

3. HEALTH EFFECTS

Table 3-4 Levels of Significant Exposure to Toluene - Dermal

Species (Strain)	Exposure/ Duration/ Frequency (Route)	System	NOAEL	LOAEL		Reference Chemical Form	Comments
				Less Serious	Serious		
ACUTE EXPOSURE							
Systemic							
Gn Pig (albino)	3 d 3x/d	Dermal		10 M (skin irritation) uL		Anderson et al. 1986	
Gn Pig (albino)	0.25-16 hr	Hepatic	1 mL			Kronevi et al. 1979	
		Renal	1 mL				
		Dermal		1 mL (karyopyknosis, karyolysis, perinuclear edema, spongiosis, junctional separation, cellular infiltration)			
Rabbit	once	Ocular		0.1 mL (eye irritation)		Exxon Chemical Co. 1962	
INTERMEDIATE EXPOSURE							
Systemic							
Mouse (BALB/c)	5 wk 1x/wk	Dermal		25 F uL (swelling at application site [ear lobe], inflammatory cell invasion)		Saito et al. 2011	No effects were observed with diluted preparations (25 or 50% in acetone).

d = day(s); F = Female; Gn pig = guinea pig; hr = hour(s); LOAEL = lowest-observed-adverse-effect level; M = male; NOAEL = no-observed-adverse-effect level; x = time(s); wk = weeks(s)