

**G086**  
**Toluene [108-88-3]**

**Results of Testing**

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Toluene	108-88-3	HECTOXCARC Carcinogenicity	National Toxicology Program (NTP)	B6C3F <sub>1</sub> mice	inhalation, 6.5 hr/d, 5 d/wk, 2 years	0, 0.600, 1.200 ppm	60 male 60 female	No evidence of carcinogenicity in male or female mice at either dose level. No biologically important increases were observed for any nonneoplastic or neoplastic lesions.	NTP TR-371, Feb. 1990, NTIS PB90256371
Toluene	108-88-3	HECTOXCARC Carcinogenicity	National Toxicology Program (NTP)	F344/N rats	inhalation, 6.5 hr/d, 5 d/wk, 2 years	0, 0.600, 1.200 ppm	60 male 60 female	No evidence of carcinogenicity in male or female rats at either dose level. Nephropathy was seen in almost all rats, and the severity was somewhat increased in exposed rats. Erosion of the olfactory epithelium and degeneration of the respiratory epithelium was increased in exposed rats. Inflammation of the nasal mucosa and metaplasia of the olfactory epithelium were increased in exposed female rats.	NTP TR-371, Feb. 1990, NTIS PB90256371
Toluene	108-88-3	HEEPID Retrospective cohort mortality study	Non-TSCA Protocol/ Guideline (docket OPTS-42024)	humans	Not reported	Not reported	7814	A retrospective cohort mortality study conducted among white shoe manufacturing workers from 1940 to 1982 indicated that mortality due to leukemia and aleukemia was not statistically significantly elevated. Although, statistically significant excess mortality due to cancer of the trachea, bronchus and lung was observed in the total cohort (standardized mortality ratio (SMR) 147 (95% confidence interval 120-180) and a statistically significant trend in standardized relative risk with increasing potential latency, but not with increasing duration of employment. Chronic nonmalignant respiratory disease was significantly elevated among the men (SMR 158, 95% confidence interval 114-217), but was less than expected among women (SMR 79).	Walker, J.T., et al. Scand J Work Environ Health. 1993. 19:89-95, NIOSH
Toluene	108-88-3	HERTOXTERA Developmental toxicity	Non-TSCA Protocol/ Guideline (docket OPTS-42024)	rats	inhalation, 6 hr/d on gestation days 6-15	0, 100, 400 ppm	Not reported	There were no changes in the dams that indicated an adverse compound-related effect. There was no evidence of variation in fetal sex ratio, embryo toxicity, inhibition of fetal growth and development or teratogenic potential resulting from exposure of the dams to toluene.	Docket OPTS-42024, American Petroleum Institute (API)

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Toluene	108-88-3	HESTOX Subchronic Toxicity	Non-TSCA Protocol/ Guideline (docket OPTS-42024)	mice	oral, gavage, 5 d/wk for 13 weeks	312, 625, 1250, 2500, 5000 mg/kg	10/sex	All animals receiving 5000 mg/kg died during the first week of the study. Over the 13 weeks of the study, 4 males and 4 females receiving 2500 mg/kg also died. Signs of toxicity seen in animals receiving 2500 and 5000 mg/kg included subconvulsive jerking, prostration, impaired grasping reflex, bradypnea, hypothermia, ataxia, and hypoactivity. No signs of treatment-related effects were detected in microscopic observations, organ weight means, or clinical pathology parameters. The maximum tolerated dose (MTD) observed was 1250 mg/kg.	Docket OPTS-42024, API