

G057

Hydroquinone [123-31-9]

Results of Testing

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Hydroquinone	123-31-9	HEADME Blood elimination kinetic study (voluntary test)	Non-TSCA Protocol/ Guideline (see docket #OPTS- 42048D)	rats	oral (gavage), single dose	50 mg/kg	3 males	More than 80% of the radioactivity was excreted by 8 hours post-dosing. Analysis of blood samples showed an average blood absorption rate constant of 1.3 minutes and a T _{max} for radioactivity in the blood of 6.5 to 7.5 minutes.	51 FR 16203; 5/1/86, OTS0518013
Hydroquinone	123-31-9	HEADME Dermal study (voluntary test)	Non-TSCA Protocol/ Guideline (see Feldman and Mail- bach 1969; Derma- toxicology, Chapter 5)	Beagle dogs	dermal and intra- venous; 1 hr (dermal), single dose (i.v.)	4.5 g/L, 15 ml (dermal); 1 or 10 mg/kg/body wt. (i.v.)	8 males	After occluded dermal application, no radioactivity of the test material was detected in the blood. Urinary excretion accounted for only 0.3% and 0.4% of the applied dose at 2 and 5 days, respectively. In the i.v. application, at 1 mg/kg, 34.5% of the dose was recovered in the urine in 7 days and 7.5% was recovered in the feces in 4 days. For the 10 mg/kg dose, recovery of the dose was 65.7% in urine and 6.1% in the feces.	51 FR 6468; 2/24/86, OTS0516696
Hydroquinone	123-31-9	HEADME Metabolic study (voluntary test)	Non-TSCA Protocol/ Guideline (see docket #OPTS- 42048D)	rats	intratracheal instil- lation, single dose	5, 25, 50 mg/kg/body wt.	5 males	The test material was rapidly absorbed through the respiratory tract and rapidly excreted in urine and feces. Within 8 hours, 80.74% of the administered dose was excreted in urine. At 48 hours, 93.86% of the dose was excreted in the urine, feces, and expired air. Urinary conjugates were the major metabolites of the test material. Hydroquinone glucuronide accounted for 48.76 to 67.21% of the dose, and hydroquinone sulfate accounted for 19.00 to 22.07% of the administered dose. Unchanged test material was present in small quantities of approximately 2.00 to 2.85% of the dose.	51 FR 6468; 2/24/86, OTS0518013
Hydroquinone	123-31-9	HEADME Pharmacokinetic study (voluntary test)	40 CFR 795.235 (modified)	rat	oral (gavage), single and repeated; dermal, single dose, 1x/d; 14d (repeated), 24 hr (dermal)	25, 350 mg/kg (single), 25 mg/kg/d (repeated), 5.4% w/v (dermal)	8 male; 8 female	At 350 mg/kg, rats showed tremors, chewing, and reduced activity. No adverse effects or unusual behaviors were noted at 25 mg/kg. In the dermal study, slight to severe erythema was noted at the test site after 24 hours.	53 FR 28909; 8/1/88, OTS0516695
Hydroquinone	123-31-9	HECTOXCARC Oncogenicity study	National Toxicology Program (NTP)	F344/N rats	gavage, 5 d/wk, 103 wk	0, 25, 50 mg/kg	65 male 65 female	Some evidence of carcinogenesis in male rats as shown by marked increases in tubular cell adenomas of the kidney. Some evidence of carcinogenesis in female rats as shown by increases in mononuclear cell leukemia.	NTP TR-366, October, 1989 NTIS PB90-240839
Hydroquinone	123-31-9	HECTOXCARC Oncogenicity study	NTP	B6C3F ₁ mouse	gavage, 5 d/wk, 103 wk	0, 50, 100 mg/kg	64-65 male 64-65 female	No evidence of carcinogenesis in male mice administered 50 or 100 mg/kg in water. Some evidence of carcinogenesis in female mice as shown by increases in hepatocellular neoplasms, mainly adenomas. Thyroid follicular cell hyperplasia was found in male and female mice and anisolariosis, multinucleated hepatocytes, and basophilic foci of the liver in male mice.	NTP TR-366, October, 19889 NTIS PB90-240839

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Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
Hydroquinone	123-31-9	HENEUR Neuropathology	40 CFR 798.6400 (modified)	rat	oral (gavage), 90 d	0, 20, 64, 200 mg/kg/d	Not specified	Preliminary summary information indicates that there were no mortalities in the study. High-dose males showed tremors, reduced activity levels, and reduced body weight gain. Tremors were also seen at 64 mg/kg/day. Neuropathology analysis is in progress.	53 FR 47867; 11/28/88, OTS0516693
Hydroquinone	123-31-9	HENEUR Functional obser- vational battery	40 CFR 798.6050 (modified)	rats	oral (gavage), 90 d	0, 20, 64, 200 mg/kg/d	Not specified	Preliminary summary information indicates that there were no mortalities in the study. High-dose males showed tremors, reduced activity levels, and reduced body weight gain. Tremors were also seen at 64 mg/kg/day. No adverse effects were seen in either sex dosed with 20 mg/kg/day. Data from the FOB is being analyzed.	53 FR 47867; 11/28/88, OTS0516693
Hydroquinone	123-31-9	HERTOXTERA Developmental toxicity	Non-TSCA Protocol/ Guideline (see docket #OPTS- 42048D)	rats	oral (gavage), gestation days 6 through 15	0, 30, 100, 300 mg/kg/d	Not specified	Maternal toxicity (reduced body weight gain and food intake) occurred in the high-dose dams. No effects on reproductive or developmental indices were noted in any group.	51 FR 6468; 2/24/86, OTS0518009
Hydroquinone	123-31-9	HERTOXTERA Developmental toxicity	Non-TSCA Protocol/ Guideline (see docket #OPTS- 42048D)	rabbits	oral gavage, gestation days 6-18	0, 25, 75, 150 mg/kg/d	18 mated females	Maternal toxicity (decreased body weight gain and food consumption) were noted at 75 mg/kg/day and higher. Fetotoxicity (external, visceral, and skeletal malformations and ocular defects such as microphthalmia) occurred at 150 mg/kg/day. The NOEL was 25 mg/kg/day.	51 FR 6468; 2/24/86, OTS0516697
Hydroquinone	123-31-9	HERTOXTERE 2-Generation repro- ductive toxicity	Non-TSCA Protocol/ Guideline (see docket #OPTS- 42048D)	rats	oral (gavage), 70 days prior to mating, through 2 generations	0, 15, 50, 150 mg/kg/d	30/sex/ generation	Parental toxicity (tremors) was noted at 50 and 150 mg/kg/day. No effects were noted on any reproductive parameter in either generation at any dose level.	55 FR 357; 1/4/90, OTS0532768
Hydroquinone	123-31-9	HESTOX Subchronic study	Non-TSCA Protocol/ Guideline (see docket #OPTS- 42048D)	rats	oral (gavage), 90 d	20, 64, 200 mg/kg/d	10 male; 10 female	Rats exposed to 200 mg/kg/day showed decreased body weight gain and food consumption. Clinical observations included brown discoloration in urine at all dose levels. Behavioral changes observed included increased urination and tremors during handling. At 200 mg/kg/day, a reduction in auditory and visual orientation, forelimb strength, and responses to olfactory stimulation was seen.	53 FR 47867; 11/28/88, OTS0516696