

ADME NTP Study S0049 Butyl benzyl phthalate

The contractor used the abbreviation BBP for the test article in the comparison tables.

Sex/Species: male F344 rats.

Vehicle: dermal, absolute ethanol.

CASRN 85-68-7

Radiolabeled with carbon-14; Butyl benzyl phthalate, [¹⁴C-U-phthalyl]

Studies Performed:

- Single 31.6 mg/kg dermal dose to rats with covered dose site and sacrifice 7 days postdose. (n = 3)

Butyl benzyl phthalate is one of nine phthalates that were tested together to determine excretion and tissue distribution after dermal administration. The comparison data is found in the dimethyl phthalate study S0043.

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Table 1. Excretion profile of butyl benzyl phthalate in the urine and the feces after dermal application to the rat*

Time (hr)	% Dose Excreted		
	Urine	Feces	Urine and Feces ($\Sigma\bar{X}$)
24	3.2 ± 0.66	0.41 ± 0.1	3.61
48	5.4 ± 0.7	0.71 ± 0.1	6.11
72	3.07 ± 0.6	0.58 ± 0.07	3.65
96	3.88 ± 0.48	0.635 ± 0.07	4.515
120	3.72 ± 0.7	0.638 ± 0.1	4.358
144	3.18 ± 0.28	0.7 ± 0.1	3.88
168	3.1 ± 0.9	0.6 ± 0.04	3.7
Total	25.96 ± 1.77	4.3 ± 0.323	30.26

*Male F-344 rats (200 ± 20 gm) received butyl benzyl-phthalate in ethanol dermally (31.6 mg/kg). The skin was covered with a perforated plastic cap. Data points are the mean ± standard deviation. The percentage of dose excreted represents the fraction of the dose found (as ¹⁴C-equivalent) relative to the total ¹⁴C-equivalent applied.

Table 2. Tissue distribution of butyl benzyl phthalate after 7 days of the dermal exposure

Tissue	% Dose Found ($\bar{X} \pm S.D.$, n = 3)
Brain	0.129 \pm 0.075
Lung	0.012 \pm 0.007
Liver	0.073 \pm 0.021
Spleen	0.003 \pm 0.002
Small Intestine	0.047 \pm 0.004
Kidney	0.025 \pm 0.002
Testis	0.011 \pm 0.003
Fat	0.172 \pm 0.085
Muscle	4.64 \pm 3.7
Skin	0.082 \pm 0.03
Spinal Cord	0.39 \pm 0.042
Blood	0.022 \pm 0.19
Skin Area of Application	44.96 \pm 6.23
Plastic Cap	6.37 \pm 0.83
Total Recovery*	86.85 \pm 2.98

*Total recovery represents the sum of the % dose found in the urine, the feces, the tissues and the plastic cap in 7 days.

*Dose applied was 31 mg/kg.