	
58-59	28.3 ± 2.5 (59)	28.0 ± 6.2 (41)	28.5 ± 2.9 (50)	28.5 ± 1.7 (46)	
65-66	27.1 ± 2.5 (59)	29.5 ± 2.3 ** (41)	28.4 ± 3.6 (50)	28.8 ± 3.8 (46)	
72-73	27.5 ± 2.6 (59)	28.9 ± 2.1 (40)	28.2 ± 3.2 (50)	28.3 ± 3.1 (46)	
79-80	29.2 ± 3.4 (30)	30.3 ± 3.1 (21)	29.5 ± 4.0 (25)	29.5 ± 3.4 (23)	
86-87	29.6 ± 3.0 (30)	30.7 ± 3.8 (21)	30.3 ± 4.0 (25)	29.7 ± 3.7 (23)	

a: vehicle control, corn oil (2 mL/kg)

**: significant difference from control, p<0.01

Table 50

Two generation reproductive toxicity study of NP by oral administration in rats

Food consumption of F1 females after weaning; Mean±S.D. (N)

Compound	Nonylphenol				
	0 ^a	2	10	50	
Days of age					
23-24	9.3 ± 1.9 (59)	9.7 ± 1.2 (41)	9.5 ± 0.9 (50)	9.1 ± 1.2 (46)	
30-31	14.1 ± 1.2 (59)	14.8 ± 1.5* (41)	15.2 ± 5.2 (50)	14.7 ± 1.2* (46)	
37-38	17.5 ± 1.9 (59)	17.5 ± 1.6 (41)	17.4 ± 1.4 (50)	17.7 ± 2.6 (46)	
44-45	17.9 ± 1.9 (59)	17.9 ± 1.6 (41)	18.2 ± 1.6 (50)	18.8 ± 1.6* (46)	
51-52	18.8 ± 1.9 (59)	19.5 ± 1.7 (41)	18.2 ± 1.9 (50)	19.6 ± 2.1 (46)	
58-59	19.9 ± 2.4 (59)	20.5 ± 2.1 (41)	19.3 ± 1.5 (50)	19.6 ± 2.4 (46)	
65-66	19.5 ± 2.8 (59)	20.6 ± 1.7 (41)	19.4 ± 2.9 (50)	19.8 ± 3.9 (46)	
72-73	20.0 ± 2.1 (59)	18.7 ± 4.2 (41)	19.6 ± 1.4 (50)	19.5 ± 2.6 (46)	
79-80	20.9 ± 3.4 (30)	20.7 ± 3.4 (21)	20.1 ± 2.9 (25)	20.0 ± 3.6 (23)	
86-87	21.9 ± 4.5 (30)	20.6 ± 2.3 (21)	21.4 ± 3.3 (25)	19.1 ± 2.7* (23)	

a: vehicle control, corn oil (2 mL/kg)

*: significant difference from control, p<0.05

Table 51

Two generation reproductive toxicity study of NP by oral administration in rats

Sexual maturation of F1 males; Mean±S.D. (N)

Compound	Nonylphenol			
	0 ^a	2	10	50
Age at preputial separation (day)	42.9 ± 2.1 (30)	42.3 ± 1.9 (21)	42.6 ± 1.9 (25)	42.9 ± 2.2 (23)
Body weight at preputial separation (g)	220.6 ± 19.9 (30)	219.6 ± 15.9 (21)	217.7 ± 13.2 (25)	219.5 ± 14.0 (23)

a: vehicle control, corn oil (2 mL/kg)

Table 52

Two generation reproductive toxicity study of NP by oral administration in rats

Sexual maturation of F1 females; Mean±S.D. (N)

Compound	Nonylphenol			
	0 ^a	2	10	50
Age at vaginal opening (day)	33.4 ± 2.5 (30)	33.1 ± 2.0 (21)	33.4 ± 2.8 (25)	31.5 ± 1.8** (23)
Body weight at vaginal opening (g)	120.1 ± 13.0 (30)	121.8 ± 12.4 (21)	119.3 ± 12.1 (25)	110.2 ± 11.5 * (23)

a: vehicle control, corn oil (2 mL/kg)

*: significant difference from control, p<0.05

**: significant difference from control, p<0.01

Table 53

Two generation reproductive toxicity study of NP by oral administration in rats

Open field test in F1 males; Mean±S.D. (N)

Compound	Nonylphenol				
	0 ^a	2	10	50	
The first day					
Latency (sec.)	16.9 ± 15.8 (29)	19.3 ± 22.2 (20)	21.4 ± 23.6 (25)	18.6 ± 21.3 (23)	
Ambulation (cm)	932.1 ± 553.2 (29)	730.0 ± 283.8 (20)	734.0 ± 474.0 (25)	956.2 ± 445.7 (23)	
Rearing (no.)	4.7 ± 3.6 (29)	2.6 ± 1.8 (20)	3.5 ± 2.6 (25)	4.7 ± 3.7 (23)	
Grooming (no.)	0.1 ± 0.4 (29)	0.6 ± 0.7* (20)	0.2 ± 0.4 (25)	0.5 ± 0.9 (23)	
Defecation (no.)	2.0 ± 1.7 (29)	1.6 ± 1.9 (20)	2.1 ± 1.9 (25)	1.7 ± 1.5 (23)	
Urination (no.)	0.4 ± 0.5 (29)	0.5 ± 0.7 (20)	0.4 ± 0.5 (25)	0.3 ± 0.5 (23)	
The second day					
Latency (sec.)	10.6 ± 9.5 (29)	10.1 ± 7.8 (20)	10.2 ± 11.5 (25)	11.3 ± 16.1 (23)	
Ambulation (cm)	1474.7 ± 860.3 (29)	1271.1 ± 698.9 (20)	1049.2 ± 636.3 (25)	1302.2 ± 661.7 (23)	
Rearing (no.)	4.1 ± 3.3 (29)	3.1 ± 2.4 (20)	3.4 ± 2.7 (25)	4.4 ± 3.2 (23)	
Grooming (no.)	0.6 ± 0.8 (29)	0.6 ± 0.6 (20)	0.4 ± 0.6 (25)	0.5 ± 0.7 (23)	
Defecation (no.)	1.2 ± 1.6 (29)	1.4 ± 2.3 (20)	2.2 ± 2.1 (25)	1.7 ± 1.8 (23)	
Urination (no.)	0.2 ± 0.4 (29)	0.1 ± 0.3 (20)	0.2 ± 0.4 (25)	0.2 ± 0.4 (23)	
The third day					
Latency (sec.)	5.7 ± 6.6 (29)	5.1 ± 8.9 (20)	7.2 ± 15.9 (25)	4.1 ± 3.7 (23)	
Ambulation (cm)	1631.6 ± 1099.0 (29)	1823.1 ± 868.6 (20)	1543.7 ± 788.4 (25)	1727.3 ± 821.9 (23)	
Rearing (no.)	5.3 ± 5.2 (29)	4.4 ± 3.9 (20)	5.0 ± 4.1 (25)	4.7 ± 2.9 (23)	
Grooming (no.)	0.3 ± 0.5 (29)	0.6 ± 0.7 (20)	0.4 ± 0.6 (25)	0.4 ± 0.8 (23)	
Defecation (no.)	1.1 ± 1.4 (29)	1.2 ± 1.5 (20)	1.7 ± 2.0 (25)	1.2 ± 1.8 (23)	
Urination (no.)	0.1 ± 0.3 (29)	0.1 ± 0.2 (20)	0.2 ± 0.4 (25)	0.1 ± 0.5 (23)	

a: vehicle control, corn oil (2 mL/kg)

*: significant difference from control, p<0.05

Table 54

Two generation reproductive toxicity study of NP by oral administration in rats

Open field test in F1 females; Mean±S.D. (N)

Compound	Nonylphenol				
	0 ^a	2	10	50	
The first day					
Latency (sec.)	17.3 ± 17.5	9.7 ± 7.9	13.6 ± 10.9	18.0 ± 14.5	(23)
Ambulation (cm)	1518.8 ± 572.2	906.9 ± 456.9 **	1477.0 ± 593.4	1531.1 ± 657.1	(23)
Rearing (no.)	7.6 ± 5.5	4.6 ± 2.9	4.4 ± 2.4	6.7 ± 4.1	(23)
Grooming (no.)	0.3 ± 0.5	0.2 ± 0.4	0.3 ± 0.5	0.0 ± 0.2	(23)
Defecation (no.)	0.6 ± 1.2	0.9 ± 1.1	0.6 ± 0.9	0.7 ± 1.3	(23)
Urination (no.)	0.1 ± 0.3	0.1 ± 0.3	0.1 ± 0.3	0.3 ± 0.4	(23)
The second day					
Latency (sec.)	7.5 ± 9.3	8.1 ± 8.0	8.0 ± 6.3	6.5 ± 5.7	(23)
Ambulation (cm)	2189.9 ± 908.4	1331.2 ± 758.5 *	1964.5 ± 1115.7	2232.7 ± 667.7	(23)
Rearing (no.)	8.2 ± 5.8	4.0 ± 2.8 *	4.8 ± 3.3	7.1 ± 4.6	(23)
Grooming (no.)	1.0 ± 1.1	0.5 ± 0.6	0.5 ± 0.7	1.0 ± 0.9	(23)
Defecation (no.)	0.3 ± 0.9	1.2 ± 1.8	0.6 ± 1.6	0.3 ± 0.9	(23)
Urination (no.)	0.1 ± 0.3	0.2 ± 0.4	0.1 ± 0.3	0.0 ± 0.2	(23)
The third day					
Latency (sec.)	4.5 ± 6.5	5.1 ± 5.2	4.4 ± 6.1	3.1 ± 3.3	(23)
Ambulation (cm)	2508.8 ± 1122.9	1800.5 ± 893.2	2443.0 ± 1273.7	2711.8 ± 811.2	(23)
Rearing (no.)	9.0 ± 6.4	6.2 ± 4.2	6.1 ± 4.5	8.4 ± 6.8	(23)
Grooming (no.)	0.6 ± 0.7	0.5 ± 0.8	0.4 ± 0.7	0.4 ± 0.7	(23)
Defecation (no.)	0.3 ± 0.8	0.4 ± 0.8	0.4 ± 1.1	0.3 ± 1.1	(23)
Urination (no.)	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.1 ± 0.3	(23)

a: vehicle control, corn oil (2 mL/kg)

*: significant difference from control, p<0.05

**: significant difference from control, p<0.01

Table 55

Two generation reproductive toxicity study of NP by oral administration in rats

Water multiple T-maze test in F1 males; Mean±S.D. (N)

Compound	Nonylphenol				
	0 ^a	2	10	50	
The first day 1st trial	Time	54 ± 29	51 ± 24	56 ± 28	(21)
	Error	10 ± 5	12 ± 6	11 ± 7	
		(29)	(20)	(25)	
2nd trial	Time	61 ± 41	40 ± 17	48 ± 33	(23)
	Error	10 ± 7	9 ± 4	9 ± 8	
		(29)	(20)	(24)	
3rd trial	Time	39 ± 34	43 ± 38	36 ± 25	(23)
	Error	7 ± 5	7 ± 7	7 ± 7	
		(29)	(20)	(24)	
The second day 1st trial	Time	51 ± 25 *	31 ± 14	34 ± 19	(23)
	Error	9 ± 5	7 ± 5	6 ± 5	
		(19)	(25)	(25)	
2nd trial	Time	26 ± 10	25 ± 21	17 ± 5	(23)
	Error	5 ± 3	5 ± 6	2 ± 2	
		(29)	(19)	(25)	
3rd trial	Time	21 ± 13	24 ± 26	15 ± 5	(23)
	Error	4 ± 3	3 ± 4	2 ± 3	
		(29)	(20)	(25)	
The third day 1st trial	Time	35 ± 28	31 ± 22	22 ± 13	(23)
	Error	5 ± 5	6 ± 6	4 ± 5	
		(29)	(20)	(25)	
2nd trial	Time	17 ± 8	15 ± 8	14 ± 6	(23)
	Error	2 ± 3	2 ± 3	1 ± 3	
		(29)	(20)	(25)	
3rd trial	Time	16 ± 5	12 ± 4	13 ± 5	(23)
	Error	1 ± 2	1 ± 1	1 ± 1	
		(29)	(20)	(25)	

a: vehicle control, corn oil (2 mL/kg)

*: significant difference from control, p<0.05

Table 56

Two generation reproductive toxicity study of NP by oral administration in rats

Water multiple T-maze test in F1 females; Mean \pm S.D. (N)

Compound	Nonylphenol								
	0 ^a		2		10		50		
The first day 1st trial	Time	55 \pm 20	(28)	55 \pm 13	(18)	76 \pm 34	(21)	80 \pm 35 *	(20)
	Error	13 \pm 6		12 \pm 4		18 \pm 9		17 \pm 8	
2nd trial	Time	56 \pm 37	(26)	84 \pm 49	(18)	60 \pm 28	(21)	57 \pm 29	(21)
	Error	12 \pm 10		17 \pm 11		14 \pm 6		12 \pm 6	
3rd trial	Time	50 \pm 37	(29)	58 \pm 33	(18)	42 \pm 26	(24)	40 \pm 31	(21)
	Error	10 \pm 9		10 \pm 7		9 \pm 7		8 \pm 7	
The second day 1st trial	Time	37 \pm 19	(26)	44 \pm 33	(20)	54 \pm 40	(24)	40 \pm 25	(22)
	Error	8 \pm 6		8 \pm 9		12 \pm 13		7 \pm 6	
2nd trial	Time	33 \pm 19	(29)	30 \pm 19	(19)	30 \pm 29	(25)	25 \pm 15	(23)
	Error	6 \pm 6		6 \pm 5		6 \pm 11		4 \pm 5	
3rd trial	Time	24 \pm 20	(29)	27 \pm 25	(20)	19 \pm 16	(25)	21 \pm 15	(23)
	Error	4 \pm 5		4 \pm 5		3 \pm 5		3 \pm 5	
The third day 1st trial	Time	35 \pm 33	(29)	33 \pm 34	(20)	17 \pm 11 *	(24)	19 \pm 13	(23)
	Error	7 \pm 10		4 \pm 5		2 \pm 4		3 \pm 4	
2nd trial	Time	17 \pm 9	(29)	23 \pm 19	(20)	18 \pm 23	(25)	12 \pm 4	(23)
	Error	2 \pm 2		2 \pm 4		2 \pm 4		1 \pm 2	
3rd trial	Time	15 \pm 6	(29)	18 \pm 8	(20)	14 \pm 7	(25)	13 \pm 6	(23)
	Error	1 \pm 2		2 \pm 3		1 \pm 2		1 \pm 2	

a: vehicle control, corn oil (2 mL/kg)

*: significant difference from control, p<0.05

Table 57

Two generation reproductive toxicity study of NP by oral administration in rats

Spontaneous motor activity test of F1 males; Mean \pm S.D. (N)

Compound	Nonylphenol			
	0 ^a	2	10	50
Wheel cage activity (count/24hours)	1881 \pm 681 (29)	1501 \pm 666 (20)	1752 \pm 486 (25)	1963 \pm 616 (23)

a: vehicle control, corn oil (2 mL/kg)

Table 58

Two generation reproductive toxicity study of NP by oral administration in rats

Spontaneous motor activity test of F1 females; Mean \pm S.D. (N)

Compound	Nonylphenol			
	0 ^a	2	10	50
Wheel cage activity (count/24hours)	3798 \pm 1592 (29)	4540 \pm 1387 (20)	3935 \pm 1621 (25)	3856 \pm 1466 (23)

a: vehicle control, corn oil (2 mL/kg)

Table 59

Two generation reproductive toxicity study of NP by oral administration in rats
Organ weight of F1 males at 10 weeks of age; Mean \pm S.D. (N)

Compound	Nonylphenol			
	0 ^a	2	10	50
Terminal body weight (g)	417.6 \pm 29.7 (29)	418.8 \pm 28.4 (20)	435.5 \pm 39.9 (25)	425.2 \pm 40.9 (23)
Testes (g)	3.32 \pm 0.24 b (29)	3.15 \pm 0.71 (20)	3.30 \pm 0.23 (25)	3.22 \pm 0.25 (23)
	0.80 \pm 0.08 c (29)	0.75 \pm 0.17 (20)	0.76 \pm 0.06 (25)	0.76 \pm 0.09 (23)
Epididymides (g)	0.93 \pm 0.09 (29)	0.93 \pm 0.09 (20)	0.97 \pm 0.08 (25)	0.93 \pm 0.08 (23)
	0.22 \pm 0.02 (29)	0.22 \pm 0.02 (20)	0.22 \pm 0.02 (25)	0.22 \pm 0.02 (23)
Prostate glands (g)	0.50 \pm 0.11 (29)	0.47 \pm 0.09 (20)	0.49 \pm 0.11 (25)	0.48 \pm 0.10 (23)
	0.12 \pm 0.03 (29)	0.11 \pm 0.03 (20)	0.11 \pm 0.02 (25)	0.11 \pm 0.02 (23)
Seminal vesicle (g)	1.30 \pm 0.23 (29)	1.24 \pm 0.18 (20)	1.29 \pm 0.31 (25)	1.28 \pm 0.22 (23)
	0.31 \pm 0.05 (29)	0.30 \pm 0.04 (20)	0.30 \pm 0.07 (25)	0.30 \pm 0.05 (23)

a: vehicle control, corn oil (2 mL/kg)

b: absolute weight

c: relative weight (g per 100g body weight)

Table 60

Two generation reproductive toxicity study of NP by oral administration in rats
Organ weight of F1 females at 10 weeks of age; Mean \pm S.D. (N)

Compound	Nonylphenol				
	0 ^a	2	10	50	
Dose (mg/kg)					
Terminal body weight (g)	265.9 \pm 22.6 (29)	254.5 \pm 23.4 (20)	269.8 \pm 21.6 (25)	263.9 \pm 24.3 (23)	
Uterus (g)	0.44 \pm 0.14 b (29) 0.17 \pm 0.05 c (29)	0.47 \pm 0.14 (20) 0.18 \pm 0.05 (20)	0.49 \pm 0.16 (25) 0.18 \pm 0.06 (25)	0.44 \pm 0.17 (23) 0.17 \pm 0.07 (23)	
Uterus (diestrus) (g)	0.40 \pm 0.09 (18) 0.15 \pm 0.04 (18)	0.43 \pm 0.13 (9) 0.17 \pm 0.05 (9)	0.39 \pm 0.09 (12) 0.14 \pm 0.04 (12)	0.37 \pm 0.10 (16) 0.14 \pm 0.04 (16)	
Uterus (proestrus) (g)	0.79 \pm 0.08 (3) 0.29 \pm 0.02 (3)	0.62 \pm 0.28 (3) 0.24 \pm 0.10 (3)	0.67 \pm 0.12 (8) 0.26 \pm 0.04 (8)	0.68 \pm 0.17 (5) 0.26 \pm 0.06 (5)	
Uterus (estrus) (g)	0.41 \pm 0.03 (8) 0.16 \pm 0.01 (8)	0.44 \pm 0.05 (8) 0.18 \pm 0.03 (8)	0.40 \pm 0.05 (5) 0.16 \pm 0.02 (5)	0.44 (2) 0.17 (2)	
Ovaries (mg)	96.1 \pm 21.3 (29) 36.4 \pm 8.3 (29)	96.2 \pm 13.3 (20) 37.9 \pm 5.3 (20)	98.5 \pm 17.1 (25) 36.6 \pm 6.2 (25)	93.7 \pm 17.4 (23) 35.5 \pm 6.2 (23)	

a: vehicle control, corn oil (2 mL/kg)

b: absolute weight

c: relative weight (g or mg per 100g body weight)

Table 61

Two generation reproductive toxicity study of NP by oral administration in rats

Macroscopic findings of F1 males at 10 weeks of age

Compound	Nonylphenol		
Dose (mg/kg)	0 ^a	2	10
Number of F1 males examined	29	19	25
Number of F1 males showing abnormalities	1	2	1
Types and number			
Dilatation of renal pelvis	1	1	1
Pale color of spleen	0	1	0

a: vehicle control, corn oil (2 mL/kg)

Table 62

Two generation reproductive toxicity study of NP by oral administration in rats

Macroscopic findings of F1 females at 10 weeks of age

Compound	Nonylphenol			
Dose (mg/kg)	0 ^a	2	10	50
Number of F1 females examined	29	19	25	23
Number of F1 females showing abnormalities	2	2	0	0
Types and number				
Dilatation of renal pelvis	2	1	0	0
Pale color and nodule in spleen	0	1	0	0

a: vehicle control, corn oil (2 mL/kg)

Table 63

Two generation reproductive toxicity study of NP by oral administration in rats
Estrous cycle of F1 females

Compound	Nonylphenol			
	0 ^a	2	10	50
Dose (mg/kg)				
Number of females examined	30	21	25	23
Mean length of estrous cycle in days	4.3 ± 0.6	4.1 ± 0.3	4.1 ± 0.3	4.3 ± 0.6
Number of animals showing each type of cycle during pre-mating period				
4-day cycle	21	18	21	15
5-day cycle	2	1	0	1
4/5-day cycle	2	0	1	3
Monoestrus	2	1	1	2
Irregular	3	1	2	2
Number of vaginal estrus during mating period	1.1 ± 0.4	1.0 ± 0.2	1.1 ± 0.4	1.1 ± 0.3
Mean±S.D.				

a: vehicle control, corn oil (2 mL/kg)

Table 64

Two generation reproductive toxicity study of NP by oral administration in rats

Reproductive performance of F1 animals

Compound	Nonylphenol				
	0 ^a	2	10	50	
Dose (mg/kg)					
Number of pairs examined (A)	30	21	25	23	
Number of pairs successful copulation (B)	29	21	21	22	
Copulation index [(B/A)×100, %]	96.7	100.0	84.0	95.7	
Number of pregnant females (C)	23	18	19	19	
Fertility index [(C/B)×100, %]	79.3	85.7	90.5	86.4	
Pairing days until copulation	3.8 ± 2.6	2.8 ± 1.4	2.7 ± 2.1	2.7 ± 1.4	
Mean ± S.D.					

a: vehicle control, corn oil (2 mL/kg)

Table 65

Two generation reproductive toxicity study of NP by oral administration in rats
 Body weight of F1 dams during gestation period; Mean±S.D. (N)

Compound	Nonylphenol				
	0 ^a	2	10	50	
Days of gestation					
0	299.9 ± 34.1 (23)	291.5 ± 22.5 (18)	304.0 ± 26.9 (19)	286.7 ± 26.8 (19)	
7	327.1 ± 33.9 (23)	320.2 ± 25.0 (18)	329.7 ± 28.1 (19)	309.0 ± 30.0 (19)	
14	361.2 ± 35.1 (23)	354.0 ± 30.7 (18)	362.2 ± 30.3 (19)	337.9 ± 34.9 (19)	
20	435.2 ± 35.3 (23)	420.7 ± 57.3 (18)	429.8 ± 44.7 (19)	407.6 ± 37.3 * (19)	

a: vehicle control, corn oil (2 mL/kg)

*: significant difference from control, P<0.05